

YASKAWA

SEISMIC

IBC/HCAI SEISMIC ANCHORAGE

MOUNTING SUPPLEMENT

APPLICABLE DRIVE SERIES:

FP605 Drives
GA500 Drives
GA800 Drives
HV600 Drives
HV600 Bypass and Configured Panels

PDF

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Simplify Drive Installation
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DOCUMENT NUMBER: TOEPYAISUP18

1 Supplemental Information - Applicable Products

The contents of this supplement apply to the products in [Table 1.1](#).

Table 1.1 Seismic Rated Products

Drive Series	Models	Page
GA500 Drives	GA50Uxxxx	4
GA800 Drives	GA80Uxxxx	5
FP605 Drives	FP65Uxxxx	6
HV600 Drives	HV60Uxxxx	6
HV600 Bypass	H6BPxxxx H6B1xxxx H6B2xxxx H6B3xxxx	8
HV600 Configured Panels	H6CPxxxx H6C1xxxx H6C2xxxx H6C3xxxx	11

2 Seismic Standards

The Yaskawa drives and bypasses in this supplement are capable of structurally and operationally withstanding the seismic response criteria as defined in the International Building Code (IBC), ASCE7, and California Department of Health Care Access and Information (HCAI).

The models in this supplement were tested in compliance with AC-156 to meet the IBC seismic certification as shown on the certification labels.



Figure 2.1 Seismic Certification Label Example for Drives

Seismic Certification
HCAI Preapproval: OSP-0687
CoC: VMA-53982-01C
Product Type: General Purpose Bypass VFD
Product Models: HV600 Narrow Bypass Panel
Manufacturer: Yaskawa America, Inc
Manufacturer's ID: 000000
Mounting Configuration: Rigid or Flexible Wall Mount
Applicable Building Codes: IBC 2018, 2021
Perf Spec: $S_{DS} \leq 2.00g$, $z/h \leq 1.0$, $I_p \leq 1.5$
 $S_{DS} \leq 2.50g$, $z/h = 0$
Refer to Seismic Install Manual TOEPYASUP18


The logo is circular with the text "IBC CERTIFIED" around the top edge and "VMC GROUP" at the bottom. In the center is a square icon containing a stylized "M" shape with a horizontal bar below it.

Figure 2.2 Seismic Certification Label Example for Bypasses and Configured Packages

3 IBC/HCAI Seismic Mounting Requirements for GA500 Drives

Use the attachment hardware in [Table 3.1](#) to install your drive to meet the IBC/HCAI seismic mounting requirements.

◆ IP20/Protected Chassis and IP20/UL Type 1 Kit Enclosures

Table 3.1 IP20/Protected Chassis and IP20/UL Type 1 Kit Attachment Methods and Hardware Specifications

Model GA50UxxxxxBx	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
B001 to B018 2001 to 2056 4001 to 4038	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/16 in
2070, 2082 4044, 4060	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/4 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	1/4 in
			Minimum Embedment	1.63 in
			Critical Edge Distance	4.0 in
CMU	1500 PSI CMU with 2000 PSI grout			

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

4 IBC/HCAI Seismic Mounting Requirements for GA800 Drives

Use the attachment hardware in [Table 4.1](#) to install your drive to meet the IBC/HCAI seismic mounting requirements.

◆ IP20/UL Type 1, IP20/Protected Chassis, or IP55/UL Type 12 Backside Attachment Methods and Hardware Specifications

Table 4.1 IP20/UL Type 1, IP20/Protected Chassis, or IP55/UL Type 12 Backside Attachment Methods and Hardware Specifications

Model GA80Uxxxxxx	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
2257, 2313 4208 to 4302	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
CMU	1500 PSI CMU with 2000 PSI grout			
2360, 2415 4371, 4414 5289	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	1/2 in
			Minimum Embedment	4.25 in
			Critical Edge Distance	8.0 in
CMU	1500 PSI CMU with 2000 PSI grout			
4477 to 4720 5382 to 5472	Direct to Steel	5	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

5 IBC/HCAI Seismic Mounting Requirements for FP605 and HV600 Drives

Use the attachment hardware in [Table 5.1](#) and [Table 5.2](#) depending on your enclosure type to install your drive to meet the IBC/HCAI seismic mounting requirements.

◆ IP20/UL Type 1 or IP20/Protected Chassis Enclosures Attachment Methods and Hardware Specifications

Table 5.1 IP20/UL Type 1 or IP20/Protected Chassis Attachment Methods and Hardware Specifications

Model FP65Uxxxxxxx HV60Uxxxxxxx	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
2011 to 2031 4005 to 4034	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/16 in
2046 to 2114 4040 to 4124	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/4 in
	Direct to Concrete <i>*/</i>	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	1/4 in
			Minimum Embedment	2.50 in
			Critical Edge Distance	4.0 in
CMU	1500 PSI CMU with 2000 PSI grout			
2143 to 2273 4156 to 4240	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete <i>*/</i>	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
CMU	1500 PSI CMU with 2000 PSI grout			
4302	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete <i>*/</i>	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	1/2 in
			Minimum Embedment	4.25 in
			Critical Edge Distance	8.0 in
CMU	1500 PSI CMU with 2000 PSI grout			

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

◆ Type IP55/UL Type 12 Enclosures (with and without Switch)

Table 5.2 IP55/UL Type 12 Attachment Methods and Hardware Specifications

Model FP65Uxxxxxxx HV60Uxxxxxxx	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
2011 to 2031 4005 to 4034	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/16 in
2046 to 2114 4040 to 4124	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/4 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	1/4 in
			Minimum Embedment	2.50 in
			Critical Edge Distance	4.0 in
CMU	1500 PSI CMU with 2000 PSI grout			

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

6 IBC/HCAI Seismic Mounting Requirements for HV600 Bypass

Use the attachment hardware in [Table 6.1](#) to [Table 6.4](#) depending on your enclosure type to install your bypass to meet the IBC/HCAI seismic mounting requirements. Some models require the use of two #8-32 screws, at least 3/8" long, to secure the door.

◆ IP20/UL Type 1 Enclosures

Table 6.1 IP20/UL Type 1 Narrow Bypass Attachment Methods and Hardware Specifications

Bypass Model H6BP	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D016 D024 to D074 B1P1, B001 to B014 B021 to B077	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
CMU	1500 PSI CMU with 2000 PSI grout			

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

Table 6.2 IP20/UL Type 1 Enclosed Bypass Attachment Methods and Hardware Specifications

Bypass Model H6B1	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D016 D024 to D114 ^{*1} A002 to A015 A022 to A104 ^{*1} B1P1, B001 to B014 B021 to B124 ^{*1}	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*2}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
CMU	1500 PSI CMU with 2000 PSI grout			
D143, D169 ^{*1} A130, A154 ^{*1} B156 ^{*1}	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete ^{*2} (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
CMU	1500 PSI CMU with 2000 PSI grout			

*1 These models also require the use of two #8-32 seismic door securing screws.

*2 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

◆ IP55/UL Type 12 Enclosures

Table 6.3 IP55/UL Type 12 Enclosed Bypass Attachment Methods and Hardware Specifications

Bypass Model H6B2	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D059 A002 to A054 B1P1, B001 to B065	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
			CMU	1500 PSI CMU with 2000 PSI grout
D074 to D169 A068 to A154 B077 to B156	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete ^{*1} (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
			CMU	1500 PSI CMU with 2000 PSI grout

*1 Refer to *Concrete Masonry Attachment Detail on page 13* for Direct to Concrete installations.

◆ UL Type 3R Enclosures

Table 6.4 UL Type 3R Enclosed Bypass Attachment Methods and Hardware Specifications

Bypass Model H6B3	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D059 A002 to A054 B1P1, B001 to B065	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
			CMU	1500 PSI CMU with 2000 PSI grout
D074 to D114 A068 to A104 B077 to B124	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1} (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	3/8 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
			CMU	1500 PSI CMU with 2000 PSI grout

6 IBC/HCAI Seismic Mounting Requirements for HV600 Bypass

Bypass Model H6B3	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D143, D169 A130, A154 B156	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete ^{*1} (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
		CMU	1500 PSI CMU with 2000 PSI grout	

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

7 IBC/HCAI Seismic Mounting Requirements for HV600 Configured

Use the attachment hardware in [Table 7.1](#) to [Table 7.4](#) depending on your enclosure type to install your drive to meet the IBC/HCAI seismic mounting requirements. Some models require the use of two #8-32 screws, at least 3/8" long, to secure the door.

◆ IP20/UL Type 1 Enclosures

Table 7.1 IP20/UL Type 1 Narrow Configured Attachment Methods and Hardware Specifications

Configured Model H6CP	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D016 D024 to D114 B001 to B014 B021 to B096	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*1}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
	CMU	1500 PSI CMU with 2000 PSI grout		

*1 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

Table 7.2 IP20/UL Type 1 Enclosed Configured Attachment Methods and Hardware Specifications

Configured Model H6C1	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D016 D024 to D114 ^{*1} A002 to A015 A022 to A104 ^{*1} B1P1, B001 to B014 B021 to B124 ^{*1}	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete ^{*2}	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
	CMU	1500 PSI CMU with 2000 PSI grout		
D143 to D273 ^{*1} A130 to A248 ^{*1} B156 to B240 ^{*1}	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete ^{*2} (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
	CMU	1500 PSI CMU with 2000 PSI grout		

*1 These models also require the use of two #8-32 seismic door securing screws.

*2 Refer to [Concrete Masonry Attachment Detail on page 13](#) for Direct to Concrete installations.

◆ IP55/UL Type 12 Enclosures

Table 7.3 IP55/UL Type 12 Enclosed Configured Attachment Methods and Hardware Specifications

Configured Model H6C2	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D114 A002 to A104 B1P1, B001 to B124	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete <i>*/</i>	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
			CMU	1500 PSI CMU with 2000 PSI grout
D143 to D273 A130 to A248 B156 to B240	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete <i>*/</i> (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
			CMU	1500 PSI CMU with 2000 PSI grout

*1 Refer to *Concrete Masonry Attachment Detail on page 13* for Direct to Concrete installations.

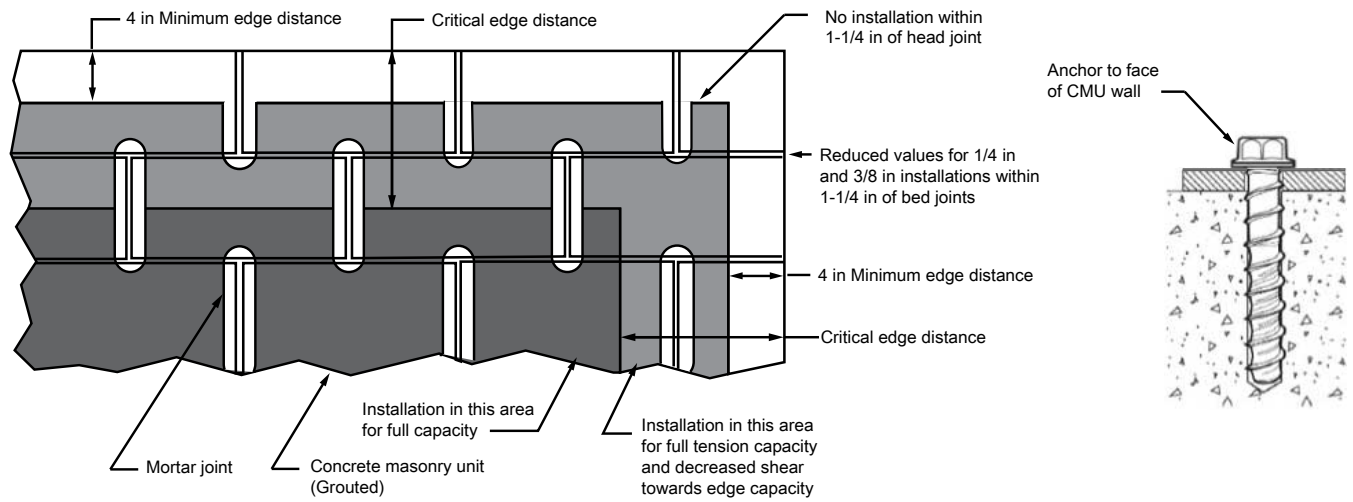
◆ UL Type 3R Enclosures

Table 7.4 UL Type 3R Enclosed Configured Attachment Methods and Hardware Specifications

Configured Model H6C3	Attachment Method	Attachment Hardware		
		Quantity	Specifications	
D002 to D059 A002 to A054 B1P1, B001 to B065	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	3/8 in
	Direct to Concrete <i>*/</i>	4	Anchor Material	Hilti KH-EZ Screw Anchor
			Anchor Diameter	3/8 in
			Minimum Embedment	3.25 in
			Critical Edge Distance	6.0 in
			CMU	1500 PSI CMU with 2000 PSI grout
D074 to D169 A068 to A154 B077 to B156	Direct to Steel	4	Anchor Material	ASTM A307
			Anchor Diameter	1/2 in
	Direct to Concrete <i>*/</i> (IBC 2021 Excluded)	4	Anchor Material	Hilti HIT-HY 270 + HAS-V-36
			Anchor Diameter	1/2 in
			Minimum Embedment	4.50 in
			Critical Edge Distance	20.0 in
			CMU	1500 PSI CMU with 2000 PSI grout

*1 Refer to *Concrete Masonry Attachment Detail on page 13* for Direct to Concrete installations.

8 Concrete Masonry Attachment Detail



Note:

Anchorage Installation is restricted to shaded areas as per ESR 3056.

Revision History

Date of Publication	Revision Number	Revised Content
July 2022	<1>	Addition: FP605 drive models, GA800 IP55/UL Type 12 Backside Enclosures Revision: Model number table headings
May 2022	-	First release. Document supports IBC/HCAI certification.



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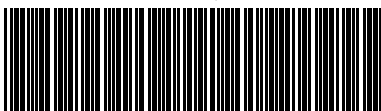
In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

Original Instructions

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