

LCD PROJECTOR Model No. LC-X7 and LC-W5

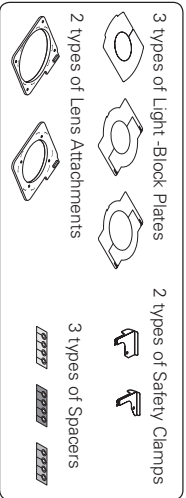
LENS REPLACEMENT AND INSTALLATION PROCEDURE

Be sure to consult with a qualified service personnel.

When installing or replacing the Projection Lens, refer to this manual. For installation of the lens, use the parts specified in this manual.

Do not use the installation manual and Light-Block Sheets in the optional lens package.

Check the following parts supplied to this projector:



AVAILABLE LENS

The lenses listed below are designed for use with the LC-X7 and LC-W5 (when applicable).

Part No.	Code No.	Type	Zoom	Focus	Projector Model No.	
					LC-X7	LC-W5
AH-21012	LNS-W01Z	Wide Fixed Lens	Fixed	Manual	OK	OK
AH-21202	LNS-W02Z	Wide Zoom Lens	Motor Driven	Motor Driven	OK	OK
AH-32021	LNS-W03	On-Axis Wide Fixed Lens	Fixed	Manual	OK	OK
AH-32401	LNS-W04	Wide Zoom Lens	Motor Driven	Motor Driven	OK	OK
AH-32501	LNS-W05	Wide Zoom Lens	Motor Driven	Motor Driven	OK	OK
AH-32601	LNS-W06	Wide Zoom Lens	Motor Driven	Motor Driven	N/A	OK
AH-32701	LNS-W07	On-Axis Wide Fixed Lens	Fixed	Manual	OK	OK
AH-21102	LNS-S02Z	Standard Zoom Lens II	Motor Driven	Motor Driven	OK	OK
AH-22051	LNS-S03	Standard Zoom Lens III	Motor Driven	Motor Driven	OK	OK
AH-21022	LNS-W01Z	Semi-Long Throw Zoom Lens	Motor Driven	Motor Driven	OK	OK
AH-21091	LNS-T02	Long Zoom Lens	Motor Driven	Motor Driven	OK	OK
AH-32581	LNS-T03	Ultra-Long Zoom Lens	Manual	Manual	OK	OK

DO NOT USE THE OPTIONAL LENS BELOW FOR LC-X7 AND LC-W5. OTHERWISE DAMAGES MAY RESULT.
LENS PART NO.: AH-21031 (LNS-T01)



LENS INSTALLATION PRECAUTIONS

- Lens installation and replacement should be made by a qualified service personnel.
- Be sure to install the lens by following this procedure precisely.
- Do not touch or remove any parts except the lens and related parts. It may result in malfunctions, electrical shock, fire hazard or other accidents.
- Before installing or replacing the lens, check that the Part No. of the Projection Lens matches to the projector.
- When moving or setting up the projector, be sure to replace the Lens Cover to protect the surface. And be careful not to hold or subject the lens to strong forces. Otherwise the lens, cabinet, or mechanical parts may damage.
- For details of the lens and installation, contact the sales dealer where you purchased the projector.

LENS REPLACEMENT AND INSTALLATION PROCEDURE

The installation procedure and needed parts for lens installation varies on Optional Lens. Check the Part No. of the Optional Lens and be sure to install or replace the lens by following the procedure below.

1

Remove the safety lens cap on the rear of the lens (mounting side). Insert the Lens Attachment and secure with the four (4) screws (supplied). (See Fig. 1)

Connect the Lens Motor Lead to the socket on the top right of the Lens Attachment. (Motor Driven Lens only) (See Fig. 2)

Focus Lens Lock Screw

Lens Attachment

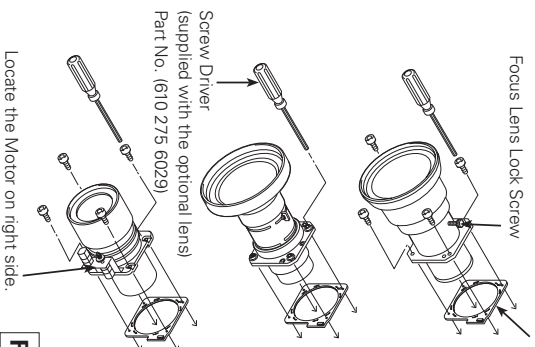


Fig. 1

Locate the Motor on right side.

Lens Attachment

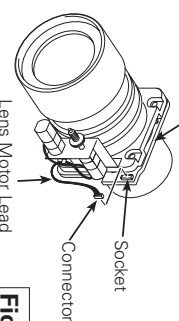


Fig. 2

2

Turn off the projector, press the Main On/Off Switch to Off and unplug the AC power cord from the AC outlet.

3

Turn the Lens Mount Cover counterclockwise and take it off by pulling forward. (See Fig. 3)

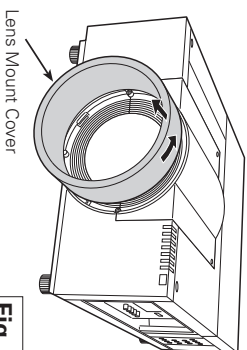


Fig. 3

4

Remove 2 Screws **A** and loosen 2 Screws **B**. Slide the Top Cover forward to take off. (See Fig. 4)

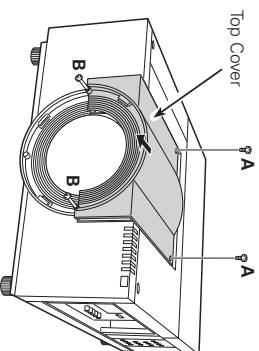


Fig. 4

Lens Attachment Type No. (PART No.)	Lens Part No.
Lens Attachment 01 AH-23841 (910 303 8743)	AH-21202, AH-32021, AH-32401, AH-32501, AH-32601, AH-32701, AH-21091, AH-32581, AH-22051, AH-21022
Lens Attachment 02 AH-25871 (910 304 6229)	AH-21201, AH-21041, AH-21021,

5 Remove the Cover Plate by lifting upwards. (See Fig. 5)

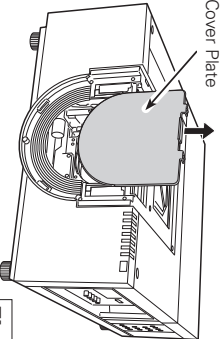


Fig. 5

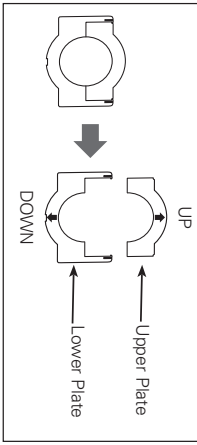
6 The LC-X7/LC-W5 can use three (3) different types of Light-Block Plates, use the Light-Block Plate that corresponds to the appropriate optional lens. (Refer to the list below)

- NOTE:
- Make sure the shape of the Light-Block Plate(s) is correct.
 - Make sure the mark (UP/DOWN and FRONT/BACK) on Light-Block Plates are correct and set them properly.
 - Use 2 Light-Block Plates for AH-32021.

Light-Block Plate for each Lens

Light-Block Plate Type No. (PART No.)	Lens Part No.
Type FK2A (610 337 0064)	AH-21102, AH-22051, AH-32581, AH-21012, AH-32401, AH-32501, AH-32601
Type FK2B (610 337 0224)	AH-21022, AH-21091, AH-21202, AH-32701, AH-32021
(610 335 4545)	AH-32021

NOTE:
• The Light-Block Plate FK2A and FK2B are separated to the upper and lower plates.



7 Insert the lower Light-Block Plate. (See Fig. 6)

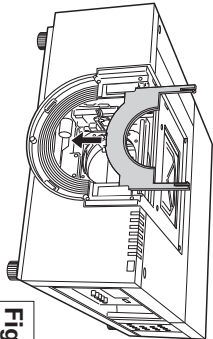


Fig. 6

8 Grasp (release lock) the Lens Lock Lever and turn it fully upward. (See Fig. 7) Install the Lens into the projector. Grasp the Lens Lock Lever and turn the Lever fully downward until lever is Locked (clicked position) properly. (See Fig. 8) When installing the Motor Driven Lens, be sure to mount Lens Motor on right side. (See Fig. 1)

After installing the lens, make sure the Lens is not loose and properly installed.

LENS LOCK RELEASE



Grasp (unlock) Lens Lock Lever and pull upward.

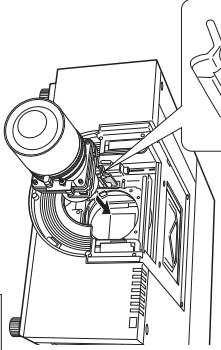


Fig. 7

LENS LOCK



Grasp (unlock) Lens Lock Lever and fully pull downward until it is locked (clicked).

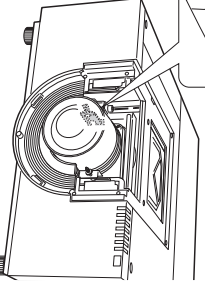


Fig. 8

9 Adjust focus of the Projection Lens. (AH-2012, AH-32021 and AH-32701 only.)

Set up the projector and project image on a screen. Loosen the Focus Lens Lock Screw and rotate the Projection Lens to obtain proper focus. After adjusting focus, be sure to lock the Projection Lens with the Focus Lens Lock Screw securely. (See Fig. 1)

Adjust focus of the Projection Lens Part No. AH-32021 and AH-32701 following the Focus Adjustment on page 6.

10 To ensure that the lens is securely fixed to the projector when mounting, be sure to attach the provided Safety Clamp. There are two different types of Safety Clamps depending on the lens of the projector. Check the Part No. of the lens before attaching the Safety Clamp and use a Safety Clamp that matches to the lens.

- 1 Remove the screw holding the lens. (See Fig-9-1/10-1)
- 2 Insert the removed screw to the Safety Clamp.
- 3 Place the Safety Clamp in the location of the removed screw. Make sure that the Safety Clamp is mounted to hold the Lens Lock Lever in the lock position. Check the placement of the Safety Clamp. (See Fig. 9-2/10-2)

Safety Clamp Type No. (PART No.)	Lens Part No.
Type SC-A (610 332 3759)	AH-21102, AH-22051, AH-21091, AH-32581, AH-21012, AH-32401, AH-32501, AH-32601, AH-32701
Type SC-B (610 322 3742)	AH-21201, AH-21041, AH-21021,

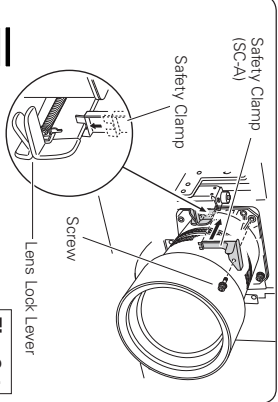


Fig. 9-1

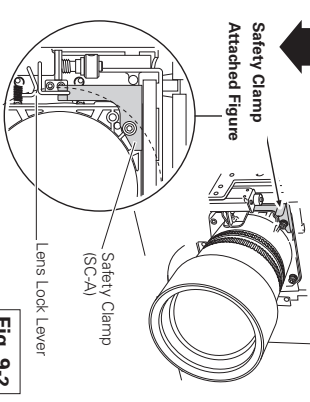


Fig. 9-2

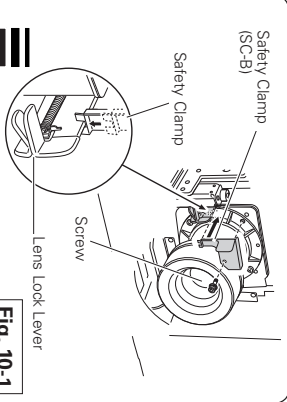


Fig. 10-1

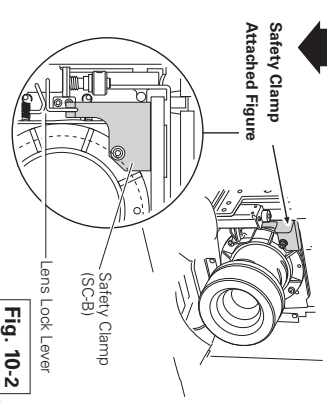
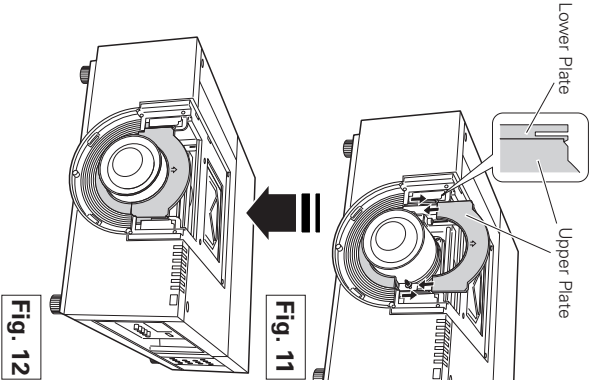


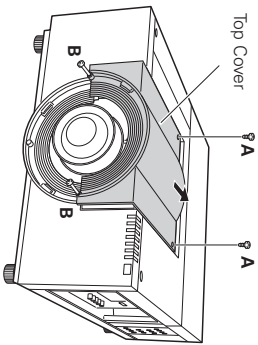
Fig. 10-2

11 Install the Upper Light-Block Plate into the guide of Lower Light-Block Plate. (See Fig. 11)

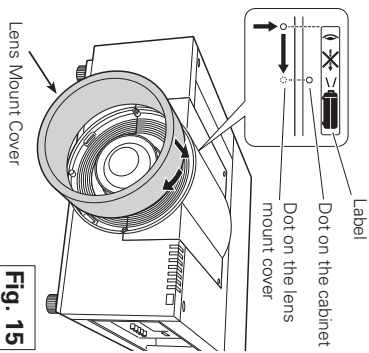
- Note:**
- When installing the Upper Light-Block Plate, the Lower Light-Block Plate should be lifted upward with your hand.
 - Make sure the mark (UP/DOWN and FRONT/BACK) on Light-Block Plate(s) is correct and set them properly.



12 Replace and fix the Top Cover with 2 Screws A and 2 screws B. (See Fig. 14)



13 Fit the raised dot of the Lens Mount Cover to the leftmost edge of the Seal on the projector, and then turn the Lens Mount Cover clockwise and adjust the position of the raised dot to the one of the projector. (See Fig. 15)

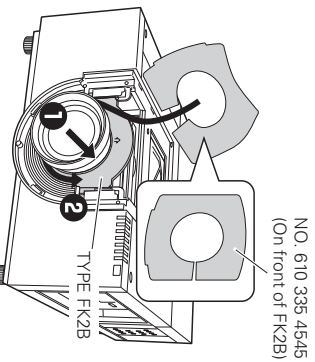


When using No. AH-32021

-When installing No. AH-32021, use two (2) Light-Block Plates. Make sure the figure is correct and put in proper position. (See Fig. 13)

- 1 Before mounting the Light-Block Plate (No. 610 335 4545), turn the projector on and move the projected image to the most upper left with the lens shift function. Then turn the projector off.
- 2 Insert the Light-Block Plate (No. 610 335 4545) in the direction shown in the figure to the right. The Light-Block Plate should encircle the lens. Rotate the Light Block Plate counter clockwise until the convex side is in a downward position.

Note: The side with "THIS SIDE BACK" must face backward.



14 Turn the projector on and operate Lens shift, Zoom and Focus fully to check the Light-Block Plates. If Light-Block Plate(s) interferes with those operations, check the Light-Block Plate(s) is set properly.

CAUTION : Do not operate the projector with Light-Block Plate(s) removed. Doing so may result in malfunction of the projector.

FOCUS ADJUSTMENT

No. AH-21012, AH-32021 and AH-32701

Set up the projector and project image on the screen.

1. Loosen the Focus Lock Screw on the lens.
2. Rotate the lens to obtain proper focus on center area of the screen.

When the distance between the screen and lens is 1 meter, set ● mark (yellow) of the lens on Focus Lock Screw position. (This is only for No. AH-32021)

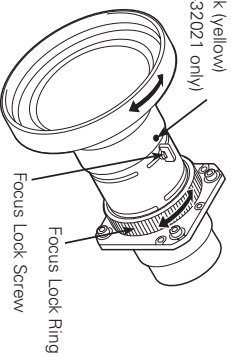
3. Lock the Focus Lock Screw securely.

When proper focus is not observed at outer area of the screen, proceed the following adjustments.

4. Loosen the Focus Lock Ring on the lens. (Turn the Lock Ring counter-clockwise.)
5. Rotate the lens to obtain proper focus on outer area of the screen.
6. Lock the Focus Lock Ring securely. (Turn the Lock Ring clockwise.)

If proper focus is not observed over the entire screen, repeat above adjustments 1 ~ 6.

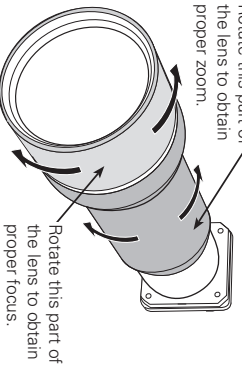
- mark (yellow) (AH-32021 only)



No. AH-32581

Adjust zoom first and then adjust focus.

Rotate this part of the lens to obtain proper zoom.



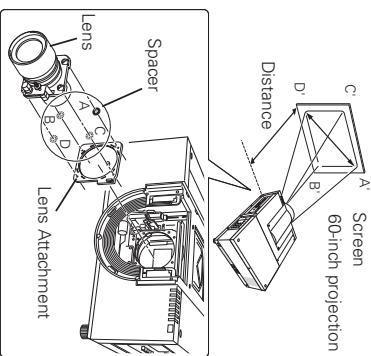
FOCUS CORRECTION

When the lens is attached to the projector and images are being projected onto the screen, the peripheral focus may be out of focus in some localized areas. If this happens, insert the one, of three sizes of spacers, in between the Lens Attachment and the lens to adjust the focus.

Inserting the Spacer corrects the distance on the Lens Attachment and improves the diagonal focus. The corrected distance is determined by the thickness of the used spacers. As a guide, the distance is adjusted by approximately 30 mm for each 0.1-mm thickness of the spacers.

There are three types of spacers provided, and there are four of each spacer type. Use these spacers to correct the distance as required.

	Spacer "1" Color, Clear Thickness 0.1 mm	Correction distance 30 mm/for 60-inch projection
	Spacer "2" Color, Black Thickness 0.2 mm	Correction distance 60 mm/for 60-inch projection
	Spacer "3" Color, Green Thickness 0.3 mm	Correction distance 90 mm/for 60-inch projection



BE SURE TO CHECK FOR SAFETY

After installing or replacing the lens, be sure to check the following for safety.

1. Check the lens is securely fixed with the screws.
2. Check no wiring is damaged or tangled on the gear of the lens motor or the other mechanical parts.
3. Check no part is missing, and no mounting part is loose.

Some parts are not used for installation or replacement. Keep these parts for later use.

Note: Figures in this manual may differ from the actual product.

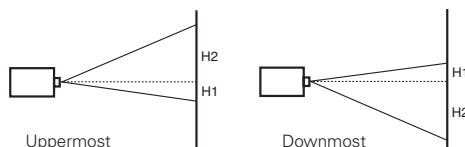
SPECIFICATIONS (Throw distance and screen size, lens shift ratio) for LC-X7

NOTE: Following table shows approximate measurement. Actual measurement depends on lens and projectors.

Part No.	Zoom	SCREEN SIZE (INCH) AND THROW DISTANCE (m)														LENS SHIFT/CENTER RATIO			
		40	60	80	100	120	150	180	200	250	300	350	400	500	600	U/D (MAX)		SIDE(MAX)	
		H1	H2	W1	W2	H1	H2	W1	W2	H1	H2	W1	W2	H1	H2	W1	W2	H1	H2
AH-21012 (LNS-W01Z)	NONE	0.9	1.4	1.9	2.4	2.9	3.6	4.4	4.9	6.1	7.4	8.6	9.9	12.3	14.8	1	8	2	3
AH-21202 (LNS-W02Z)	TELE	1.4	2.2	2.9	3.7	4.4	5.6	6.7	7.5	9.3	11.2	13.1	15.0	18.8	22.5	1	8	2	3
	WIDE	1.1	1.7	2.2	2.8	3.4	4.3	5.1	5.7	7.2	8.6	10.1	11.5	14.4	17.3				
AH-32021 (LNS-W03)	NONE	0.6	0.9	1.3	1.6	1.9	2.4	2.9	3.3	4.1	4.9	5.8	6.6	8.3	9.9	1	1	1	1
AH-32401 (LNS-W04)	TELE	1.6	2.4	3.2	4.1	4.9	6.2	7.4	8.3	10.4	12.5	14.5	16.7	20.9	N/A	1	8	1	1
	WIDE	1.2	1.8	2.4	3.1	3.7	4.7	5.7	6.3	7.9	9.5	11.1	12.7	15.9	N/A				
AH-32501 (LNS-W05)	TELE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	WIDE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A				
AH-32601 (LNS-W06)	TELE	1.2	1.8	2.4	3.1	3.7	4.7	5.6	6.2	7.8	9.4	11.0	12.6	15.8	N/A	1	8	1	1
	WIDE	0.9	1.4	1.9	2.4	2.9	3.6	4.4	4.8	6.0	7.3	8.5	9.7	12.1	14.6				
AH-32701 (LNS-W07)	NONE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AH-21102 (LNS-S02Z)	TELE	2.0	3.1	4.2	5.3	6.4	8.0	9.6	10.7	13.5	16.2	18.9	21.7	27.1	32.6	0	10	2	3
	WIDE	1.5	2.3	3.2	4.0	4.8	6.1	7.4	8.2	10.3	12.4	14.5	16.6	20.8	25.0				
AH-22051 (LNS-S03)	TELE	N/A	N/A	N/A	7.1	8.6	10.7	12.9	14.4	18.0	21.6	25.3	28.9	36.2	43.4	1	8	2	3
	WIDE	N/A	N/A	N/A	5.2	6.3	8.0	9.5	10.6	13.3	16.0	18.7	21.4	26.8	32.2				
AH-21055 (LNS-M01Z)	TELE	3.7	5.5	7.3	9.1	10.9	13.4	16.3	18.1	22.6	27.1	31.5	36.0	45.0	54.0	1	8	2	3
	WIDE	2.9	4.3	5.6	7.0	8.4	10.5	12.6	14.0	17.5	20.9	24.4	27.9	34.8	41.8				
AH-21091 (LNS-T02)	TELE	5.1	7.6	10.1	12.5	15.0	18.7	22.4	24.9	31.0	37.2	43.4	49.5	61.9	74.2	1	8	2	3
	WIDE	3.7	5.5	7.3	9.0	10.8	13.4	16.1	17.8	22.2	26.6	31.0	35.4	44.2	53.0				
AH-32581 (LNS-T03)	TELE	7.6	11.1	14.8	18.4	22.0	27.5	32.9	36.5	45.5	54.6	63.6	72.6	90.7	108.8	1	8	2	3
	WIDE	5.3	7.7	10.2	12.6	15.1	18.8	22.5	24.9	31.1	37.2	43.4	49.5	61.8	74.1				

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LENS SHIFT (UP/DOWN)



LENS SHIFT (SIDE TO SIDE)



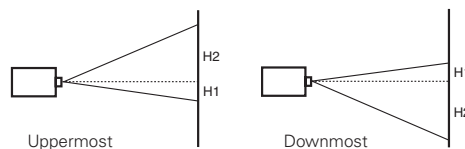
SPECIFICATIONS (Throw distance and screen size, lens shift ratio) for LC-W5

NOTE: Following table shows approximate measurement. Actual measurement depends on lens and projectors.

Part No.	Zoom	SCREEN SIZE (INCH) AND THROW DISTANCE (m)														LENS SHIFT/CENTER RATIO			
		30	60	80	100	120	150	180	200	250	300	350	400	500	600	U/D (MAX)		SIDE(MAX)	
		H1	H2	W1	W2	H1	H2	W1	W2	H1	H2	W1	W2	H1	H2	W1	W2	H1	H2
AH-21012 (LNS-W01Z)	NONE	1.0	2.1	2.9	3.6	4.4	5.5	6.6	7.3	9.2	11.0	12.8	14.7	N/A	N/A	-2	7	3	5
AH-21202 (LNS-W02Z)	TELE	1.6	3.3	4.4	5.5	6.6	8.3	10.0	11.1	13.9	16.7	19.5	22.4	N/A	N/A	-2	7	3	5
	WIDE	1.2	2.5	3.4	4.2	5.1	6.4	7.7	8.5	10.7	12.8	15.0	17.2	N/A	N/A				
AH-32021 (LNS-W03)	NONE	N/A	N/A	1.9	2.4	2.9	3.7	4.4	4.9	6.1	7.4	8.6	9.8	N/A	N/A	1	1	1	1
AH-32401 (LNS-W04)	TELE	1.8	3.6	4.9	6.1	7.4	9.2	11.1	12.4	15.5	18.6	21.7	24.9	N/A	N/A	-2	7	3	5
	WIDE	1.3	2.7	3.7	4.6	5.6	7.0	8.5	9.4	11.8	14.2	16.6	19.0	N/A	N/A				
AH-32501 (LNS-W05)	TELE	1.1	2.4	3.2	4.0	4.8	6.0	7.3	8.1	10.1	12.1	14.2	16.2	N/A	N/A	0	10	3	5
	WIDE	0.8	1.7	2.2	2.8	3.4	4.3	5.2	5.7	7.2	8.7	10.1	11.6	N/A	N/A				
AH-32601 (LNS-W06)	TELE	1.3	2.7	3.7	4.6	5.6	7.0	8.4	9.3	11.7	14.1	16.4	18.8	N/A	N/A	-2	7	3	5
	WIDE	1.0	2.1	2.8	3.6	4.3	5.4	6.5	7.2	9.0	10.8	12.6	14.4	N/A	N/A				
AH-32701 (LNS-W07)	NONE	0.5	1.0	1.3	1.7	2.0	2.5	3.0	3.4	4.2	5.1	6.0	6.8	N/A	N/A	1	1	1	1
AH-21102 (LNS-S02Z)	TELE	2.2	4.7	6.3	7.9	9.6	12.0	14.5	16.1	20.2	24.2	28.3	32.4	N/A	N/A	-2	7	3	5
	WIDE	1.7	3.6	4.8	6.1	7.3	9.2	11.1	12.3	15.5	18.6	21.7	24.9	N/A	N/A				
AH-22051 (LNS-S03)	TELE	3.1	6.3	8.5	10.6	12.8	16.0	19.3	21.4	26.8	32.2	37.6	43.0	N/A	N/A	-2	7	3	5
	WIDE	2.2	4.6	6.2	7.8	9.4	11.9	14.3	15.9	19.9	23.9	27.9	31.9	N/A	N/A				
AH-21055 (LNS-M01Z)	TELE	4.1	8.1	10.8	13.5	16.1	20.1	24.1	26.8	33.5	40.2	46.9	53.5	N/A	N/A	-2	7	3	5
	WIDE	3.2	6.3	8.4	10.4	12.5	15.6	18.7	20.7	25.9	31.1	36.2	41.4	N/A	N/A				
AH-21091 (LNS-T02)	TELE	5.7	11.2	14.9	18.5	22.2	27.7	33.2	36.9	46.0	55.2	64.4	73.6	N/A	N/A	-2	7	3	5
	WIDE	4.2	8.1	10.7	13.3	15.9	19.9	23.8	26.4	32.9	39.5	46.0	52.6	N/A	N/A				
AH-32581 (LNS-T03)	TELE	8.4	16.5	21.9	27.2	32.6	40.7	48.8	54.1	67.6	81.0	94.5	107.9	N/A	N/A	-2	7	3	5
	WIDE	5.8	11.3	15.0	18.7	22.3	27.8	33.3	37.0	46.1	55.3	64.4	73.6	N/A	1N/A				

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LENS SHIFT (UP/DOWN)



LENS SHIFT (SIDE TO SIDE)



1AAGP1R5572-- (K33B)