

Specification Selection Guide

SPECIFICATION SELECTION GUIDE

to be used with Vibration Control Engineering Specifications for HVAC Equipment in Office Buildings, Colleges, Theatres and Similar Structures

	ISOLATION AND DEFLECTION CRITERIA FOR 4"(100mm)THRU 6"(150mm)THICK SOLID CONCRETE FLOORS (note 6)									
	Ground Supported Slab or Basement		20'(6m) Floor Span Possible Floor Defl.-0.67"(17mm)		30'(9m) Floor Span Possible Floor Defl.-1.0"(25mm)		40'(12m) Floor Span Possible Floor Defl.-1.33"(34mm)		50'(15m) Floor Span Possible Floor Defl.-1.67"(42mm)	
	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)
REFRIG. MACHINES										
Absorption Machines	A-O	0.35(9)	D-O	0.75(19)	D-O	0.75(19)	D-O	1.5(38)	D-O	1.5(38)
Centrifugal Chillers or Heat Pumps										
Cooler Condenser Mounted Hermetic Compressors	A-O	0.35(9)	D-O	0.75(19)	D-O or E*-O	1.5(38) Max 3Hz	D-O or E*-O	1.5(38) Max 3Hz	D-K-O or E*-K-O	2.5(64) Max 3Hz
Cooler Condenser Alongside Hermetic Compressors	A-O	0.35(9)	D-O	0.75(19)	D-O or E*-O	1.5(38) Max 3Hz	D-O or E*-O	1.5(38) Max 3Hz	D-O or E*-O	2.5(64) Max 3Hz
Open Drive Type Compressors (note 3)	A-J-O	0.35(9)	D-J-O	0.75(19)	D-J-O or E*-J-O	1.5(38) Max 3Hz	D-J-O or E*-J-O	1.5(38) Max 3Hz	D-J-O or E*-J-O	2.5(64) Max 3Hz
Refrig. Reciprocating Compressors										
500 rpm to 750 rpm	B	0.75(19)	B	1.5(38)	B	1.5(38)	B-K	2.5(64)	B-K	3.5(89)
751 rpm and Over	B	0.75(19)	B	0.75(19)	B or C*	1.5(38) Max 3Hz	B-K or C*-K	2.5(64) Max 3Hz	B-K or C*-K	3.5(89) Max 3Hz
Reciprocating Chillers or Heat Pumps										
500 rpm to 750 rpm	D-O	0.75(19)	D-O	1.5(38)	D-O	1.5(38)	D-K-O	2.5(64)	D-K-O	3.5(89)
751 rpm and Over	D-O	0.75(19)	D-O	0.75(19)	D-O	1.5(38)	D-K-O	2.5(64)	D-K-O	3.5(89)
PACKAGED STEAM GENERATIONS (Boilers)	A-P	0.35(9)	D-P	0.75(19)	D-P	0.75(19)	D-P	1.5(38)	D-P	2.5(64)
Pumps										
Close Coupled										
Thru 5hp (4kw)	A-L-O	0.35(9)	B-L-O	0.75(19)	B-L-O	0.75(19)	B-L-O	1.5(38)	B-L-O	1.5(38)
7 1/2 hp (5.6kw) and Larger	B-L-O	0.75(19)	B-L-O	0.75(19)	B-L-O	1.5(38)	B-L-O	1.5(38)	B-L-O	2.5(64)
Base Mounted										
Thru 60hp (45kw)	B-L-O	0.75(19)	B-L-O	0.75(19)	B-L-O	1.5(38)	B-L-O	1.5(38)	B-L-O	2.5(64)
75hp (56kw) and Larger	B-L-O	0.75(19)	B-L-O	1.5(38)	B-L-O or C*-L-O	2.5(64) Max 3Hz	B-L-O or C*-L-O	2.5(64) Max 3Hz	B-L-O or C*-L-O	3.5(89) Max 3Hz
FACTORY ASSEMBLED H & V UNITS										
Fan Coil Units (Unit Heaters)	F	0.75(19)	F	0.75(19)	F	0.75(19)	F	0.75(19)	F	0.75(19)
Curb Mounted	—	—	M	0.75(19)	N	1.5(38)	N	2.5(64)	N	2.5(64)
Roof Top Units										
Suspended Units (for Fan Heads see Blowers Guide)										
Thru 5hp (4kw)	F	0.75(19)	F	0.75(19)	F	0.75(19)	F	0.75(19)	F	0.75(19)
7 1/2 hp (5.6kw) and Larger—275 rpm to 400 rpm	F	1.5(38)	F	1.5(38)	F	1.5(38)	F	1.5(38)	F	1.5(38)
7 1/2 hp (5.6kw) and Larger—401 rpm and Over	F	0.75(19)	F	0.75(19)	F	0.75(19)	F	1.5(38)	F	2.5(64)
Floor Mounted Units (for Fan Heads see Blowers Guide)										
Thru 5hp (4kw)	A	0.35(9)	B	0.75(19)	B	0.75(19)	B	0.75(19)	B	0.75(19)
7 1/2 hp (5.6kw) and Larger—275 rpm to 400 rpm	A	0.35(9)	B	1.5(38)	B	1.5(38)	B	1.5(38)	B	1.5(38)
7 1/2 hp (5.6kw) to 40hp—401 rpm and Over	A	0.35(9)	B	0.75(19)	B	0.75(19)	B	1.5(38)	B-K	2.5(64)
50hp (38kw) and Larger—401 rpm and Over	A	0.35(9)	B	0.75(19)	B	1.5(38)	B-K	2.5(64)	B-K	3.5(89)
AIR COMPRESSOR										
Tank Mounted Type										
V - W Type	B-L-P	0.75(19)	B-L-P	0.75(19)	B-L-P	1.5(38)	B-L-P	2.5(64)	B-L-P	3.5(89)
	B-L-P	0.75(19)	B-L-P	0.75(19)	B-L-P	1.5(38)	B-L-P	2.5(64)	B-L-P	3.5(89)
Horiz, Vert, 1 or 2 Cylinders (note 4)										
275 rpm to 499 rpm	B-L ¹ -P	2.5(64)	B-L ¹ -P	2.5(64)	B-L ¹ -P	2.5(64)	B-L ¹ -P	3.5(89)	B-L ¹ -P	3.5(89)
500 rpm to 800 rpm	B-L ¹ -P	1.5(38)	B-L ¹ -P	1.5(38)	B-L ¹ -P	2.5(64)	B-L ¹ -P	3.5(89)	B-L ¹ -P	3.5(89)

*NOTE: Isolators in Red are Air Springs recommended for highly critical locations.

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Vibration Control
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		ISOLATION AND DEFLECTION CRITERIA FOR 4"(100mm)THRU 6"(150mm)THICK SOLID CONCRETE FLOORS (note 7)									
		Ground Supported Slab or Basement		20'(6m) Floor Span Possible Floor Defl.-0.67"(17mm)		30'(9m) Floor Span Possible Floor Defl.-1.0"(25mm)		40'(12m) Floor Span Possible Floor Defl.-1.33"(34mm)		50'(15m) Floor Span Possible Floor Defl.-1.67"(42mm)	
		Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)	Isolation Spec.	Isol. Defl. in(mm)
BLOWERS		Engineering Specifications and Minimum Static Deflection as tabulated below (note 1)									
Utility Sets											
Floor Mounted (note 5)	A	0.35(9)	Spec B for 0.75"(19mm) and 1.5"(38mm) deflection and Spec B-L for over 1.5"(38mm) deflection with deflection from Blower Minimum Deflection Guide below, but not to exceed 2.5"(64mm)								
Roof Mounted	—	—	Spec B-L with deflection from Blower Minimum Deflection Guide below. If roof will not handle concrete base load use Spec D for 0.75"(19mm) and 1.5"(38mm) deflection and Spec D-K for over 1.5"(38mm) deflection.								
Suspended Unit (note 5)	—	—	Spec F with deflection from Blower Minimum Deflection Guide below, not to exceed 2.5"(64mm) deflection.								
Centrifugal Blowers (note 6)	A-L	0.35(9)	Spec B-L with deflection from Blower Minimum Deflection Guide below.								
Fan Heads (HVAC Unit Blower Section Only)											
Floor Mounted	A-I	0.35(9)	Spec B-I if 0.75"(19mm) or 1.5"(38mm) deflection or Spec B-K-I for deflection over 2.5"(64mm) to 4.5"(114mm) from Blower Minimum Deflection Guide below.								
Suspended Units	Spec F-I with deflection from Blower Minimum Deflection Guide below.										
Tubular Centrifugal and Axial Fans											
Suspended Units	Spec F with deflection from Blower Minimum Deflection Guide below, Spec F-I for over 4"(102mm) static pressure.										
Floor Mounted with Motor on/in Fan Casing	A	0.35(9)	Spec B for 0.75"(19mm) and 1.5"(38mm) deflection and Spec B-K-I for 2.5"(64mm) to 4.5"(114mm) deflection with deflection from Blower Minimum Deflection Guide below, Spec B-L-I or B-I for over 4"(102mm) static pressure.								
Floor Mounted Arrangement 1 or any Separately Mounted Motor	A-L	0.35(9)	Spec B-L with deflection from Blower Minimum Deflection Guide below.								
COOLING TOWERS & CONDENSING UNITS	A	0.35(9)	Spec D or E* with deflection from Blower Minimum Deflection Guide below.								

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Blower Minimum Deflection Guide

When blowers are 60 HP (45kw) or larger, select deflection requirements for next larger span. A minimum of 2.5"(65mm) should be used unless larger deflections are called for on the chart or these fans are located in the lowest sub-basement or on a slab on grade.

Fan Speed RPM	Required Deflection for Ground Supported Slab or Basement	Required Deflection for 20' (6m) Floor Span	Required Deflection for 30' (9m) Floor Span	Required Deflection for 40' (12m) Floor Span	Required Deflection for 50' (15m) Floor Span
500 and up	0.35" (9mm)	0.75" (19mm)	1.5" (38mm)	2.5" (64mm)	3.5" (89mm)
375-499	0.35" (9mm)	1.5" (38mm)	2.5" (64mm)	3.5" (89mm)	3.5" (89mm)
300-374	0.35" (9mm)	2.5" (64mm)	2.5" (64mm)	3.5" (89mm)	3.5" (89mm)
225-299	0.35" (9mm)	3.5" (89mm)	3.5" (89mm)	3.5" (89mm)	3.5" (89mm)
175-224	0.35" (9mm)	3.5" (89mm)	4.5" (114mm)	4.5" (114mm)	4.5" (114mm)