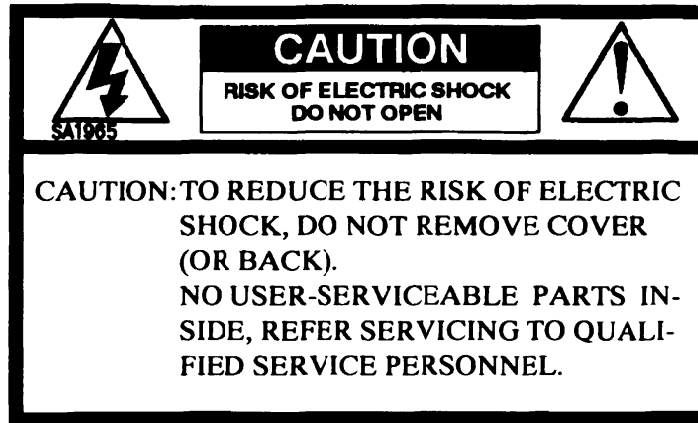




MODEL
PM 9050
B/W PICTURE MONITOR
OPERATION MANUAL

Ikegami



The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the equipment.

WARNING: FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS (REFER TO SERVICE LITERATURE).

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INFORMATION TO USER FOR FCC

Warning - This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications.

It has been tested with a class A computing device and found to comply with the limits for a Class A computing device in accordance with the specifications in subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR WATER.

Subject to change without notice.

1. General

The **PM9050** is a 9-inch monochrome monitor designed for monitoring and adjusting the video signals of broadcasting facilities and equipment. It features high picture quality, versatility and economy owing to high cost-to-performance ratio.

2. Features

- (1) High resolution monochrome CRT assures horizontal resolution of more than 800TV lines(at center).
- (2) 4:3/16:9 scan function is provided.
- (3) Switching power supply circuit is provided, applied to various kinds of power source voltage.
- (4) Back clamp porch circuit provides video black level stability.
- (5) A combination of the **PM9050** with a waveform monitor or a vector scope or two monitors can be accommodated in a 19-inch rack.
- (6) The UL SAFETY STANDARD is acquired.

3. IMPORTANT SAFETY INSTRUCTION

3-1 General

- ① Read all of these instructions.
- ② Save these instructions for later use.
- ③ Follow all warnings and instructions marked on the television equipment.
- ④ Never push objects of any kind into this television monitor through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television monitor.
- ⑤ Do not attempt to service this television monitor yourself as opening or removing covers may expose you to dangerous voltage or other hazards.
Refer all servicing to qualified service personnel.
- ⑥ Do not use attachments not recommended by the television equipment manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
- ⑦ This television monitor has been preadjusted to meet the respective broadcasting standard signals.
So, it cannot be used with the signals of different broadcasting standards.
- ⑧ When keeping or transporting the unit for a long time, pack it in the supplied carton or equivalent.
- ⑨ This monitor is heavy. When taking out of or putting it into a carton box, or setting, do not move or carry it by a person. You may drop it on your foot, or hurt your waist.



3-2 Power supply

- ① This television equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your television dealer or local power company.
- ② This television equipment is provided with a three-wire grounding type plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
- ③ When connecting and disconnecting the power cable, be sure to hold the plug.
- ④ Do not allow anything to rest on the power cord. Do not locate this television equipment where the cord will be abused by persons walking on it.
- ⑤ For added protection for this television equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the equipment due to lightning and power-line surges.
- ⑥ Do not overload wall outlets and extension cords as this can result in fire or electric shock.

3-3 Usage and Location

- ① Do not use this television equipment near water—for example, near a bathtub, wash-bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, or the like.
- ② Do not place this television equipment on an unstable cart, stand, or table. The television equipment may fall, causing serious injury to a

child or adult, and serious damage to the equipment. Use only with a cart or stand recommended by the manufacturer, or sold with the television equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

Television equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.



- ③ Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the monitor and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the television equipment on a bed, sofa, rug, or other similar surface. (This television equipment should never be placed near or over a radiator or heat register.) This television equipment monitor should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
- ④ Avoid operating or placing (keeping) in hot (+40 °C or over) and cold (less than 0 °C), excessively vibratory, or dusty place. And avoid operating or placing (keeping) in the places exposed to the direct sunlight. Otherwise the cabinet may deform or the phosphor of the CRT surface may deteriorate.
- ⑤ If an image of extremely high brightness is displayed on the screen for a long time, the CRT may be cause burning.

3-4 Cleaning

- ① Disconnect the power input plug of this monitor from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- ② Do not use thinner or benzine for cleaning. Otherwise, the cabinet may deform or the paint may peel away.

3-5 Repair

- ① Unplug this television monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the television receiver.
 - c. If the monitor has been exposed to rain or water.
 - d. If the monitor does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the monitor to normal operation.
 - e. If the monitor has been dropped or the cabinet has been damaged.
 - f. When the monitor exhibits a distinct change in performance-this indicates a need for service.
- ② When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or injury to persons.
- ③ Upon completion of any service or repairs to this monitor, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.
- ④ For repair service, contact **Ikegami**'s authorized sales representative or **Ikegami** service section directly.

4. Specifications

4-1 Ratings

Input signal system:	Scanning lines:	525 or 625
	Pictures/sec. :	30 or 25
	Intelace ratio:	2 : 1
	Scanning frequency:	Horizontal: 15.75 or 15.629kHz Vertical: 59.94 or 50Hz
Input signal type:	Video input:	2 channels, BNC type connector
	Sync input:	1 channel, BNC type connector
Input level:	Video input:	VS;1.0Vp-p or V;0.7Vp-p(positive)
	Sync input:	0.3~8Vp-p(negative polarity)
Input impedance:	Video/Sync input:	75 Ω or high impedance bridge connection
Video output level:	25Vp-p	
CRT:	USA/Europe:	E8069B4
Color temperature:	USA/Europe:	Approx. 6500°K
Brightness:	60 ft-L or more	
Power input voltage:	AC100~240V	
Power consumption:	Approx. 30W or less/0.5A or less	
Picture size:	4:3 mode	
	NOR: 160(W) × 120(H) mm	
	WIDE: 4:3 size(touch the height of picture to escucheon)	
	16:9 mode	
	NOR: 160(W) × 90(H) mm	
Front operation	Power ON/OFF switch	Video input A/B switch
	Sync input INT/EXT switch	Size NOR/ WIDE switch
	PCR ON/OFF switch	Aspect ratio 4:3/16:9 switch
	Contrast Volume	Brightness Volume
Remote operation	Operation : Video input A/B	Sync input INT/EXT
	4:3/16:9	Red tally ON/OFF
	Connection and control :	Refer to attached sheet
	Connectors:	D-sub 15 pins female(mini type)
Recomended safety standard:	UL, FCC	
Applied safety standard:	DHHS	
Operation:	Continuous	
Setting/ Operation:	Indoor	

Ambient Temperature: 0~40 °C
 Ambient Humidity: 90% or less(non condensation)
 Outside dimensions: 220mm(W) × 215mm(H) × 255mm(D)
 Cabinet: Chloride vinyl iron plate
 Weight: Applox. 6kg

4-2 Performance

4-2-1 General

Horizontal resolution: 800 TV lines or more(at center)
 Power distortion: Stability operation in $\pm 10\%$ of power rating
 X ray emission: 0.1mR/H or less at place of 50mm away from the monitor in normal operation.
 And 0.5mR/H or less in malfunction state.

4-2-2 Video signal system

Frequency characteristics: 50Hz~10MHz; +1/ - 3dB or less
 10MHz or more; Down characteristics
 Video input: terminal to CRT drive output based on 100KHz.
 Maximum gain: Approx. 33dB or more
 Gain(contrast) control: Controlable 0~Max. gain

4-2-3 Deflection/ High voltage

Sync stability:
 Internal sync; VS level changed in $\pm 6\text{dB}$ against rated value, can be operate stability when keep the chroma level 150%.
 External sync; Stability operate in 0.3~8Vp-p range
 Deflection amplitude: Rated aspect ratio 4:3 picture size
 Deflection distortion: Less than 2% against the screen height in both deflection linearity and Luster distortion.
 Pulse cross display function: Horizontal; Approx. 1/4 shift
 Vertical; Approx. 1/2 shift
 Ham shaking: Less than 0.2 mm
 High voltage output voltage: Approx. 12KV \pm 1KV at cut off
 High voltage fluctuation rate: Less than $\pm 3\%$ or less against to fluctuation range of 0~200 μA based on 100 μA .

4-3 Standard Accessories

AC cable : 1 pcs.(3 pins type, 8feet)
 Remote connector: 1 set(connector, case)
 Operation Manual: 1 copy

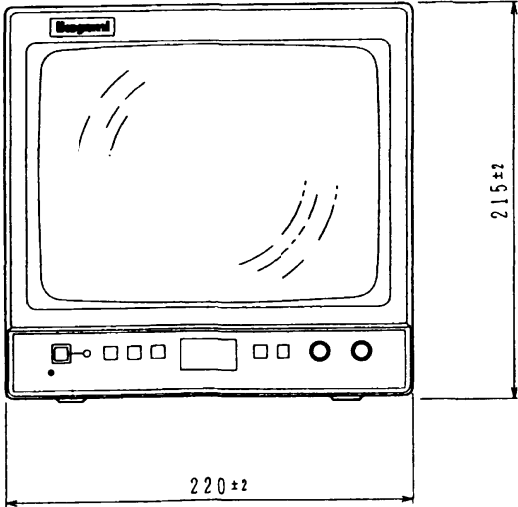
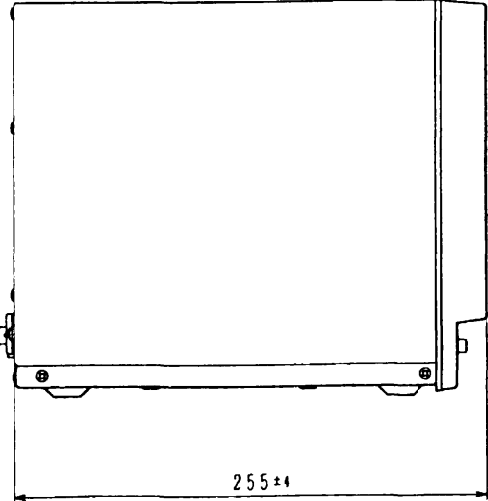
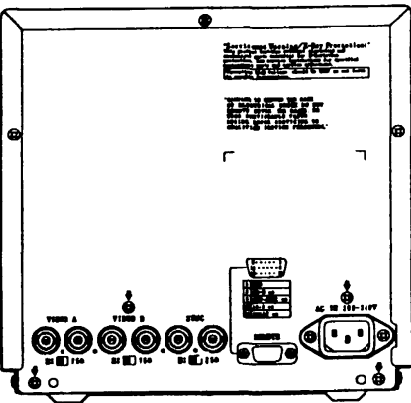
4-4 Selectable Accessories(separate account)

Single rack mount: For 1 set of monitor
 Dual rack mount: For 2 sets of monitor
 Dual rack mount: For assemble 1 set of monitor and 1 set of VSC or 1 set of WFM
 Service Manual: For maintenance/after service

4-5 Optional Feature

Digital(D1) input: Available

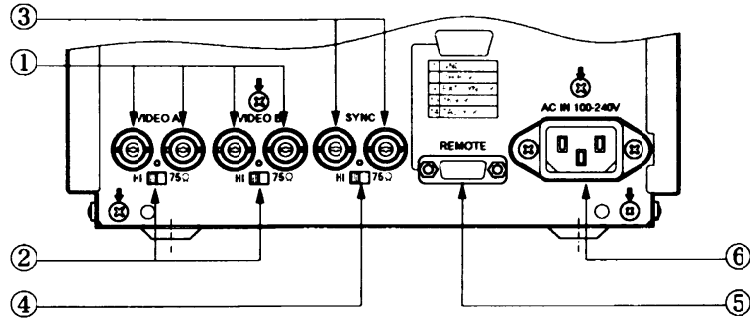
4-6 External appearance



5. Installation

Caution: This installation should be made by a qualified service person and should conform to all local codes.

5-1 Connection with External Equipment



① VIDEO INPUT A/B

② Termination Switch

Apply a video signal to the connectors ①. Video A and B are selective used and switchable with the front switch refer to 6. Routine Adjustment.

Bridge connection is permitted for each input. When bridge connection is not used, set the termination switches ② to the 75 Ω position.

③ SYNC INPUT

④ Termination Switch

Connect a sync signal to this connector ③ for external synchronization. Bridge connection is permitted for this input. When bridge connection is not used, set the termination switch ④ to 75 Ω position.

⑤ REMOTE

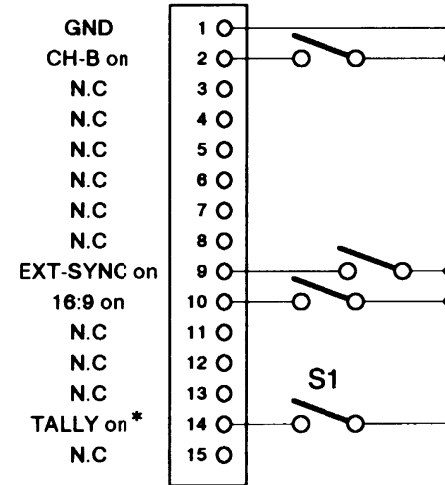
VIDEO A/B and SYNC INT/EXT select and Red tally are controlled externally with the supplied connector. For details, refer to 5-2 Connection of Remote Connector.

⑥ POWER INPUT

Connect the supplied AC power cable to this terminal to supply single-phase AC100~240V, 50/60Hz.

5-2 Connection of Remote Connector

The connection shown below permits external controls for VIDEO and SYNC select and the red tally.



* Tally control

Tally control is based on the contact supply method.

The tally function can be controlled via the switch(S1) between the pins 1 and 14 of connector.

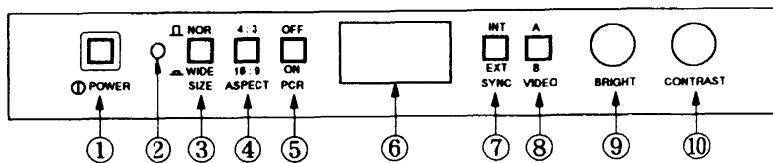
The switch turns ON when short-circuit, and the current at this time is about 10mA.

The voltage at pin 14 when open is about 18V.

6. Routine Adjustment

* The rated performance can be obtained with the following operating in the normal use. Otherwise, ask a qualified service-man or the **Ikegami's** dealer for repair.

6-1 Name and function of each part



① POWER switch

A switch to turn on and off the power.

② POWER ON LED

Lights up green when the unit is powered on.

③ SIZE switch

Selects the scanning amplitude. Set to the WIDE position(▬)to set a wide screen, and to the NOR position(▬)to set an under-scanscreen

④ ASPECT switch

Selects the aspect ratio. Set to the 16:9 position(▬)to set a 16:9 screen, and to the 4:3 position(▬)to set a 4:3 screen.

⑤ PCR switch

Set to the ON position (▬) to observe horizontal and vertical sync signals, and to the OFF position(▬) to return to an ordinary screen.

⑥ Red tally window

Lights up red at the tally mode in the case of remote connection. (Refer to "5-2 Connection of Remote Connector".)

⑦ SYNC switch

Set to the INT position(▬) when using the sync(internal) signal included in the video input(A or B), and to the EXT position(▬) when using the sync(external)signal included in the SYNC input.

For the remote operation, make the remote connection(see 5-2)and set this switch to the EXT position(▬).

For the external synchronization, be sure to supply a signal synchronized with a video signal.

⑧ VIDEO switch

Selects the video signal connected to the VIDEO input(A or B channel). For the remote operation, make the remote connection(see 5-2) and set this switch to the A position(▬).

⑨ BRIGHTNESS control

Adjusts the brightness of picture.

⑩ CONTRAST control

Adjusts the contrast of picture.

* Common setting of BRIGHTNESS and CONTRAST

Set the CONTRAST control to the MIN position. Turn the BRIGHTNESS control, set it at the position where the raster lights slightly, and set the CONTRAST control to the suitable position. With this setting, a picture can be monitored with a stable black level. Brightness of a picture varies with the blightness around the monitor. Set the brightness each time to the easy-to-see level.

7. Rack Mount

The optional rack mount adaptor permits mounting one or two sets of PM9050 or installing it with a waveform monitor or a vector scope on the standard rack(EIA RACK).

- **Elevated Operating Ambient Temperature:**

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature(T_{mra}).

- **Reduced Air Flow:**

Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

- **Mechanical Loading:**

Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading

- **Circuit Overloading:**

Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

- **Reliable Earthing:**

Reliable earthing of rack-mount equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit(e.g., use of power strips).

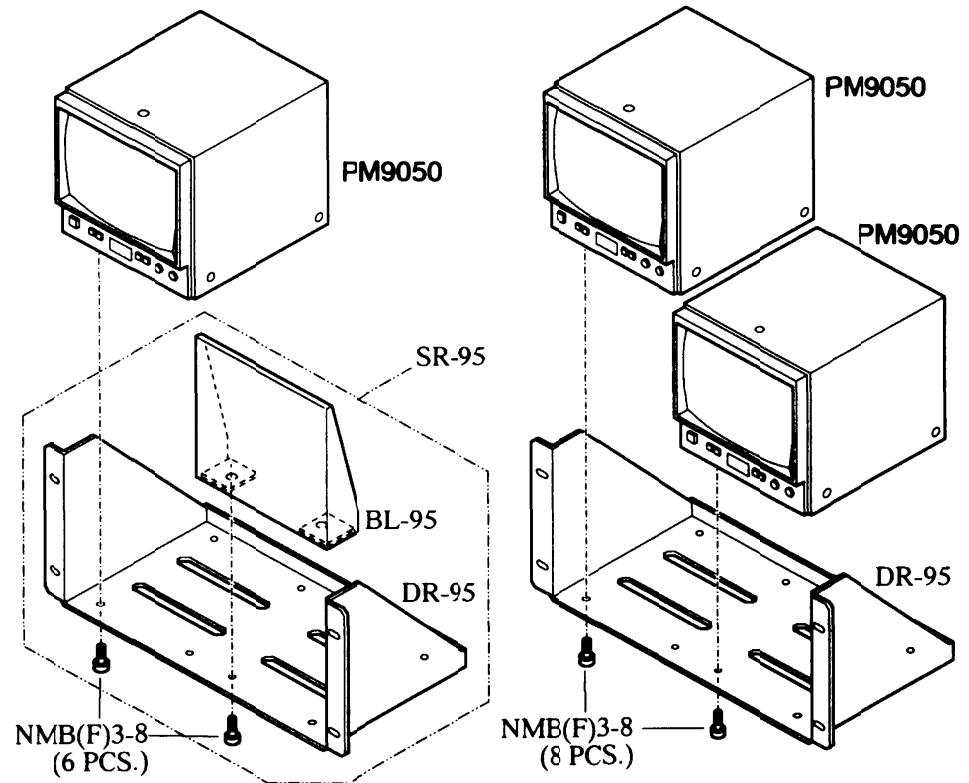
① Single mount

Use the rack mount adaptor SR-95 to mount one set of PM9050.

* The SR-95 consists of a DR-95 and a BL-95.

② Dual mount

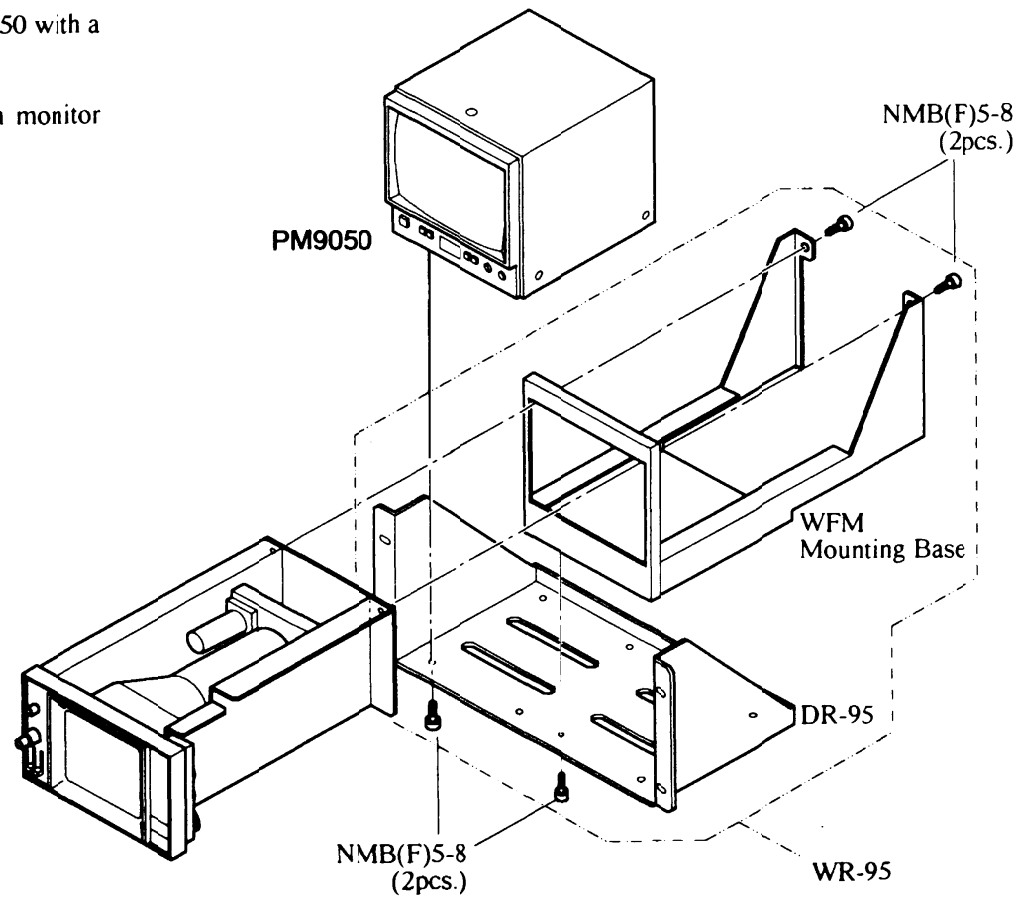
Use the rack mount adaptor DR-95 to mount two sets of PM9050.



③ **Combination of PM9050 with
a waveform monitor or a vector scope**

Use the rack mount adaptor WR-95 to mount PM9050 with a waveform monitor or a vector scope.

- The WR-95 consists of a DR-95 and a waveform monitor mounting base(M1-909419).



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Ikegami Tsushinki Co., Ltd.

5-6-16, Ikegami, Ohta-ku, Tokyo, Japan 146-8567
Phone: (03) 5700 - 1111, Fax: (03) 5700 - 1137

IKEGAMI ELECTRONICS (U.S.A.), INC.

- HEAD QUARTERS:** 37 Brook Avenue, Maywood, New Jersey 07607
Phone: (201) 368-9171 Fax: (201) 569-1626
- NORTHEAST OFFICE:** 29 Brook Avenue, Maywood, New Jersey 07607
Phone: (201) 368-9171 Fax: (201) 569-1626
- WEST COAST OFFICE:** 20603 Earl Street, Torrance, California 90503
Phone: (310) 370-2400 Fax: (310) 370-7131
- SOUTHWEST OFFICE:** Two Dallas Communications Complex, 6309 North
O'Connor Road Suite 117, Irving, TX 75039-3510
Phone: (972) 869-2363 Fax: (972) 556-1057
- MIDWEST OFFICE:** 747 Church Road, Unit C4 Elmhurst, IL 60126
Phone: (630) 834-9774 Fax: (630) 834-8689
- SOUTHEAST OFFICE:** 5200 N.W. 33RD Avenue, Suite III Fort Lauderdale, FL 33309
Phone: (954) 735-2203 Fax: (954) 735-2227

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