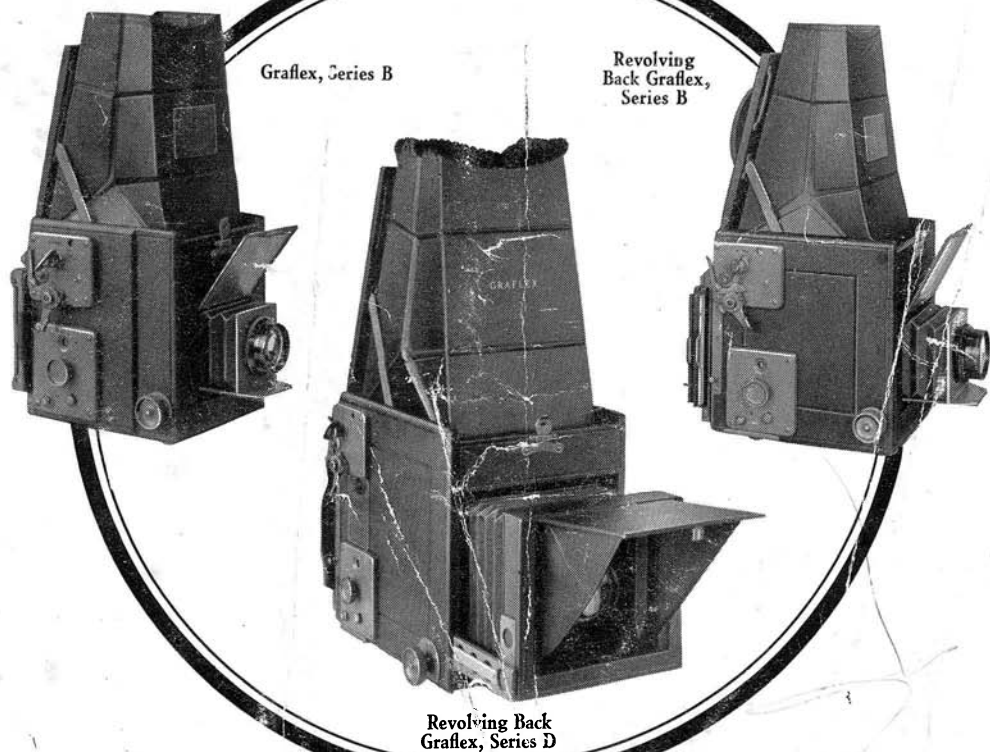
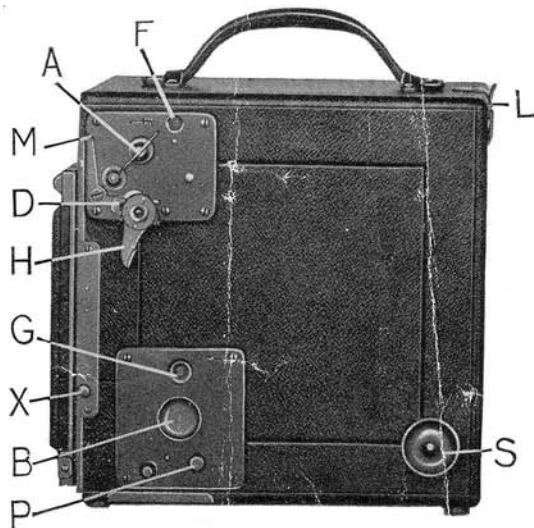


Directions for Operating
GRAFLEX, Series B
REVOLVING BACK GRAFLEX, Series B
REVOLVING BACK GRAFLEX, Series D



FOLMER GRAFLEX CORPORATION
ROCHESTER, N. Y.

Directions for Operating
Graflex, Series B
Revolving Back Graflex, Series B
Revolving Back Graflex, Series D



FOCUSING

Release the spring catch L, and raise the cover, which automatically extends the Focusing Hood. Press down the two side arms, locking the Focusing Hood in rigid position. Rack the lens out with the focusing pinion S, which causes the lens cover to open instantly, exposing the lens.

SETTING THE MIRROR

Press the lever H down until the mirror locks in focusing position.

THE SHUTTER SPEED PLATE

The metal plate, attached to the side of the camera, gives the approximate shutter speeds, in fractional parts of seconds, obtainable with the various combinations of curtain apertures and tension numbers.

**THE CURTAIN
APERTURES**

The shutter curtain contains 5 apertures ranging from full opening O to $\frac{1}{8}$ of an inch. When the letter O appears at F, the shutter is wide open. The other apertures, $1\frac{1}{2}$, $\frac{3}{4}$, $\frac{3}{8}$ and $\frac{1}{8}$, follow in rotation at F as key A is turned to the left.

**SETTING THE
SHUTTER CURTAIN**

Push down lever H. Slide the bar D to the left, exposing I, indicating instantaneous exposure. Wind the curtain by turning key A to the left, until the required aperture appears at F. If the curtain is set at a smaller aperture than required, release the curtain by pressing lever M to the left until the proper aperture number is registered at F. Example: If the subject requires an exposure of $\frac{1}{160}$ of a second, register the $\frac{3}{8}$ curtain aperture at F, and tension 3 at G.

CAUTION

A safety lock prevents the rewinding of the curtain before the mirror is set in focusing position. This prevents fogging of the film, making it necessary to set the mirror with the lever H, before rewinding the shutter curtain.

**REGULATING THE
SHUTTER SPEED**

Tension or pull on the curtain is regulated by turning the milled head B to the right until the required tension number appears at G. The numbers run from 1 to 6—the highest number indicating the greatest speed. If the tension number is set at a higher tension than required, release tension of spring by sliding escapement P, up and down, until the proper tension number is registered at G.

**INSTANTANEOUS
EXPOSURES**

After the shutter has been set, and the image on the Ground Glass Focusing Screen properly focused, the exposure is made by one gentle, downward pressure of the release lever, located on the forward, left-hand side of the camera body. The pressure on the lever simultaneously releases the mirror and curtain. *Slow, instantaneous exposures* of about $\frac{1}{5}$ second can be made with the curtain set at O (full opening), and tension No. 1. Pressure upon the shutter release

causes the mirror to rise just before the curtain drops, closing the exposing aperture.

TIME EXPOSURES Press down lever H, and slide the bar D to the right, exposing T, indicating time exposures. Wind the curtain until the letter T is registered at F. After focusing the image, *release the mirror* by pressing the shutter lever, and commence the exposure by a gentle, backward pressure on lever M. At the expiration of the required time, terminate the exposure by a second pressure on lever M.

VERTICAL AND HORIZONTAL PICTURES With the revolving back models press button X and revolve the back to vertical, horizontal, or any intermediate position. This can be done without danger of fogging the plate or film when the dark slide is drawn. With the non-revolving back models the camera must be held on its side.

DEPTH OF FOCUS

Depth of focus is the distance from the nearest to the farthest objects that appear sharp when the lens is focused on any given point.

This depth of focus depends on the focal length of the lens and the size of the stop used. The depth of focus increases as the focal length of the lens and the diameter of the stop decrease.

It is sometimes desirable to have such great depth of focus that practically all of the picture from foreground to distance will be fairly sharp. To secure such general sharpness the stop used should not be larger than $f.8$ and the lens should be focused on an object at the hyperfocal distance rather than at 100 feet or at infinity.

The hyperfocal distance is the nearest point to the camera that has satisfactory sharpness when the lens is focused on infinity. This distance varies with the size of the stop used.

By focusing an object at the hyperfocal distance of the stop used, objects from one-half this distance to infinity will be satisfactorily sharp. To secure general sharpness from approximately 22 feet to

infinity, focus on the distance shown in heavy figures, in the table, opposite the focal length of the lens, and use the stop indicated at the head of that column.

Example: For $5\frac{1}{2}$ inch focus lens, focus at 46 feet, use stop *f.11* and objects will be in focus from 23 feet to infinity.

HYPERFOCAL DISTANCES

STOP F	4.5	5.6	8	11	16	22	32
FOCAL LENGTH OF LENS $4\frac{3}{8}"$	71'	57'	40'	29'	20'	14'	10'
$5\frac{1}{2}"$	112'	90'	63'	46'	32'	23'	16'
$6\frac{3}{8}"$	151'	121'	85'	62'	43'	31'	21'
$7\frac{1}{2}"$	208'	167'	117'	85'	59'	43'	29'
$8\frac{1}{2}"$	268'	215'	151'	108'	75'	55'	38'
10"	370'	297'	209'	151'	107'	76'	53'
12"	534'	429'	301'	219'	151'	110'	76'

The nearer the point focused upon the greater the loss in depth of focus, unless the lens stop is decreased in diameter sufficiently to give the required sharpness to objects in foreground and background.

Table below shows the nearest and farthest objects in focus when lenses of different focal lengths are focused, with stop *f.8*, upon points at different distances from camera.

DEPTH OF FOCUS

Distances focused upon at Stop <i>f.8</i>		6 FT.	12 FT.	25 FT.	50 FT.
FOCAL LENGTH OF LENS	$4\frac{3}{8}"$	62"—85"	9'—17'	15'—66'	22'—Infinity
	$5\frac{1}{2}"$	65"—79"	10'—15'	18'—41'	28'—Infinity
	$6\frac{3}{8}"$	67"—78"	$10\frac{1}{2}'$ — $13\frac{3}{4}'$	19'—35'	31'—121'
	$7\frac{1}{2}"$	$68\frac{1}{2}"$ —76"	$10\frac{3}{4}'$ — $13\frac{1}{2}'$	$20\frac{1}{2}'$ —32'	35'—88'
	$8\frac{1}{2}"$	69"—75"	11'—13'	21'—30'	$37\frac{1}{2}'$ —75'
	10"	$70\frac{1}{2}"$ — $73\frac{1}{2}"$	$11\frac{1}{2}'$ — $12\frac{3}{4}'$	$22\frac{1}{2}'$ —28'	41'—65'
	12"	71"—73"	$11\frac{3}{4}'$ — $12\frac{1}{2}'$	23'—27'	43'—60'

GRAFLEX EXPOSURE TABLE FOR VIEWS

Approximately Correct Exposures with Stop F.8

Exposures with stops LARGER or SMALLER than F.8 should be respectively DECREASED or INCREASED ONE-HALF with each succeeding larger or smaller stop used.

Example=Third group—May—Bright—9 A.M. to 3 P.M.=160—F8.

Stop numbers F=	4.5	5.6	6.3	8	11	16	22	32
Relative exposure	550	350	235	160	80	40	20	10

Table shows exposures with Graflex Film, Eastman Film, Eastman 40 Plates. With Kodak Cut Film—Super Speed—shutter speed can be increased one-third.



{ Landscapes
Distant { Mountains
 { Vessels

Bright Sun

350	160	295	135	235	110
-----	-----	-----	-----	-----	-----

Very { Beach Views
Open { Snow Scenes
 { River Views

Hazy

195	90	160	75	135	65
-----	----	-----	----	-----	----

Aviators in Flight
Open Views from Train

Cloudy Dull

80	50	65	40	50	35
----	----	----	----	----	----



Open { Landscapes
 { Roads & Fields
 { Snow Scenes

Bright Sun

195	110	160	90	135	75
-----	-----	-----	----	-----	----

Nearby { Beach Views
 { Vessels
 { and Boats

Hazy

110	65	90	50	65	40
-----	----	----	----	----	----

Light Buildings
Athletic Events
from Grandstand

Cloudy Dull

65	35	50	30	35	25
----	----	----	----	----	----



Open Park Views
Snow Scenes with Objects Nearby

Bright Sun

160	80	135	65	110	50
-----	----	-----	----	-----	----

Large Figures or Groups in the Open
Vessels at Wharf

Hazy

90	50	75	40	65	35
----	----	----	----	----	----

Medium Buildings
Light Streets (wide)

Cloudy Dull

50	25	40	20	30	15
----	----	----	----	----	----



Shady Park Views
Figures in Shade of Building or in Direct Light with Dark or Foliage Background

Bright Sun

110	65	90	50	80	40
-----	----	----	----	----	----

Hazy

65	35	50	30	40	25
----	----	----	----	----	----

Dark Buildings
Light City Street
Shady Porch Groups

Cloudy Dull

35	20	30	15	20	10
----	----	----	----	----	----



Shady Driveway, Views with Overhanging Trees

Bright Sun

50	30	40	25	35	20
----	----	----	----	----	----

Hazy

30	20	25	15	20	10
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Figures under Piazza or Pergola

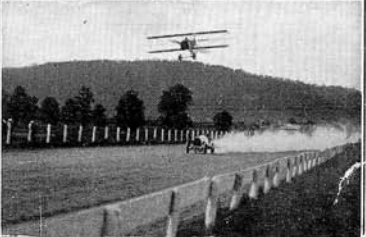
Cloudy Dull

20	10	15	1/5	10	1/2
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GRAFLEX EXPOSURES FOR STOPPING MOTION AT RIGHT ANGLES TO CAMERA

One-third less will stop motion at 45 degrees.

Two-thirds less will stop motion directly toward or from camera.

FOCAL LENGTH OF LENS		4 3/8"	5 1/2"	6 3/8"	7 1/2"	8 1/2"	10"	12"		
	Pedestrians	5 MILES	Feet 25	110	135	160	235	350	440	550
	Cattle		50	90	110	135	160	195	235	350
	Average Views		100	90	110	135	160	195	235	350
	Street Traffic	10 MILES	25	235	295	350	440	550	680	825
	Boating		50	110	135	160	235	295	350	440
	Children Playing		100	90	110	135	160	195	235	295
	Athletics	20 MILES	25	440	550	680	825	1000		
	Boat Races		50	235	295	350	440	550	680	825
	Baseball		100	110	135	195	235	295	350	440
	Autos in Street	30 MILES	25	680	825	1000	45° 825			
	Horse Racing		50	350	440	550	680	825	1000	
	Motor Boats		100	160	235	295	350	440	680	825
	Diving	60 MILES	25	45° 1000	550	680	825	1000		
	Views from Trains		50	680	825	1000	45° 825			
	Auto Races		100	350	440	550	680	825	1000	
			TOWARD CAMERA							
			25	45° 1000	550	680	825	1000		
			50	680	825	1000	45° 825			
			100	350	440	550	680	825	1000	

How to Use Table to Stop Motion at right angles to Camera.

Find the subject group, and the exposure for movement at right angles to camera will be found in the square on the line of "distance of object" and under "focal length of lens."

Example:

Subject	Motor Boat
Distance	50 Feet
Speed of Subject	30 Miles per hour
Focal Length of Lens.	6 $\frac{3}{8}$ "
Exposure	1/550th of a second

The shutter speeds given are necessary to stop the motion. The lens opening must be regulated to meet the prevailing light conditions.

For bright days it is suggested that Stop *f.8* be used with exposures 1/195 to 1/350; *f.5.6* with exposures 1/350 to 1/550; *f.4.5* for exposures 1/680 to 1/1000.

On hazy or dull days, with same exposure, proportionately larger lens openings should be used.

It is not advisable to operate the shutter at a higher speed than is necessary to stop movement of the subject, thereby gaining the advantage of full exposures and the ability to use smaller lens openings, which will give greater depth of focus.

To decrease a given shutter speed 1/3 for movement at 45 degrees, or 2/3 for oncoming subjects, use the second lower speed on Graflex exposure plate for 1/3 less, and the fifth lower exposure for 2/3 less.

Example:

	1000
	825
	680
Right angles ➡	550
	440
45 degrees; $\frac{1}{3}$ less ➡	350
	295
	235
Toward camera; $\frac{2}{3}$ less ➡	195
	160

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