

**MODEL DV-W524GSE-xxx**  
**DVD SUPER MULTI DRIVE**  

---

**HARDWARE SPECIFICATION**

**Rev. A**

27 sheets in Total

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## 1. SCOPE

This is hardware specification of the TEAC DV-W524GSE-xxx DVD SUPER MULTI DRIVE (referred to as drive).

## 2. OUTLINE

The outline of this DVD SUPER MULTI DRIVE is given in [Table 2-1](#).

**(Table 2-1) Outline of the specification**

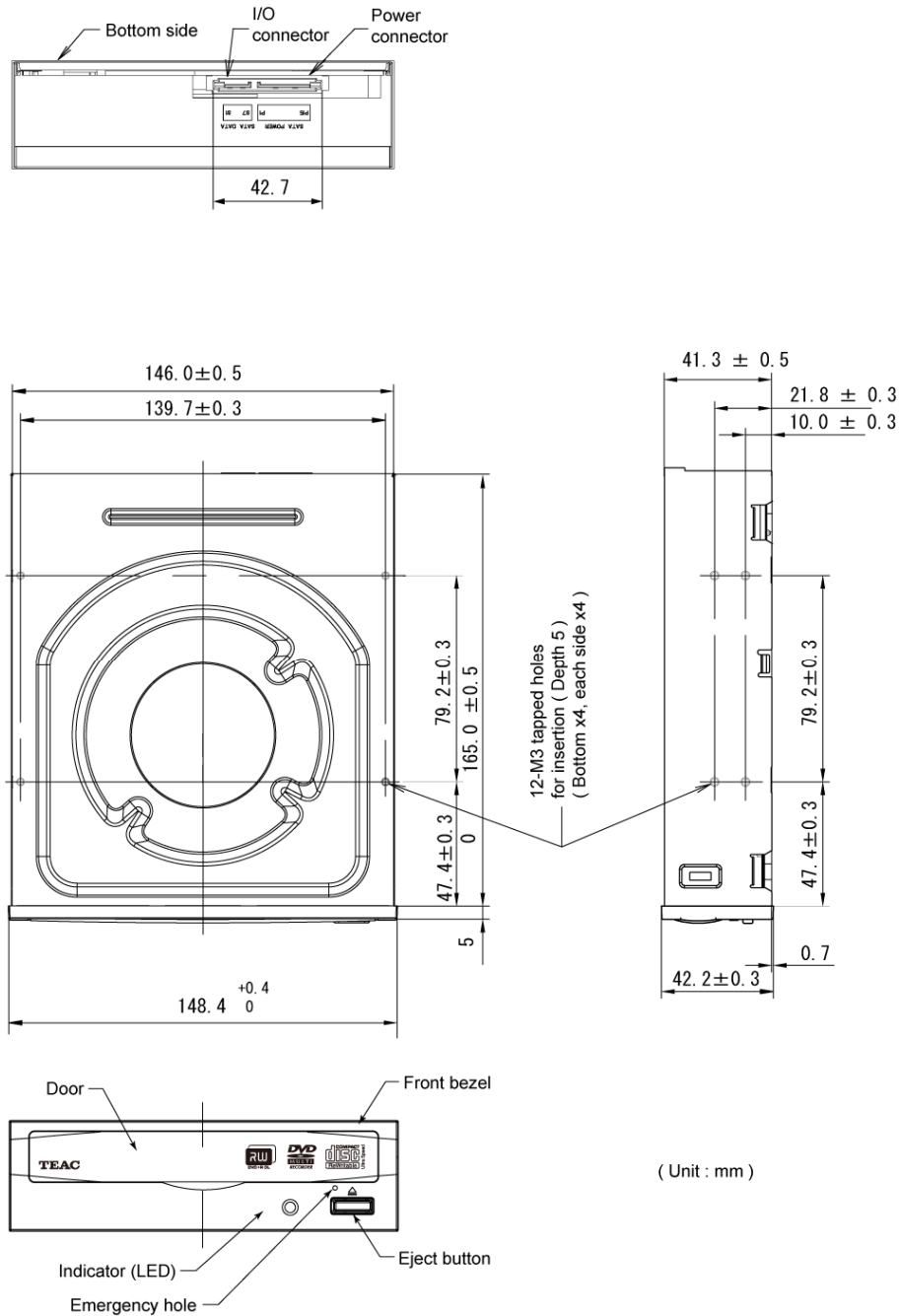
Model name	DV-W524GSE-xxx									
TEAC Part Number	1977293x-xx									
Applicable Safety standards	UL	CSA	TÜV	NEMKO	CB	FDA				
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Applicable EMC standards	FCC	CE	RCM	BSMI	KC					
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
Supported Data transfer rate at the maximum	PIO 4	DMA 2	UDMA 2	UDMA 3	UDMA 4	UDMA 5	S-ATA	S-ATA II		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Average Access time at random access	Stamped CD-ROM [ms]					Stamped DVD-ROM [ms]				
	140					160				
Disc speed	Stamped CD-ROM [rpm]					Stamped DVD-ROM [rpm]				
	Approx. 9660					Approx. 9360				
Signal interface	Serial ATA									
Power source	+5 [V] DC system					+12 [V] DC system				
	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>				
Power consumption	30.8 [W] Max.									
Disc loading method	Disc tray									
Start time	18 [sec] or less									
Applicable disc format	Refer to <a href="#">Table 4.1-1</a>									
Write Methods	Refer to <a href="#">Table 4.4-1</a>									
Buffer under run prevention function	Provided									
Readable disc	CD	DA	ROM	R	RW					
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
	DVD	ROM	+R	+R DL	+RW	-R	-R DL	-RW	RAM	
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Recordable disc	CD	R	RW							
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>							
	DVD	+R	+R DL	+RW	-R	-R DL	-RW	RAM		
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Front bezel and door	Refer to <a href="#">Table 3.2-1</a>									
Eject button										
Tray										
Front indicator color	Green (Refer to <a href="#">Table 8.1.2-1</a> )									
Audio lineout	Audio Line Output [Vrms]					Impedance [kΩ]				
	Not provided					NA				
Default strap setting	NA									
Laser class	Class 1 laser product									
RoHS directive	Complies with									

### 3. CONSTRUCTION

#### 3.1 External Construction

(Table 3.1-1) External Construction

Dimension [mm]			
L	W	H	Figure
170+/-0.5	146.0+/-0.5	41.3+/-0.5	Fig.3.1-1
Net Weight [kg]			
Typical 0.607			



(Fig. 3.1-1) External view of the drive

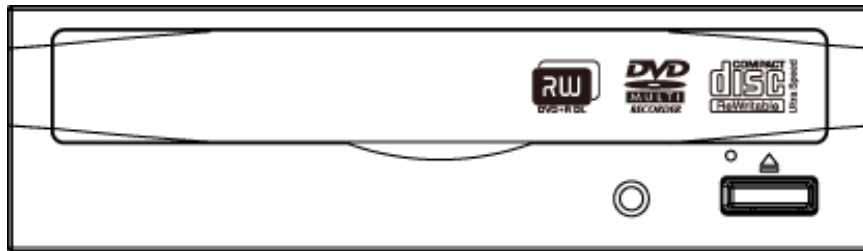
### 3.2 Front Bezel

- (1) The color of the front bezel, the door, the tray and eject button are shown in [Table 3.2-1](#).

**(Table 3.2-1) Color and Logo marks**

Version DV-W524GSE-xxx		Color				TEAC Logo
		Bezel	Door	Eject button	Tray	
-002	Provided	PS2	PS2	PS2	PS2	No
-091	Provided	Black	Black	Black	Black	Yes
-100	Provided	Black	Black	Black	Black	No

- (2) The logo mark indication is shown in [Fig.3.2-1](#) and [Fig.3.2-2](#).



**(Fig. 3.2-1) Front bezel without the logo marks indicated**



**(Fig. 3.2-2) Front bezel with the logo marks indicated**

### 3.3 Installation

The drive operation specification shall be satisfied with the installation method described below.

(1) Installation direction

The drive operation specification shall be satisfied using the following two drive positions.

- (a) Position where the disc is placed horizontally.

Note: The front indicator shall be in the left side. The tilt shall be 10° or less in all directions.

- (b) Position where a disc is vertical. The tilt shall be 10° or less in all directions.

(2) Mounting method

The mounting holes at the drive side and bottom shall be used for mounting (Refer to [Fig.3.1-1](#)).

- |                           |                    |
|---------------------------|--------------------|
| (a) Screw hole            | : Left side 4-M3   |
|                           | : Right side 4-M3  |
|                           | : Bottom side 4-M3 |
| (b) Tightening torque     | : 3 to 4 [kg-cm]   |
| (c) Screw insertion depth | : 5 [mm] or less   |

## 4. DISC SPECIFICATION

### 4.1 Applicable Disc Formats

The read and write of the following disc formats apply to the drive.

**(Table 4.1-1) Applicable disc formats**

	Disc format	Read capability	Write capability
CD	CD-DA	Supported	Supported
	CD-ROM Mode1	Supported	Supported
	CD-ROM XA Mode2 (Form1,Form2)	Supported	Supported
	CD-I	Supported	Supported
	Mixed mode CD-ROM	Supported	Supported
	PHOTO CD	Supported	Supported
	CD-Extra	Supported	Supported
	Video CD	Supported	Supported
	CD-Text	Supported	Supported
DVD	DVD-ROM	Supported	Supported
	DVD-Video	Supported	Supported
	DVD-Audio	Supported	Supported
	DVD-R	Supported	Supported
	DVD-R DL	Supported	Supported
	DVD-RW	Supported	Supported
	DVD+R	Supported	Supported
	DVD+R DL	Supported	Supported
	DVD+RW	Supported	Supported
DVD-RAM	Supported	Supported	



## 4.2 Rotational Speed

The rotational speed in each mode shall be in accordance with [Table 4.2-1](#) and [Table 4.2-2](#). As for the rotational speed at the write mode, the speed described in [Table 4.2-3](#) and [Table 4.2-4](#) shall be settable.

**(Table 4.2-1) Rotational speed (Read mode)**

	Media	Normal read speed	Method
CD	CD-ROM	19.2x - 48x	Full CAV
	CD-DAE	19.2x - 48x	Full CAV
	Video CD	19.2x - 48x	Full CAV
	Finalized CD-R Data	19.2x - 48x	Full CAV
	Finalized CD-RW	16x - 40x	Full CAV
DVD	DVD-ROM	6.4x - 16x	Full CAV
	DVD-ROM DL	4.8x - 12x	Full CAV
	DVD-R	6.4x - 16x	Full CAV
	DVD-R DL	4.8x - 12x	Full CAV
	DVD-RW	4.8x - 12x	Full CAV
	DVD+R	6.4x - 16x	Full CAV
	DVD+R DL	4.8x - 12x	Full CAV
	DVD+RW	4.8x - 12x	Full CAV
	DVD-RAM	2x - 5x	Full CAV

**(Table 4.2-2) Rotational speed (Playback mode)**

	Media	Normal playback speed	Method
CD	CD-DA	6.4x - 16x	Full CAV
	Video CD	6.4x - 16x	Full CAV
DVD	DVD-ROM	2.4x - 6x	Full CAV
	DVD-ROM DL	2.4x - 6x	Full CAV
	DVD-R	2.4x - 6x	Full CAV
	DVD-RW	2.4x - 6x	Full CAV
	DVD+R	2.4x - 6x	Full CAV
	DVD+RW	2.4x - 6x	Full CAV
	DVD-RAM	2x - 5x	Partial CAV

**(Table 4.2-3) Rotational speed for CD (Write mode)**

Media	Selection speed	Write speed	Method
CD-R	48x	20x - 48x	Full CAV
	40x	17x - 40x	Full CAV
	32x	17x - 32x	Partial CAV
	24x	17x - 24x	Partial CAV
	16x	16x	Full CLV
Multi speed CD-RW	4x	4x	Full CLV
High speed CD-RW	10x	10x	Full CLV
	4x	4x	Full CLV
Ultra speed CD-RW	24x	16x - 24x	Zone CLV
	16x	16x	Full CLV
Ultra speed plus CD-RW	24x	16x - 24x	Zone CLV
	16x	16x	Full CLV

**(Table 4.2-4) Rotational speed for DVD (Write mode)**

Media	Selection speed	Write speed	Method
DVD-R	24x	10x - 24x	Full CAV
	22x	9.2x - 22x	Full CAV
	20x	8.3x - 20x	Full CAV
	18x	7.5x - 18x	Full CAV
	16x	6.7x - 16x	Full CAV
	12x	6.7x - 12x	Full CAV
	8x	6.7x - 8x	Partial CAV
	6x	6x	Full CLV
	4x	4x	Full CLV
DVD-R DL	8x	4x - 8x	Zone CLV
	6x	4x - 6x	Zone CLV
	4x	4x	Full CLV
DVD-RW	6x	6x	Zone CLV
	4x	4x	Full CLV
	2x	2x	Full CLV
DVD+R	24x	10x - 24x	Full CAV
	22x	9.2x - 22x	Full CAV
	20x	8.3x - 20x	Full CAV
	18x	7.5x - 18x	Full CAV
	16x	6.7x - 16x	Full CAV
	12x	6.7x - 12x	Full CAV
	8x	6.7x - 8x	Partial CAV
	6x	6x	Full CLV
	4x	4x	Full CLV
DVD+R DL	8x	4x - 8x	Zone CLV
	6x	4x - 6x	Zone CLV
	4x	4x	Full CLV
	2.4x	2.4x	Full CLV
DVD+RW	8x	6x - 8x	Zone CLV
	6x	6x	Full CLV
	4x	4x	Full CLV
	2.4x	2.4x	Full CLV
DVD-RAM	5x	5x	Full CLV
	3x	3x	Full CLV
	2x	2x	Full CLV

### 4.3 Data Capacity

Data capacity shall be in accordance with [Table 4.3-1](#) for each disc format.

**(Table 4.3-1) Data capacity**

Disc formats		Applicable capacity
CD	CD-ROM Mode 1	650 [MB]
		700 [MB]
	CD-ROM XA Mode 2 Form 1	650 [MB]
		700 [MB]
	CD-ROM XA Mode 2 Form 2	738 [MB]
		795 [MB]
CD-DA	74 [min]	
	79 [min]	
DVD	DVD-ROM, DVD-Video, DVD+/-R, DVD+/-RW	4.7 [GB]/side
	DVD-ROM, DVD-Video DL	8.5 [GB]/side
	DVD-RAM	4.7 [GB]/side

### 4.4 Write Methods

**(Table 4.4-1) Write methods**

Media		Write methods
CD	CD-R	Disc-at-Once (DAO)
		Session-at-Once (SAO)
		Track-at-Once (TAO)
		Variable Packet
		Fixed Packet
	CD-RW	Disc-at-Once (DAO)
		Session-at-Once (SAO)
		Track-at-Once (TAO)
		Variable Packet
		Fixed Packet
DVD	DVD-R	Disc-At-Once (Un-interrupted)
		Incremental
	DVD-R DL	Disc-At-Once (Un-interrupted)
		Incremental
		Layer-Jump-Recording
	DVD-RW	Restricted overwrite
		Sequential recording: Disc-At-Once (un-interrupted)
	DVD+R	Incremental
DVD+R DL	Incremental	
DVD+RW	Random access recording	
DVD-RAM	Random access recording	

## 5. PERFORMANCE

### 5.1 Operating Performance

- (1) Access time  
The performance specified in [Table 5.1-1](#) applies to the access time of the drive.

**(Table 5.1-1) Access time**

Mode	Media	Aver. [msec]
Random access time	DVD	160
	CD	160
Random seek time	DVD	160
	CD	160
1/3 stroke access time	DVD	160
	CD	140
Full stroke access time	DVD	250
	CD	230

- (2) Rotational speed  
The performance specified in [Table 5.1-2](#) applies to the rotational speed of the drive.

**(Table 5.1-2) Rotational speed**

Item	Rotational speed [rpm]
Stamped CD-ROM	Approx. 9600
Stamped DVD-ROM	Approx. 9360

- (3) Data transfer rate (asynchronous)  
The performance specified in [Table 5.1-3](#) applies to the data transfer rate in each mode of the drive.

**(Table 5.1-3) Transfer rate**

Mode	Max. [MB/s]	Support
S-ATA	150	Supported
S-ATA II	300	Not Supported

- (4) Start/stop time  
The performance specified in [Table 5.1-4](#) applies to the start/stop time of the drive.

**(Table 5.1-4) Start/stop time**

Start/stop time	Media	Max. [sec]	Condition
Start time	DVD-ROM	18	Including Tray in, spin up and read TOC
	12 [cm]	18	
	8 [cm]	18	
	Photo CD	18	
Stop time	DVD-ROM	9	Including Spin down and tray out
	All media	9	

- (5) Data buffer capacity  
0.5 [MB] Max. in all operation modes.

## 5.2 Mechanism

- (1) Loading mechanism
- (a) TRAY loading method
- Automatic loading with the eject button
  - Automatic loading with the press of the tray
  - Automatic loading with the interface command
- (b) TRAY ejection method
- Automatic ejection with the eject button
  - Automatic ejection with the interface command
- Manual ejection with the emergency hole (used with the emergency power off).
- (2) Disc Loading/ejection Method
- (a) When inserting a disc, place it on the tray from the back side first and the front side is pressed to the tray lightly. Or place the front side of it on the tray first, then pull toward the front to set it.
- (b) When taking out the disc, pull it toward the top direction without applying excessive force.
- (c) An 8cm disc can be used by placing it on the specified center position described in "3.3 Installation" when the drive is in a horizontal position. Then the disc position should not be shifted when ejecting the tray. It cannot be used when the drive is in a vertical position.

## 6. ENVIRONMENTAL CONDITIONS

The environmental conditions specified in this item apply to the drive excluding the disc.

The environmental conditions for discs shall be in accordance with the applicable specification.

### 6.1 Ambient Temperature/relative Humidity

The conditions specified in [Table 6.1-1](#) apply to the drive.

**(Table 6.1-1) Ambient temperature/ relative humidity conditions**

Drive state	Item	Min.	Typ.	Max.	Unit	Condition
During operation	Ambient temperature	5	–	45	°C	Non-condensation, 10 [°C/hour] or less 10 [%RH/hour] or less during operation
	Relative humidity	20	–	80	%RH	
	Wet-bulb temperature	–	–	29	°C	
During non-operation	Ambient temperature	–20	–	60	°C	Non-condensation, 10 [°C/hour] or less 10 [%RH/hour] or less
	Relative humidity	10	–	85	%RH	
	Wet-bulb temperature	–	–	32	°C	
During Transportation (in package)	Ambient temperature	–40	–	65	°C	Non-condensation, 20 [°C/hour] or less 20 [%RH/hour] or less
	Relative humidity	5	–	90	%RH	
	Wet-bulb temperature	–	–	32	°C	

### 6.2 Vibration

The conditions specified in [Table 6.2-1](#) apply to the drive.

**(Table 6.2-1) Vibration condition**

Drive condition		Test conditions			Requirement
		Acceleration	Frequency	Directions	
During operation	CD/DVD ROM	4.9 [m/s <sup>2</sup> ] (0.5G)	10 to 500 [Hz]	X, Y and Z axes	Shall be free from any errors during operation.
	CD-DA				
	CD-R/RW	2.94 [m/s <sup>2</sup> ] (0.3G)			
	DVD+/-R/RW				
	DVD-RAM				
During non-operation		19.6 [m/s <sup>2</sup> ] (2G)			Shall be free from damage after test.
During transportation		19.6 [m/s <sup>2</sup> ] (2G)	10 to 500 [Hz]	X, Y and Z axes	Shall be free from damage after test.

## 6.3 Shocks

The conditions described in [Table 6.3-1](#) apply to the drive.

**(Table 6.3-1) Shock conditions**

Drive condition		Test conditions			Requirement
		Acceleration	Pulse wave	Number of pulses	
During operation	CD-ROM	78.4 [m/s <sup>2</sup> ] (8G)	11 [msec] (half-sine wave)	5 times in the directions of X, Y and Z axes.	Shall be free from any errors during operation.
	CD-DA	29.4 [m/s <sup>2</sup> ] (3G)			
	CD-R/RW	19.6 [m/s <sup>2</sup> ] (2G)			
	DVD+/-R/RW				
	DVD-RAM				
During non-operation		490 [m/s <sup>2</sup> ] (50G)	2 [msec] (half-sine wave)	1 time per each surface	Shall be free from damage after test.
During transportation		Height	60 [cm]		Shall be free from damage after test.
		Direction	1 corner, 3 edges, 6 surfaces		

## 6.4 Noise

The conditions described in [Table 6.4-1](#) apply to the drive.

**(Table 6.4-1) Noise conditions**

Specification	Condition		
	Measurement position	Test disc	Operation
52.5 [dBA] or less	unbalance at 50 [cm] distance	A-BEX SCD-3228, 2.5 [g-mm]	Sequential read by playing

## 6.5 Transportation Condition

The drive package shall conform to the Appropriate Package Test Level 2 specified in JIS-Z0200 when using the specified packing box.



## 7. RELIABILITY

### 7.1 General

(Table 7.1-1) Reliability conditions

Item	Specification	Condition	
MTBF	70000 [POH]	at normal temperature and humidity; duty 25 [%]	
MTTR	Typical 30 [minutes]		
Data read error rate	CD-ROM	Block/10 <sup>12</sup> [bits]	MODE1 and MODE2 Form1
		Block/10 <sup>9</sup> [bits]	MODE2 Form2 and CD-DA
	DVD-ROM	Block/10 <sup>15</sup> [bits]	
Seek mechanism life	1,000,000 [times]		
Loading/eject life	10,000 [times]		
Designed life	5 [years]		

### 7.2 Safety Standard

The drive complies with the following safety standards.

(Table 7.2-1) Safety standard

Safety standard	Standard No.	
UL	UL60950-1	Provided
CSA	CAN/CSA22.2	Provided
	No.60950-1	Provided
TÜV	EN60950-1	Provided
	EN60825-1	Provided
FDA (DHHS)	21CFR Subchapter J	Provided
Nemko	NA	Not Provided
CB-Scheme	IEC60950-1	Provided
	IEC60825-1	Provided

### 7.3 EMC

The drive complies with the following standards.

(Table 7.3-1) EMC

EMC standard	Region	Standard No.	
FCC	USA	Part 15 Class B	Provided
		CISPR22 Class B	Provided
BSMI	Taiwan	CNS 13438 Class B	Provided
RCM	Austria	AS/NZS CISPR 22 Class B	Provided
KC	Korea	KN61000	Provided
CE	European	EN55022 Class B	Provided
		EMS55024	Provided
		EN61000-3-2	Provided
		EN61000-3-3	Provided

## 8. INDICATOR AND STRAP FUNCTIONS

### 8.1 Indicator

#### 8.1.1 Location

The indicator is located below the left side of the disc insertion slot on the front bezel.

#### 8.1.2 Indicator function

The following indicator functions apply to each LED of the drive.

(Table 8.1.2-1) Functions of indicator

Operation mode	Indicator
During read/Data transfer	Green LED lights.
During write	Green LED lights.
During audio play	Green LED blinks.
During seek	Green LED blinks.
At start (Power ON of PC)	Green LED blinks after lighting once.
When the tray is opened	Green LED blinks after lighting once.
When the tray is closed	Green LED blinks after lighting once.
When Buffer Under Run occurs	Green LED does not change.

## 9. FRAME GROUNDING

The drive frame is electrically connected to 0 [V] dc.

## 10. POWER INTERFACE

### 10.1 Power Supply Used

The following specification applies to the power interface connector terminals of the drive. The voltage applied to the power terminal shall be defined in [Table 10.1-1](#) and the drive shall operate normally with the voltage.

(Table 10.1-1) Power voltage specification

Item	+5 [V] DC system	+12 [V] DC system
Operating voltage range	+/-5 [%] (4.75 ~ 5.25 [V])	+/-10 [%] (10.8 ~ 13.2 [V])
Allowable ripple	100 [mVp-p] or less	200 [mVp-p] or less

### 10.2 Current Consumption

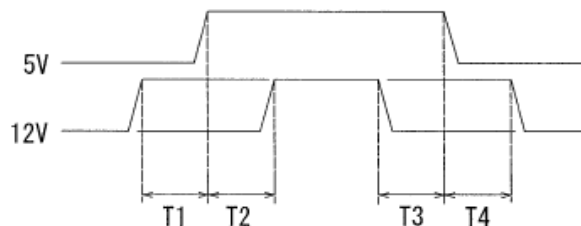
The following current consumption specifications apply to the drive.

(Table 10.2-1) Current consumption

Operation	+5 [V] DC system		+12 [V] DC system		Condition
	Form	Value [A]	Form	Value [A]	
During read	Average	0.85	Average	0.75	
During seek	Peak	1.10	Peak	0.70	Excluding pulses of 10 [ms] or less
During spin up	Peak	0.80	Peak	2.50	Excluding pulses of 10 [ms] or less
While idling	Peak	0.90	Peak	0.50	Excluding pulses of 10 [ms] or less
During sleep	Average	0.40	Average	0.10	
During loading/ejection	Peak	0.55	Peak	0.70	Excluding pulses of 10 [ms] or less
During write	Average	0.95	Average	2.10	

### 10.3 Power Supply Sequence

The drive shall operate normally with the power supply sequence specified in [Fig.10.3-1](#) and [Table 10.3-1](#).



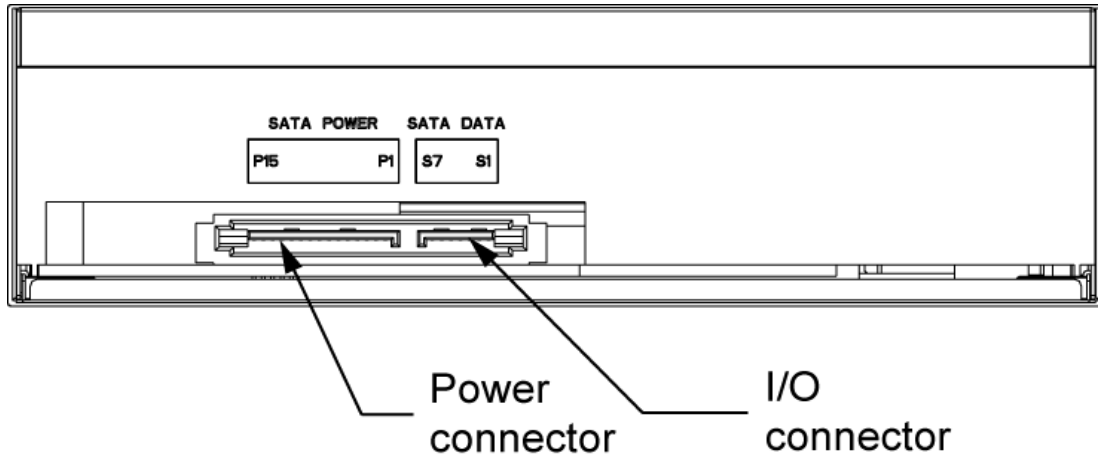
(Fig. 10.3-1) Power supply sequence

(Table 10.3-1) Power supply sequence specifications

Item	Specifications
T1, T2, T3, T4	50 [msec] Max.

## 10.4 Power Interface Connector

- (1) Power interface connector
  - (a) Number of [poles] : 15 [pins]
  - (b) Protection method for mis-insertion : by the shape of the connector housing
  - (c) Connector terminal diagram : Refer to Fig.10.4-1
  - (d) Connector location : Refer to Fig.10.4-1
  - (e) Pin assignment : Refer to Table 10.4-1



(Fig. 10.4-1) External view of the rear

(Table 10.4-1) Power interface connector pin assignment

Name	Type	Description
P1	V <sub>33</sub>	3.3 [V] Power
P2	V <sub>33</sub>	3.3 [V] Power
P3	V <sub>33</sub>	3.3 [V] Power
P4	Gnd	1 <sup>st</sup> mate
P5	Gnd	2 <sup>nd</sup> mate
P6	Gnd	2 <sup>nd</sup> mate
P7	V <sub>5</sub>	5 [V] Power, pre-charge, 2 <sup>nd</sup> mate
P8	V <sub>5</sub>	5 [V] Power
P9	V <sub>5</sub>	5 [V] Power
P10	Gnd	2 <sup>nd</sup> mate
P11	Reserved	1. The pin corresponding to P11 in the backplane receptacle connector is also reserved. 2. The corresponding pin to be mated with P11 in the power cable receptacle connector shall always be grounded.
P12	Gnd	1 <sup>st</sup> mate
P13	V <sub>12</sub>	12 [V] power, pre-charge, 2 <sup>nd</sup> mate
P14	V <sub>12</sub>	12 [V] power
P15	V <sub>12</sub>	12 [V] power

## 11. SERIAL ATA INTERFACE

### 11.1 Applicable Standard

ANSI : ATA-8 Compliant  
SFFC : SFF-8090 V7 Compliant

### 11.2 Electrical Characteristics

Refer to Serial ATA Revision 2.6.

### 11.3 Signal Interface Connector

- (1) Signal interface connector
- (a) Connector pin diagram : Refer to [Fig.10.4-1](#)
  - (b) Connector layout : Refer to [Fig.10.4-1](#)
  - (c) Connector pin-assignment table : Refer to [Table 11.3-1](#)

**(Table 11.3-1) Signal interface pin-assignment table**

Name	Type	Description
S1	Gnd	2 <sup>nd</sup> mate
S2	A+	Differential signal pair A from Phy
S3	A-	
S4	Gnd	2 <sup>nd</sup> mate
S5	B-	Differential signal pair B from Phy
S6	B+	
S7	Gnd	2 <sup>nd</sup> mate

## 12. REQUESTS RELATING TO THE FCC RULE PART (15) AND SAFETY LASER PRODUCTS

### 12.1 FCC Rule Part (15)

When selling this unit directly to an end user, print the following text in the instruction manual or enclose the separate sheet on which the following text is printed with the instruction manual.

Declaration of Conformity	
Model Number	: DV-W524GSE-xxx
Trade Name	: TEAC
Responsible party	: TEAC AMERICA, INC.
Address	: 1834 Gage Road, Montebello, California, U.S.A.
Telephone Number	: 1-213-726-0303
<p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p>	

TO THE USER
<p>This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential areas. This device generates and uses radio frequency energy and if not installed and used in accordance with the instructions, it may cause interference to radio or TV reception. If this unit does cause interference with TV or radio reception you can try to correct the interference by one more of the following measures:</p> <ol style="list-style-type: none"> <li>Reorient or relocate the receiving antenna.</li> <li>Increase the separation between the equipment and receiver.</li> <li>Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.</li> <li>Consult the dealer or an experienced radio/TV technician for help.</li> </ol> <p><b>CAUTION:</b> Changes or modifications to this equipment not expressly approved TEAC CORPORATION for compliance could void the user's authority to operate this equipment.</p>

## 12.2 Safety of Laser Products

When selling this unit or a system with this unit to an end user, print the following text in the instruction manual or enclose the separate sheet on which the following text is printed with the instruction manual.

This product has been designed and manufactured according to FDA regulations "title 21, CFR, chapter 1, subchapter J, based on the radiation Control for Health and Safety Act of 1968", and is classified as a class 1 laser product. There is no hazardous invisible laser radiation during operation because invisible laser radiation emitted inside of this product is completely confined in the protective housings. The label required in this regulation is shown below.

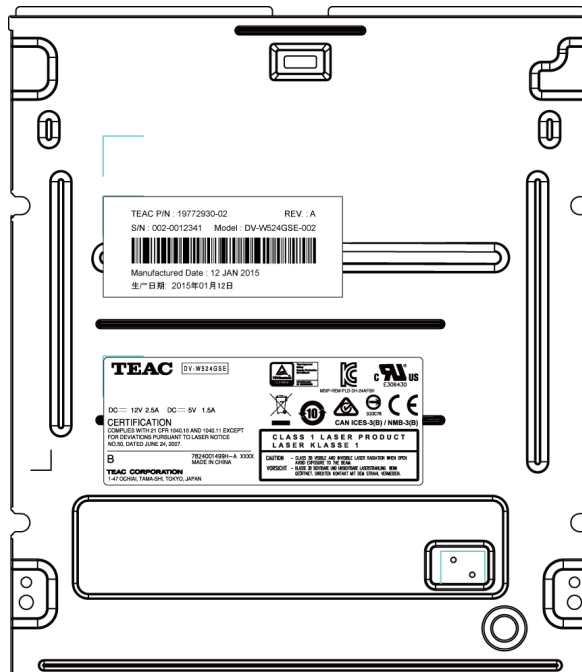
**CAUTION**

Use of controls or adjustments or performance of procedures other than those specified here in may result in hazardous radiation exposure.

Optical pickup	
Type	: LO-DHW02B
Manufacturer	: LITE-SPACE
Laser output	: DVD : 134 [mW] Max
	: CD : 132 [mW] Max
Wavelength	: DVD : 661 [nm]
	: CD : 785 [nm]

## 12.3 Attachment Location

Location of TEAC Nameplate on the Bottom cover is shown in Fig.12.3-1.



(Fig. 12.3-1) Nameplate Location on the Bottom Cover

## 13. ROHS COMPLIANCE

The drive complies with European directive "2011/65/EU".

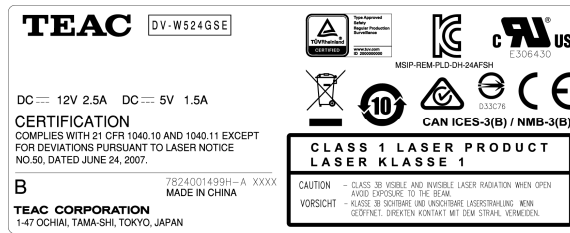
EU Importer name and address

TEAC EUROPE GmbH

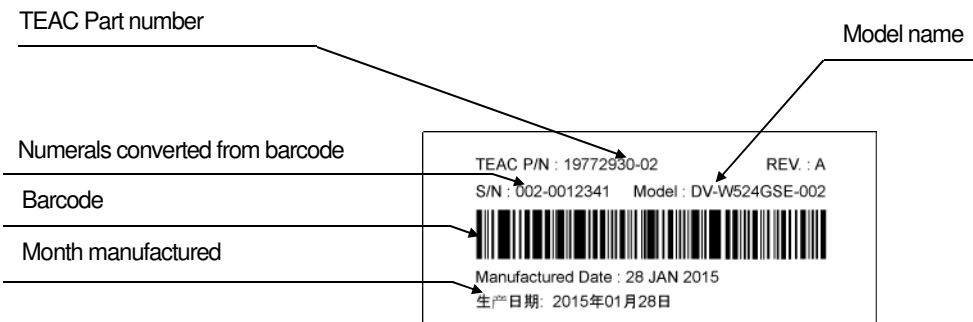
Bahnstrasse12, 65205 Wiesbaden - Erbenheim, Germany



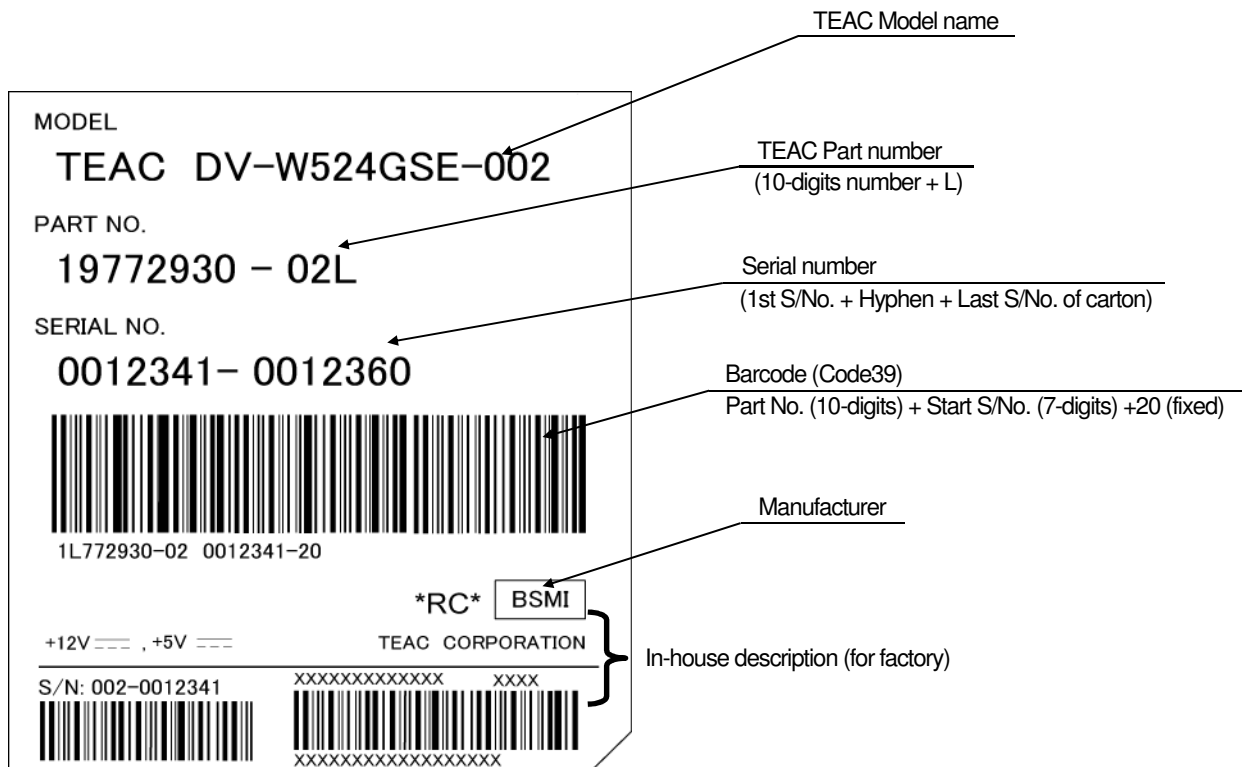
14. LABEL USED



(Fig. 14-1) Nameplate



(Fig. 14-2) Serial label

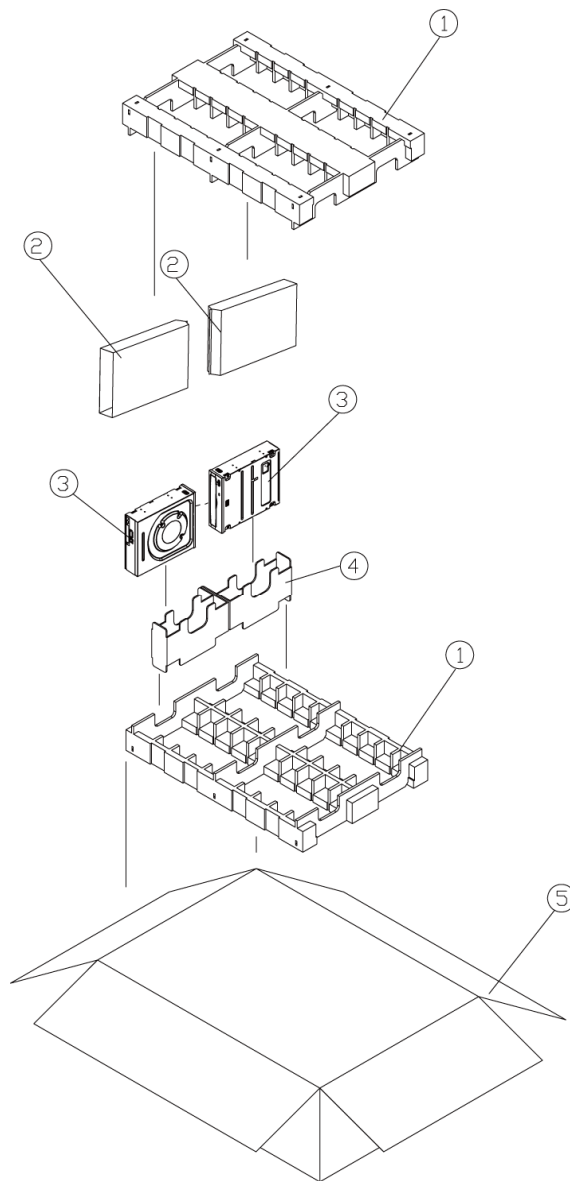


(Fig. 14-3) Carton label

## 15. PACKAGING

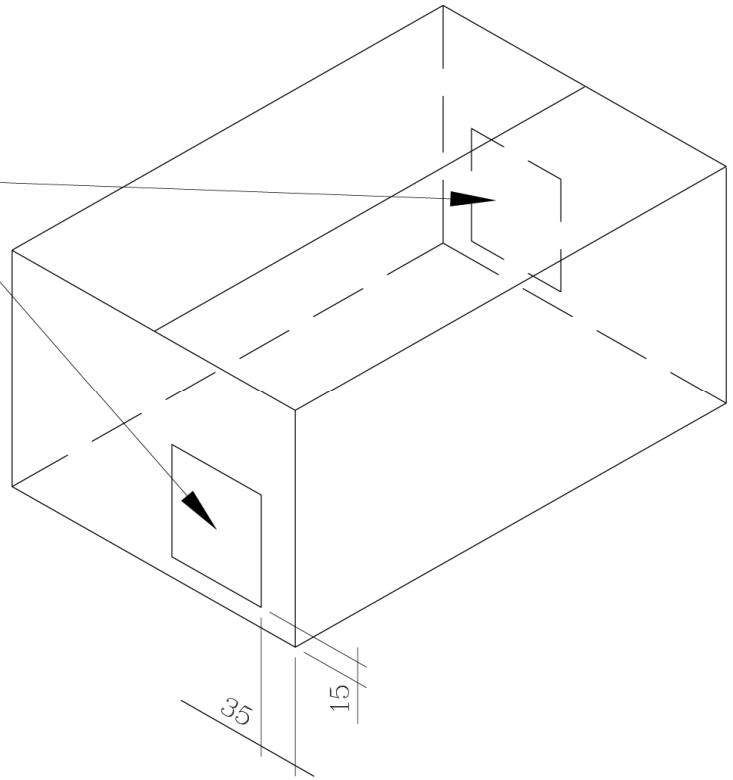
(Table 15-1) Aggregate package

Item	Specification		
	L [mm]	W [mm]	H [mm]
Outline dimensions of carton	560	400	213
Packed quantity in one package	20 [sets]		
Gross Weight for one package	Typical 12.14 [kgs]		
① Cushion PMP in a Carton	2 [EA]		
② PE Bag, Drive	20 [Pcs]		
③ Products	20 [sets]		
④ Partition	4 [EA]		
⑤ Carton, Bulk	1 [EA]		



(Fig. 15-1) Aggregate package

Barcode Label  
for Master Carton x2



(Fig. 15-2) Label attaching position on the packing box