

Accuphase

MDS COMPACT DISC PLAYER

DP-470

- High-quality CD drive
- MDS+ D/A converter with four parallel circuits using ANCC
- Programmable playlists for playing tracks in a preferred order
- Direct Balanced Filter with completely separate line and balanced signals
- Display with sampling frequency and number of quantization bits
- Abundant transport outputs and digital inputs
- Digital connections to a voicing equalizer
- Balanced output phase selector



COMPACT
disc
DIGITAL AUDIO



A CD player that breaks new ground with our proprietary ANCC technology

Innovations derived from our wealth of experience have sparked a radical evolution in this CD player. Selected discs load silently, then the ultra-precise disc drive reads data and music is reproduced via an MDS+ D/A converter with four parallel circuits equipped with revolutionary low-noise, low-distortion ANCC technology. Programmable playlists allow for track playback in any order, and the DP-470 supports digital connections to a voicing equalizer. Savor performances of your most cherished albums with the DP-470.

The Technology of Precision

Features and Functions of the Transport Section

Accurate reading

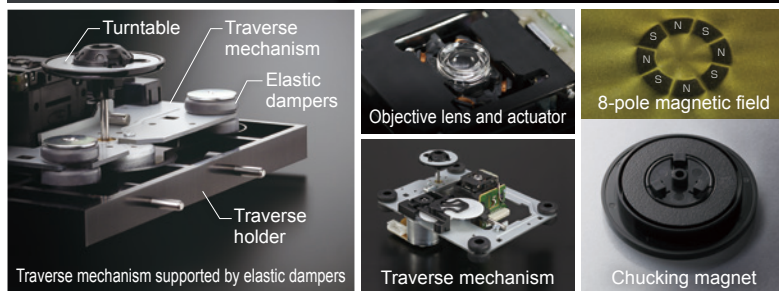
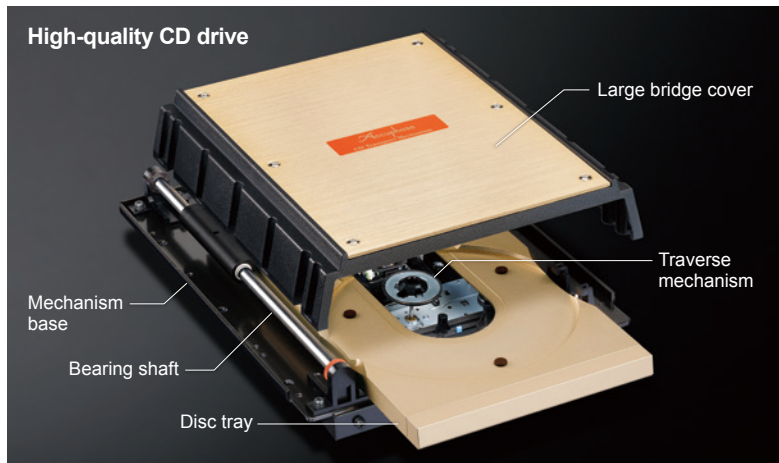
Vibration countermeasures in CD players that read audio data from rotating discs greatly impact the sound quality. By placing the high-rigidity drive mechanism as close to the base as possible, the DP-470 significantly reduces external vibrations from being transmitted to the traverse mechanism and protects the lens actuator that reads the discs. The high-quality elastic dampers that connect the traverse and disc loading mechanisms reduce the magnification of natural resonances in the lens actuator, improving reading precision. Additionally, the chucking magnet is an 8-pole neodymium bonded magnet for high magnetic flux density and dimensional accuracy. This chucking magnet secures the turntable and disc evenly and firmly to enable uniform disc rotation without wobbling.

Quiet operation

Creating a quiet listening environment is a vital component in enjoying music. Vibrations from spinning discs that are transmitted to the chassis resonate and amplify operational sounds. The elastic dampers that support the traverse mechanism inhibit vibrations from discs and greatly reduce chassis resonance. The three-layer large bridge cover surrounding the traverse mechanism also suppresses the diffusion of wind noise generated by high-speed disc rotation.

Smooth disc loading

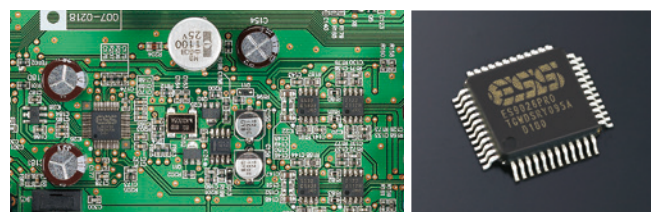
Carved from an aluminum block and then finished with a hard anodized aluminum and satin treatment, the elegant and elaborate disc tray uses high-quality steel bearing shafts to open and close smoothly and quietly.



Features and Functions of the Digital Processor Section

MDS+ D/A converter with four parallel circuits using ANCC

MDS+ is a D/A converter that employs delta-sigma type D/A converters connected in parallel for drastically improved performance. By driving the digital input through four high-performance ES9026PRO DAC chips (ESS Technologies) connected in parallel, the DP-470 theoretically improves overall performance for distortion, noise, linearity, etc. by a factor of two ($=\sqrt{4}$). Because the improvements provided by the MDS+ conversion principle are independent of signal frequency and level, output signal noise at very low levels can also be minimized, a feat that conventional delta-sigma converters find extremely difficult to achieve. The I-V conversion amplifier uses the low-noise and low-distortion ANCC (Accuphase Noise and distortion Canceling Circuit) technology, further enhancing the effect provided by MDS+.

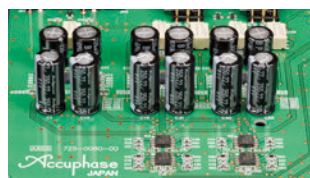


4MDS+ principle D/A converter

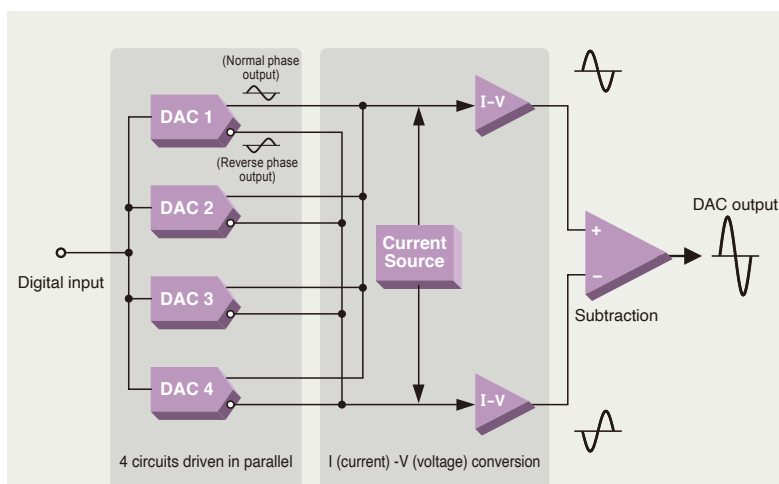
High-performance DAC: ES9026PRO

Direct balanced filter circuits

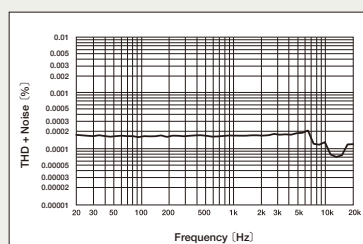
The DP-470 incorporates a Direct Balanced Filter circuit with independent line and balanced output circuits to output the ideal signal.



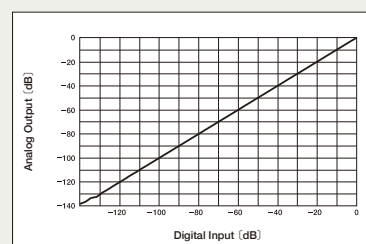
Direct balanced filter circuits



MDS+ D/A converter with four parallel circuits



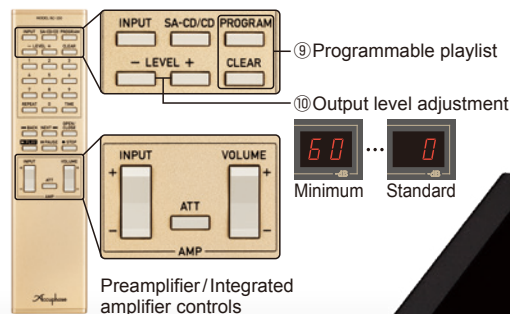
Total harmonic distortion (incl. noise) vs. frequency response



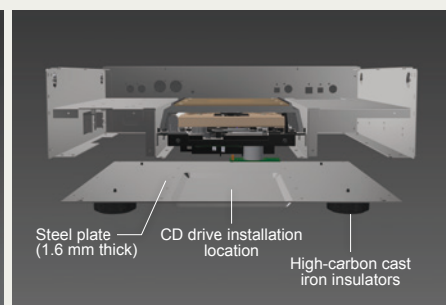
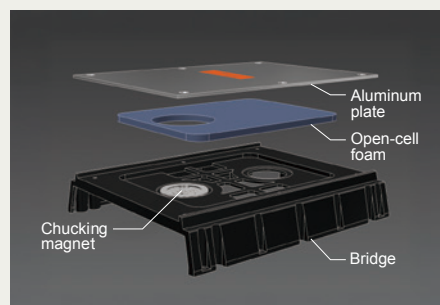
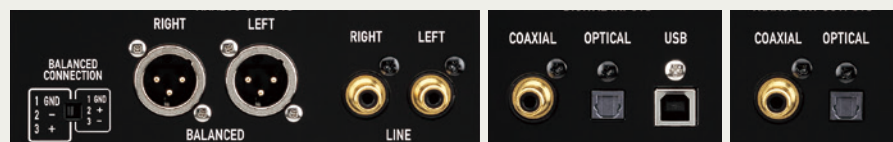
Linearity (digital input vs. analog output)

Advanced Features

- High-quality CD drive
- Digital connections to a voicing equalizer
- MDS+ D/A converter with four parallel circuits using ANCC
- Direct balanced filter with completely separate line and balanced signals
- Power transformer with independent analog and digital windings
- Two sets of analog outputs (BALANCED, LINE)①
- Phase selector that can invert the balanced output ...①
- Digital inputs so you can enjoy a variety of sound sources ...② (COAXIAL, OPTICAL, USB)
- Transport output terminals that work with the D/A converter ...③ (COAXIAL, OPTICAL)
- Three-layer large bridge with excellent sound insulation ...④
- Low center of gravity with the CD drive mounted on a recessed bottom plate⑤
- Discrete low-noise power supply circuits⑥
- High-carbon cast iron insulators⑦
- Display with sampling frequency and number of quantization bits⑧
- Programmable playlists so that you can enjoy your music in the order you want⑨
- Output level adjustment to adapt to differences in outputs from other players⑩
- Audio cable with plugs AL-10

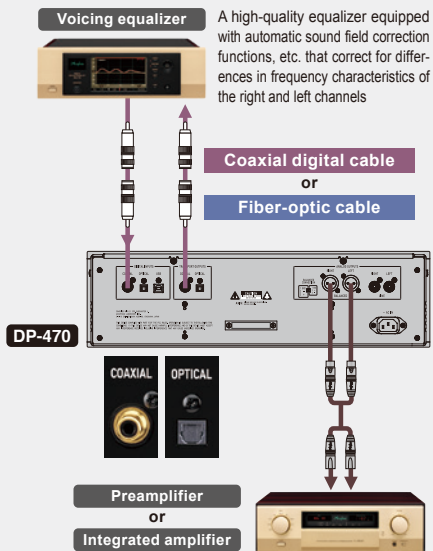


Remote Commander RC-150



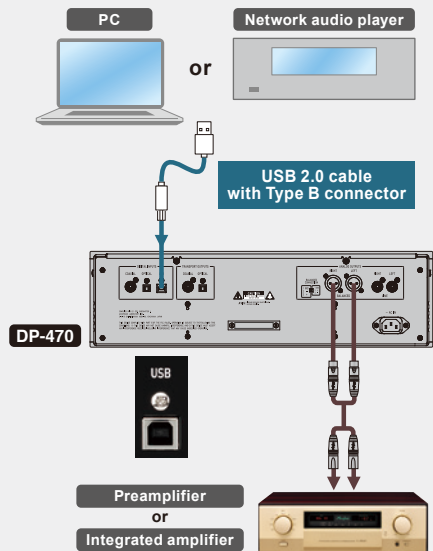
Connecting to a voicing equalizer

Connecting a voicing equalizer between the DP-470's transport outputs and digital inputs enables sound field compensation of CD performances in the digital domain.



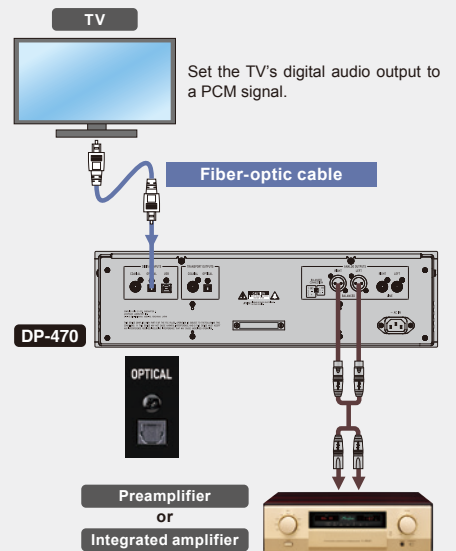
Connecting to computers, etc.

The DP-470 is equipped with a USB port (type B), allowing for high-grade playback of high-resolution data when connected to a PC or network audio player via a USB cable.

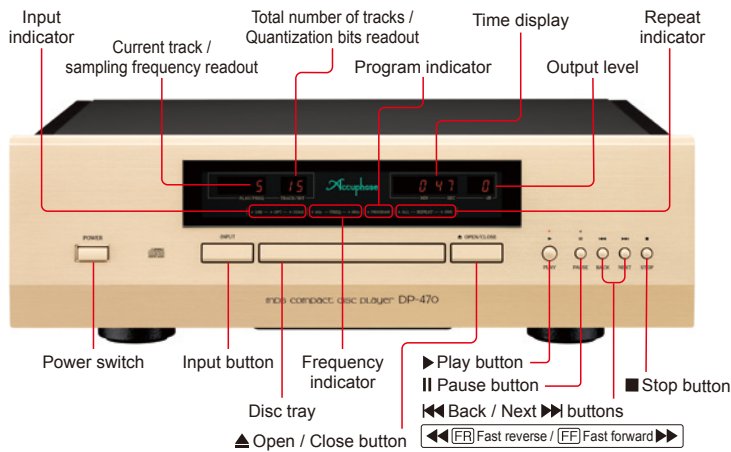


Connecting to a TV, etc.

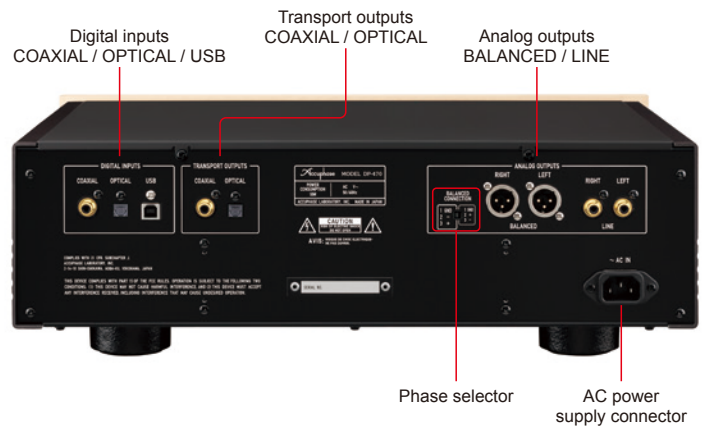
Connecting the DP-470 to a TV using a digital signal allows the DP-470's high-performance D/A converter to convert music and audio to analog signals so that you can enjoy playback through your stereo system.



Front Panel



Rear Panel



DP-470 Guaranteed Specifications

Compatible Disc Format	CD		
Data Read Principle	Non-contact optical pickup		
Laser Diode Wavelength	790 nm		
Transport Outputs	OPTICAL	JEITA CP-1212 compliant	JEITA standard optical fiber cable
	COAXIAL	IEC 60958 and AES-3 compliant	75-ohm coaxial digital cable
Digital Input	USB	USB 2.0 Hi-Speed (480 Mbps) compliant	USB 2.0 cable with Type B connector
	OPTICAL	JEITA CP-1212 compliant	JEITA standard optical fiber cable
	COAXIAL	IEC 60958 and AES-3 compliant	75-ohm coaxial digital cable
Sampling Frequencies	USB	DSD	2.8 / 5.6 / 11.2 / 22.5 MHz (11.2 MHz and below for DoP)
		PCM	44.1 / 48 / 88.2 / 96 / 176.4 / 192 / 352.8 / 384 kHz
	OPTICAL	PCM	32 / 44.1 / 48 / 88.2 / 96 kHz
	COAXIAL	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz

• Guaranteed specifications measured according to the JEITA CP-2402A standard.

D/A Converter		4MDS+ principle	
Frequency Response		0.7 Hz to 50,000 Hz	+0 dB, -3 dB
THD + Noise		0.0008 %	20 Hz to 20,000 Hz
S/N Ratio		120 dB	
Dynamic Range		117 dB	
Channel Separation		114 dB	20 Hz to 20,000 Hz
Output Voltage and Impedance	BALANCED	2.5 V 50 ohms	Balanced XLR type
	LINE	2.5 V 50 ohms	RCA phono jack
Output Level Control		0 dB to 60 dB	In 1 dB steps Digital
Power Requirements		120 V, 220 V, 230 V AC (voltage as indicated on rear panel)	
		50/60 Hz	
Power Consumption		18 W	
Maximum Dimensions		Width 465 mm (18.3") × Height 151 mm (6.0") × Depth 393 mm (15.5")	
Mass	Net	13.7 kg (30.2 lbs)	
	In shipping carton	20 kg (44.1 lbs)	

Supplied accessories

• AC power cord (2 m) • Audio cable with plugs AL-10 (1 m) • Remote Commander RC-150 • USB Driver 4 CD • USB Driver 4 Setup Guide

Remarks

- ★ This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- ★ The 230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.
- ★ The shape of the plug of the supplied AC power cord depends on the voltage rating and destination country.



• The specifications and appearance of this product are subject to change without notice.
<https://www.accuphase.com/>

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