

SFF Committee

**SFF-8201**

Specification for

**2.5" Form Factor Drive Dimensions**

**Standardized as EIA-720-A 2007/02 at Rev 2.2 dated February 3, 2004**

This specification was submitted as a project to the Electronic Industries Alliance by being incorporated into SFF-8200, and was Expired at that time.

EIA standards can be purchased from <http://global.ihs.com/>

**Subsequent to adoption by EIA, this specification has been revised**

The editor had cause to generate a new revision, the details of which are reflected in the Update History on the 'Expression of Support by Manufacturers' page.

Until these changes have been adopted by the EIA, this specification represents the latest information.

SFF Committee documentation may be purchased in electronic form.  
SFF specifications are available at <ftp://ftp.seagate.com/sff>

SFF Committee

**SFF-8201**

Specification for

**2.5" Form Factor Drive Dimensions**

Rev 3.3

August 30 2014

Secretariat: SFF Committee

Abstract: This document defines the dimensions for 2.5" magnetic disk drives.

This specification provides a common reference for systems manufacturers, system integrators, and suppliers. This is an internal working specification of the SFF Committee, an industry ad hoc group.

This specification is made available for public review, and written comments are solicited from readers. Comments received by the members will be considered for inclusion in future revisions of this specification.

Support: This specification is supported by the identified member companies of the SFF Committee.

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**EXPRESSION OF SUPPORT BY MANUFACTURERS**

The following member companies of the SFF Committee voted in favor of this industry specification.

3M	Madison Cable
Adaptec	Maxtor
Cirrus Logic	Methode
Compaq	Molex
Conner Peripherals	Nexans
Dell Computer	Quantum
EMC	Robinson Nugent
ENDL	Sandisk
Fujitsu CPA	Seagate
HGST	Shenzhen
Hitachi Cable	Sigma
Honda Connector	Sun Microsystems
IBM	TE Connectivity
Integral Peripherals	Toshiba
Intel	Unisys
LSI	Western Digital
Luxshare-ICT	Xyratex

The following member companies of the SFF Committee voted to abstain on this industry specification.

Amphenol	MGE
Avago	NetApp
Comax	Oclaro
DEC	Panduit
Emulex	Pioneer
FCI	QLogic
Finisar	Silicon Systems
Foxconn	Sumitomo
Hewlett Packard	Vitesse Semiconductor
Infineon	Volex
JDS Uniphase	

**Change History**

Rev 2.6 (July 18, 2012):

- Added 5.00 A1 dimension and associated text to make side mounting holes mandatory and bottom mounting holes optional.

Rev 2.7 (October 25, 2012):

- Changed < 7.00 mm to = 7.00 mm.

Rev 2.8 (January 9, 2013):

- Added height of 7.20 mm to Table 4-1.

Rev 2.9 (April 22 2013):

- Removed height of 7.20 mm from Table 4-1.
- Added note to require labeling of 7.20 mm drives.
- Changed note under Figures 4-1 and 4-2 to include 7.20 mm.
- Identified Figures 4-1, 4-2, and 4-3 to be replaced when redrawn without obsolete

mounting holes.

Rev 3.0 (May 24 2013)

- Remove note requiring the labeling of 7.20mm drives.

Rev 3.1 (July 8 2013)

- Replaced Figures 4-1, 4-2, and 4-3

Rev 3.2 (October 25, 2013)

- Corrected note on A1 7.0mm to read A2=0.20 mm (0.008")
- Notes under Figures 4-1, 4-2, 4-3 revised to read as 7 mm

Rev 3.3 (August 30, 2014)

- Editorial changes for consistency between specifications in revised EIA-720.

## Foreword

The development work on this specification was done by the SFF Committee, an industry group. The membership of the committee since its formation in August 1990 has included a mix of companies which are leaders across the industry.

When 2 1/2" diameter disk drives were introduced, there was no commonality on external dimensions e.g. physical size, mounting locations, connector type, connector location, between vendors.

The first use of these disk drives was in specific applications such as laptop portable computers and system integrators worked individually with vendors to develop the packaging. The result was wide diversity, and incompatibility.

The problems faced by integrators, device suppliers, and component suppliers led to the formation of the SFF Committee as an industry ad hoc group to address the marketing and engineering considerations of the emerging new technology.

During the development of the form factor definitions, other activities were suggested because participants in the SFF Committee faced more problems than the physical form factors of disk drives. In November 1992, the charter was expanded to address any issues of general interest and concern to the storage industry. The SFF Committee became a forum for resolving industry issues that are either not addressed by the standards process or need an immediate solution.

Those companies which have agreed to support a specification are identified in the first pages of each SFF Specification. Industry consensus is not an essential requirement to publish an SFF Specification because it is recognized that in an emerging product area, there is room for more than one approach. By making the documentation on competing proposals available, an integrator can examine the alternatives available and select the product that is felt to be most suitable.

SFF Committee meetings are held during T10 weeks (see [www.t10.org](http://www.t10.org)), and Specific Subject Working Groups are held at the convenience of the participants. Material presented at SFF Committee meetings becomes public domain, and there are no restrictions on the open mailing of material presented at committee meetings.

Most of the specifications developed by the SFF Committee have either been incorporated into standards or adopted as standards by EIA (Electronic Industries Association), ANSI (American National Standards Institute) and IEC (International Electrotechnical Commission).

If you are interested in participating or wish to follow the activities of the SFF Committee, the signup for membership and/or documentation can be found at:  
[www.sffcommittee.com/ie/join.html](http://www.sffcommittee.com/ie/join.html)

The complete list of SFF Specifications which have been completed or are currently being worked on by the SFF Committee can be found at:  
<ftp://ftp.seagate.com/sff/SFF-8000.TXT>

If you wish to know more about the SFF Committee, the principles which guide the activities can be found at:  
<ftp://ftp.seagate.com/sff/SFF-8032.TXT>

Suggestions for improvement of this specification will be welcome. They should be sent to the SFF Committee, 14426 Black Walnut Ct, Saratoga, CA 95070.

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SFF Committee --

## 2.5" Form Factor Drive Dimensions

### 1. Scope of SFF-8201

This specification defines the dimensions of 2.5" disk drives.

#### 1.1 Application Environment

The environment for the 2.5" Drive Form Factor is any computer, cabinet, or enclosure connecting to one or more drives in a restricted packaging environment.

The purpose of this Specification is to provide information that will assist vendors to design products that can fit the same packaging envelope.

### 2. References

The SFF Committee activities support the requirements of the storage industry, and it is involved with several standards.

#### 2.1 Industry Documents

The following standards are relevant to many SFF Specifications.

- ASME Y14.5M      Dimensioning and Tolerancing

#### 2.2 SFF Specifications

There are several projects active within the SFF Committee. The complete list of specifications which have been completed or are still being worked on are listed in the specification at <ftp://ftp.seagate.com/sff/SFF-8000.TXT>

#### 2.3 Sources

Those who join the SFF Committee as an Observer or Member receive electronic copies of the minutes and SFF specifications (<http://www.sffcommittee.com/ie/join.html>).

Copies of ANSI standards may be purchased from the InterNational Committee for Information Technology Standards (<http://www.techstreet.com/incitsgate.tmp1>).

#### 2.4 Conventions

The dimensioning conventions are described in ASME-Y14.5M, Geometric Dimensioning and Tolerancing. All dimensions are in millimeters, which are the controlling dimensional units (if inches are supplied, they are for guidance only).

The ISO convention of numbering is used i.e., the thousands and higher multiples are separated by a space and a period is used as the decimal point. This is equivalent to the English/American convention of a comma and a period.

American	French	ISO
0.6	0,6	0.6
1,000	1 000	1 000
1,323,462.9	1 323 462,9	1 323 462.9

### 2.5 Definitions

For the purpose of SFF Specifications, the following definitions apply:

**Obsolete:** Dimensions identified as obsolete are for reference and may apply to existing 2.5" form factor disk drives. New 2.5" form factor disk drives are to be designed to dimensions that are not identified as obsolete.

**Optional:** This term describes features which are not required by the SFF

Specification. However, if any feature defined by the SFF Specification is implemented, it shall be done in the same way as defined by the Specification. Describing a feature as optional in the text is done to assist the reader. If there is a conflict between text and tables on a feature described as optional, the table shall be accepted as being correct.

### **3. General Description**

Table 3-1 specifies the dimensions for 2.5" disk drives and correlates them to the figures. Dimensions identified as obsolete are for reference and may apply to existing device features. New devices are to be designed to dimensions that are not identified as obsolete.

Figure 3-1 defines the dimensions for 2.5" disk drives and shows relationships among the dimensions.

Figure 3-2 contains detail views of the form factor.

Figure 3-3 defines the required mounting holes.

Figure 3-4 defines the length of the form factor and connector that complies with revision 2.0 or higher of this specification. See the referenced specification for connector location requirements.

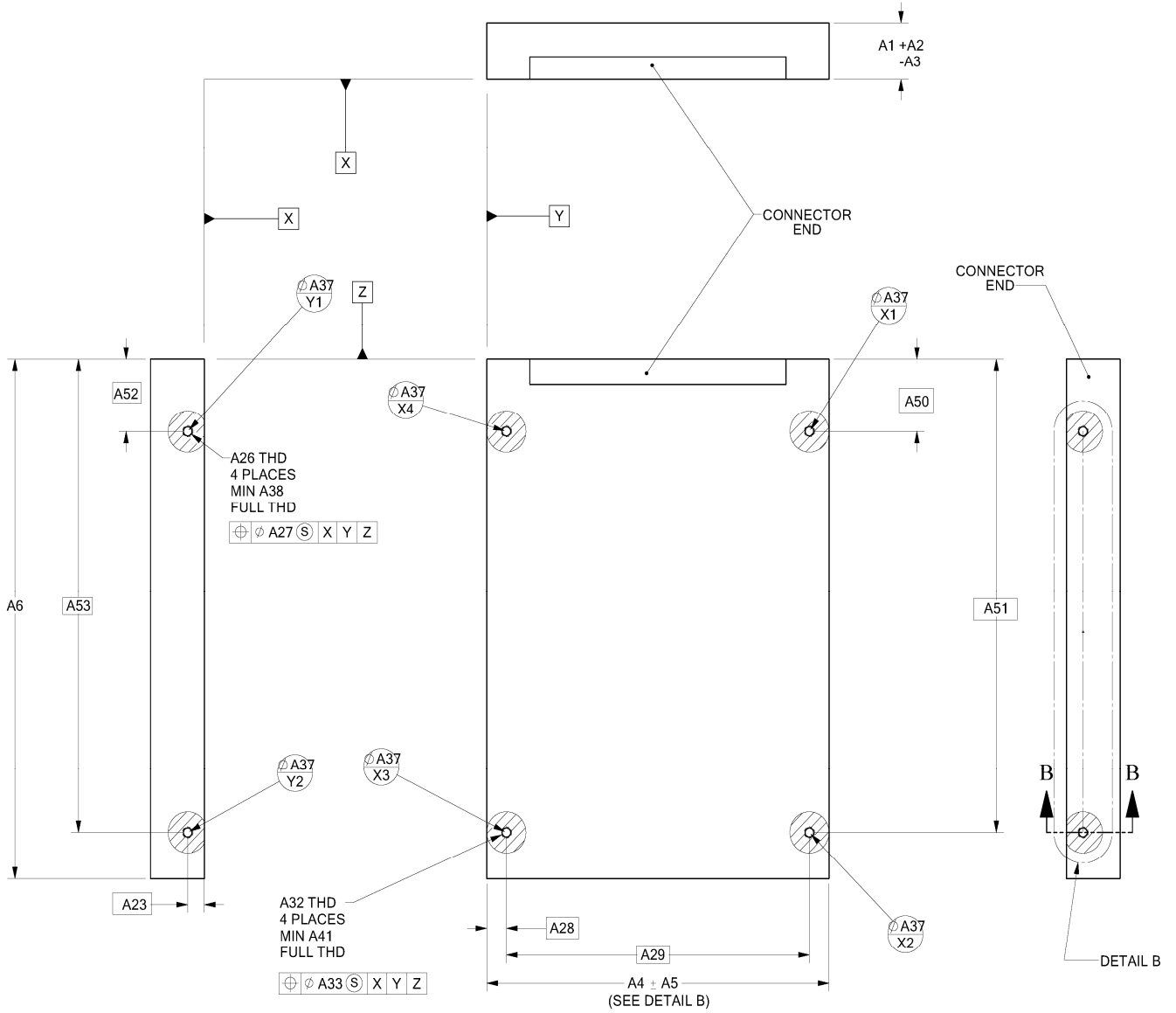


TABLE 3-1 DISK DRIVE DIMENSIONS

Dimension		Millimeters	Inches	Comments
A 1		19.05	0.750	
A 1		17.00	0.669	
A 1		15.00	0.591	
A 1		12.70	0.500	
A 1		10.50	0.413	
A 1		9.50	0.374	A2=A3=0.20 mm
A 1		8.47	0.333	
A 1		7.00	0.276	A2=0.20 mm
A 1		5.00	0.197	A2=A3=0.20 mm
A 2		0.00	0.000	
A 3		0.50	0.020	
A 4		69.85	2.750	
A 5		0.25	0.010	
A 6	Max	101.85	4.010	Obsolete
A 6	Max	100.45	3.955	New requirement
A10		100.20	3.945	SFF-8212
A11		100.50	3.957	SFF-8223
A12		110.20	4.339	SFF-8222
A23		3.00	0.118	
A24		34.93	1.375	Obsolete
A25		38.10	1.500	Obsolete
A26		M3	N/A	
A27		0.50	0.020	
A28		4.07	0.160	
A29		61.72	2.430	
A30		34.93	1.375	Obsolete
A31		38.10	1.500	Obsolete
A33		0.50	0.020	
A37		8.00	0.315	
A50		14.00	0.551	
A51		90.60	3.567	
A52		14.00	0.551	
A53		90.60	3.567	
<b>Threads</b>				
A32		Size	M3	
A38	Min	Penetration	3	2 for A1 ≤ 7 mm
A41	Min	Penetration	2.5	

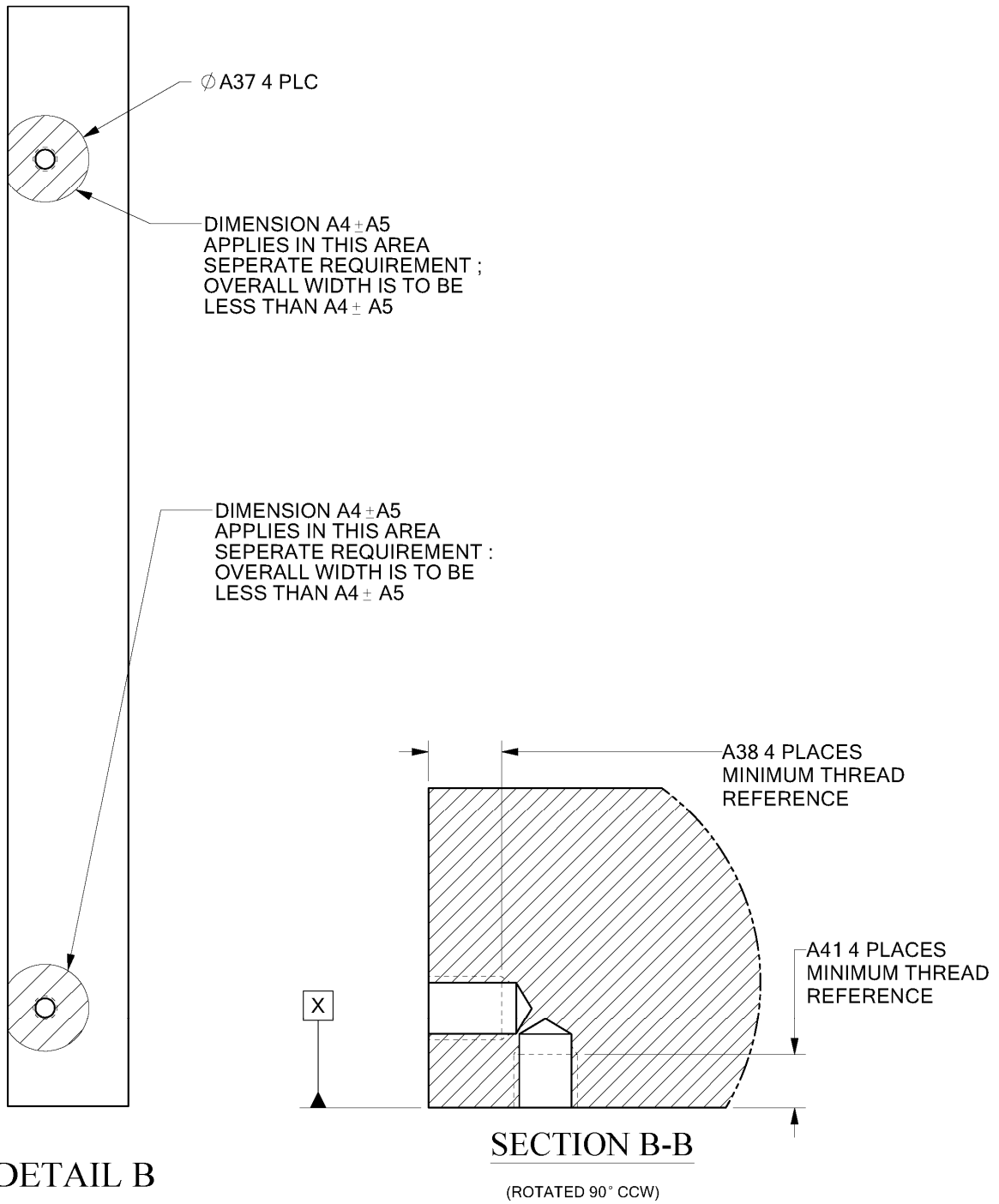
## NOTES:

1. (A4+A5) represents the maximum width of the drive, 70.10 mm.
2. Dimensions A10, A11, and A12 are based on a nominal form factor length of 100.20 mm.
3. Unless diameter targets indicate specific areas, dimensions for a surface apply to a single point minimum. If a surface is not flat, the dimension applies to the highest raised location on that surface.
4. Information in Comments column take precedence over the stated dimensions.

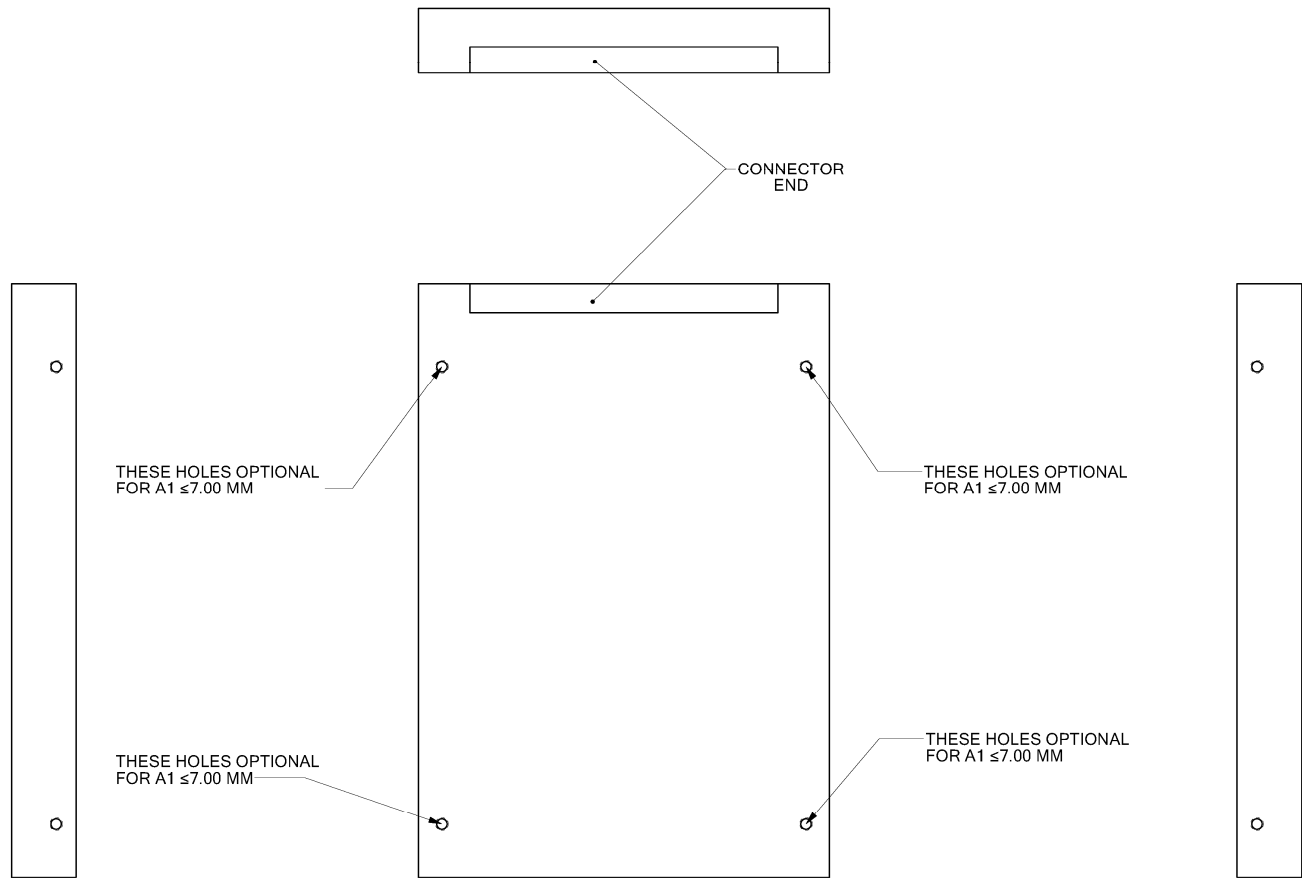


Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm

**FIGURE 3-1 FORM FACTOR OF 2.5" DISK DRIVE**

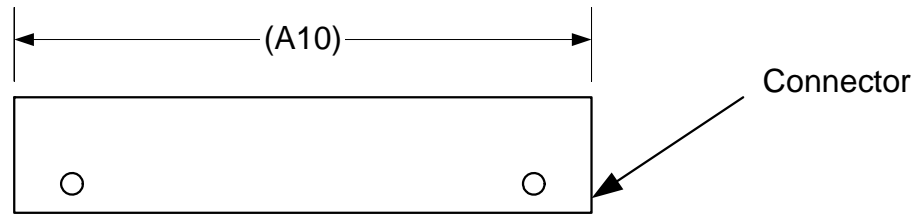


Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm  
**FIGURE 3-2 DETAIL VIEWS OF 2.5" DISK DRIVE FORM FACTOR**

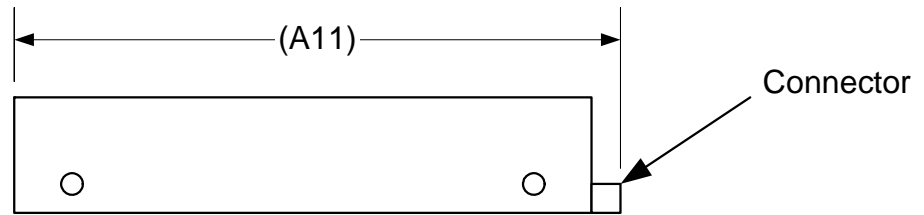


Note: Bottom mounting holes are optional on form factors with  $A1 \leq 7$  mm

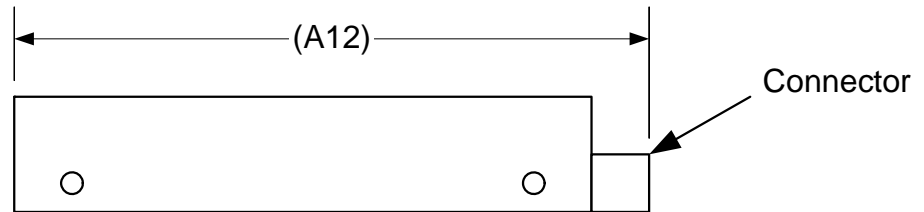
**FIGURE 3-3 REQUIRED MOUNTING HOLES OF 2.5" DISK DRIVE**



Form factor overall length with 50-pin connector  
Ref. SFF-8212



Form factor overall length with Serial ATA or Serial Attached SCSI connector  
Ref. SFF-8223



Form factor overall length with SCA-2 connector  
Ref. SFF-8222

FIGURE 3-4 LENGTH OF 2.5" DISK DRIVE WITH CONNECTOR