GENERAL INFORMATION

0.300" HEAD DRIVE PINS

Standard Flat Head Fasteners

INTRODUCTION

Drive pins with a 0.300" diameter head are designed for permanently fastening a fixture to concrete, concrete over steel deck, concrete masonry walls and A36 or A572 / A992 structural steel. The fasteners are manufactured with a 0.145" diameter shank in various lengths. Knurled shank designs are available for installations in thick steel base materials. A plastic flute is mounted on the pin shank to retain the drive pin in the barrel of the tool and provide guidance during the driving operation. The fasteners are also available in with a mechanically galvanized (MG) coating for use in treated lumber.

GENERAL APPLICATIONS AND USES

- Attaching light gauge steel to concrete, concrete over steel deck, concrete masonry or steel
- Attaching wood members to concrete, concrete masonry or steel
- Attaching accessories, fixtures and components to concrete, concrete over steel deck, concrete masonry or steel
- Sill plate anchorage

APPROVALS AND LISTINGS

- International Code Council, Evaluation Service (ICC-ES), ESR-2024
- Code compliant with the International Building Code/International Residential Code: 2018 IBC/IRC, 2015 IBC/IRC, 2012 IBC/IRC, and 2009 IBC/IRC
- Tested in accordance with ASTM E1190 and ICC-ES AC70 for use in concrete, concrete over steel deck, concrete masonry and steel

GUIDE SPECIFICATION

- CSI Divisions: 03 15 00 - Concrete Accessories, 05 05 23 - Metal Fastenings, 06 05 23 - Wood, Plastic and Composite Fastenings, 09 22 16.23 - Fasteners.Power-driven fasteners shall be 0.300" head drive pins as supplied by DEWALT, Towson, MD. Fasteners shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

SECTION CONTENTS

0.300" HEAD DRIVE PIN

0.300" HEAD DRIVE PIN WITH TOP HAT

0.300" HEAD DRIVE PIN WITH WASHER

0.300" HEAD DRIVE PIN MECHANICALLY GALVANIZED

0.300" HEAD BALLISTIC POINT DRIVE PIN

SUITABLE BASE MATERIALS

- Normal-weight concrete
- Lightweight concrete
- Concrete over steel deck
- Grouted concrete masonry (CMU)
- Hollow concrete masonry (CMU)
- Steel

FASTENER SIZE RANGE

- 1/2" length through 3" length

CODE LISTED
ICC-ES ESR-2024
CONCRETE, MASONRY, STEEL

SELECTION GUIDE

Pin / Fastener Description	Dimensions		Base Material					DEWALT Tools						Approvals & Listings
	Shank Diameter	Shank Length	Concrete	Lightweight Concrete	Concrete over Steel Deck	Concrete Masonry (CMU)	Steel	P1000 / T1000	P2201	P35s	P3500 / PA3500	Sniper	DFD270	
0.300" Head Pin (including MG pins)	0.145"	1/2" to 1-1/2"	●	●	●	●	●	●	●	●	●	●	●	ICC-ES ESR-2024
	0.145"	2" to 3"	●	●	●	○	○	●	●		●		●	ICC-ES ESR-2024
0.300" Head Pin with Top Hat	0.145"	1/2" to 1"	●	●	●	●	●	●	●	●	●	●	●	ICC-ES ESR-2024
0.300" Head Pin with Washer (including MG pins)	0.145"	3/4" to 1-1/2"	●	●	●	●	●	●	●	●	●	●	●	ICC-ES ESR-2024
	0.145"	2" to 3"	●	●	●	○	○	●	●		●		●	ICC-ES ESR-2024
0.300" Head Ballistic Point Pin	0.181/0.150"	1-7/8"	●	●	●	○	○	●	●		●		●	ICC-ES ESR-2024

● Suitable ○ May be Suitable

MG = Mechanical Galvanized

PERFORMANCE DATA

Allowable Load Capacities for Powder Actuated Fasteners in Normal-Weight Concrete[1,2,3,4,5,6]

Fastener Description	Minimum Embed. Depth in. (mm)	Minimum Concrete Compressive Strength (f'c)							
		2,000psi		2,500psi		3,000psi		4,000psi	
		Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
0.300" Head Drive Pin (0.145" Shank)	5/8 (15.9)	25 (0.1)	45 (0.2)	80 (0.4)	150 (0.7)	85 (0.4)	150 (0.7)	85 (0.4)	150 (0.7)
	3/4 (19.1)	60 (0.3)	95 (0.4)	85 (0.4)	195 (0.9)	90 (0.4)	195 (0.9)	90 (0.4)	195 (0.9)
	1 (25.4)	100 (0.4)	140 (0.6)	145 (0.6)	400 (1.8)	145 (0.6)	400 (1.8)	145 (0.6)	400 (1.8)
	1-1/4 (31.8)	110 (0.5)	155 (0.7)	305 (1.4)	495 (2.2)	305 (1.4)	495 (2.2)	305 (1.4)	495 (2.2)
	1-1/2 (38.1)	115 (0.5)	175 (0.8)	305 (1.4)	495 (2.2)	465 (2.1)	505 (2.2)	465 (2.1)	505 (2.2)

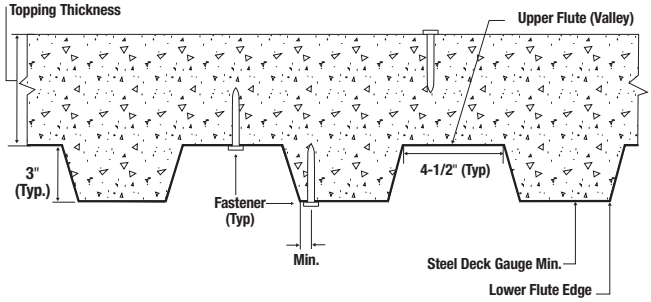
1. Fasteners must not be driven until the concrete has reached the minimum designated compressive strength. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.
2. The tabulated tension and shear values are for the fasteners only. Steel or wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0. Consideration of additional safety factors may be necess ary depending on the application such as life safety.
4. Concrete member thickness must be a minimum of three times the fastener embedment depth.
5. Fasteners must have a minimum spacing distance of 3 inches and a minimum edge distance of 3-1/4 inches in accordance with ASTM E 1190. Consideration of smaller spacing and edge distances may be given based on application or jobsite testing.
6. Multiple fasteners are recommended for any attachment for increased reliability.

Allowable Load Capacities for Powder Actuated Fasteners in Lightweight Concrete and Lightweight Concrete over Steel Deck[1,2,3,8]

Fastener Description	Minimum Embed. Depth in. (mm)	Minimum Concrete Compressive Strength, f 'c = 3,000 psi					
		Directly into Concrete[4,5]		Through Soffit of Steel Deck Into Concrete (3-inch Deep Profile)			
				Upper Flute[6,7]		Lower Flute[6,7]	
		Tension	Shear	Tension	Shear	Tension	Shear
		Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)
0.300" Head Drive Pin (0.145" Shank)	3/4 (19)	70 (0.3)	70 (0.3)	165 (0.7)	280 (1.3)	95 (0.4)	290 (1.3)
	7/8 (22)	135 (0.6)	145 (0.6)	165 (0.7)	280 (1.3)	165 (0.7)	290 (1.3)
	1 (25)	200 (0.9)	215 (1.0)	175 (0.8)	290 (1.3)	165 (0.7)	290 (1.3)
	1-1/4 (32)	250 (1.1)	305 (1.4)	280 (1.2)	340 (1.5)	190 (0.8)	340 (1.5)
	1-1/2 (38)	340 (1.5)	375 (1.7)	280 (1.2)	380 (1.7)	235 (1.0)	380 (1.7)

1. Fasteners must not be driven until the concrete has reached the minimum designated compressive strength. For a concrete compressive strength of 4,000 psi, the tabulated allowable loads may be increased by 12 percent. Fasteners may also be installed in 2,500 psi concrete provided the allowable loads are reduced by 11 percent.
2. The tabulated tension and shear values are for the fasteners only. Steel or wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. For fasteners installed directly into concrete, the member thickness must be a minimum of three times the embedment but not necessary to be greater than 3.25 inches. Tabulated values are also applicable to the tops of concrete-filled steel deck profiles.
5. Fasteners must have a minimum spacing distance of 3 inches and a minimum edge distance 3 inches in accordance with ASTM E 1190. Consideration of smaller spacing and edge distances may be given based on application or jobsite testing.
6. For fasteners installed into the upper flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 3.25 inches. For fasteners installed into the lower flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 2.25 inches.
7. Fasteners installed into the steel deck profile must have a minimum spacing distance of 4 inches (upper and lower flute) and a minimum edge distance of 1-1/8 inches (lower flute); minimum deck end distance is 3-1/2 inches. Consideration of smaller spacing distances may be given based on application or jobsite testing.
8. Embedment is measured from the surface of the steel deck; the steel deck panel must have a base-metal thickness of 0.030-inch (22 gauge) to 0.048-inch (18 gauge). Consideration for the thickness of the material fastened to the base material must be given to achieve the required embedment for the fasteners.
9. Multiple fasteners are recommended for any attachment for increased reliability.

CONCRETE OVER STEEL DECK



Allowable Load Capacities for Powder Actuated Fasteners used to Install Wood Sill Plates into Normal-Weight Concrete[1,2,3,4,5,6,7,8,9,10]

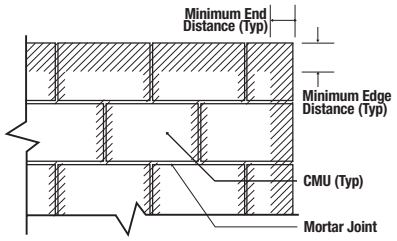
Fastener Description	Minimum Embedment Depth in. (mm)	Minimum Concrete Compressive Strength, f 'c = 2,000 psi		
		Tension	Load Perpendicular to Edge	Load Parallel to Edge
			Shear	Shear
		Allowable lbs. (kN)	Allowable lbs. (kN)	Allowable lbs. (kN)
0.300" Head Drive Pin (0.145" Shank)	1-1/2 (38)	125 (0.6)	150 (0.7)	230 (1.0)

1. Fasteners must not be driven until the concrete has reached the minimum designated compressive strength.
2. The tabulated tension and shear values are for the fasteners only. Wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. Concrete member thickness must be a minimum of three times the fastener embedment depth.
5. Fasteners must have a minimum spacing distance of 4 inches and a minimum edge distance of 1-3/4 inches.
6. Minimum nominal washer size is 7/8 inch; minimum washer bearing area is 0.55 inch^2. Washers may be round or square.
7. Fastener bending yield strength (F_{yb}) is 90,000 psi and dowel bearing strength (F_e) is 7,500 psi.
8. For interior nonstructural walls, fasteners must be placed at 6 inches from ends of the sill plates with a maximum fastener spacing of 3 feet which is applicable to a maximum wall height of 14 feet in accordance with ICC-ES AC70. Interior nonstructural walls are limited to locations where bearing walls, shear walls or braced walls are not required by the approved plans. Other attachments including perimeter anchorage must be investigated for compliance with the applicable code using the tabulated and noted information.
9. Mechanically Galvanized (MG) fasteners can be considered for use with preservative treated lumber.
10. Multiple fasteners are recommended for any attachment for increased reliability.

Allowable Load Capacities for Powder Actuated Fasteners in Concrete Masonry (CMU)[1,2,3,9,10,11]

Fastener Description	Min. Embed. Depth in. (mm)	Minimum Masonry Compressive Strength, f 'c = 1,500 psi							
		Hollow CMU[4,5]		Grout-filled Concrete Masonry[6,7,8]					
		Cell Face		Cell Face		Mortar Joint		Top of Grouted Wall	
		Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
		Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)	Allowable lbs (kN)
0.300" Head Drive Pin (0.145" Shank)	1 (25)	35 (0.2)	95 (0.4)	150 (0.7)	155 (0.7)	140 (0.6)	170 (0.8)	45 (0.3)	115 (0.5)

1. Fasteners must not be driven until the masonry has reached the minimum designated compressive strength. Concrete masonry must be minimum 8-inch wide, minimum Grade N, Type II, lightweight, medium-weight or normal-weight units conforming to ASTM C90. Mortar must be minimum Type N complying with ASTM C270. Grout must be coarse grout complying with ASTM C476.
2. The tabulated tension and shevar values are for the fasteners only. Steel or wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. Fasteners installed into the face or end of hollow CMU must have a minimum end distance of 3-3/4 inches. No more than one fastener may be installed in an individual hollow concrete masonry unit cell.
5. For installations into hollow CMU walls, fasteners may not be placed into the mortar joint.
6. Fasteners installed into grout-filled concrete masonry must have a minimum spacing distance of 4 inches and a minimum edge distance 3-3/4 inches.
7. For installations into grout-filled concrete masonry walls, fasteners may be placed into the bed joint (horizontal mortar joint) provided the fasteners have a minimum spacing distance of 8 inches along the bed joint and have a minimum edge distance of 8 inches.
8. Installations directly into the head joint (vertical mortar joint) and within 1-1/2 inch of the head joint is not recommended and must not be permitted.
9. Allowable shear loads may be applied in any direction.
10. Multiple fasteners are recommended for any attachment for increased reliability.
11. Successful fastening into the face shell of hollow CMU and into the horizontal mortar joint is typically conducted with the lowest powder load level.



Wall Face
Permissible Anchor Locations
(Un-hatched Area)

Allowable Load Capacities for Powder Actuated Fasteners in ASTM A36 Steel[1,2,3,5,6]

Fastener Description	Nominal Steel Thickness (inch)									
	1/8		3/16		1/4		3/8		1/2 [4]	
	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
0.300" Head Drive Pin (0.145" Knurled Shank)	220 (1.0)	200 (0.9)	340 (1.5)	610 (2.7)	445 (2.0)	560 (2.5)	520 (2.3)	605 (2.7)	490 (2.2)	575 (2.6)
0.300" Head Drive Pin (0.145" Smooth Shank)	170 (0.8)	265 (1.2)	355 (1.6)	565 (2.5)	410 (1.8)	560 (2.5)	465 (2.1)	390 (1.7)	390 (1.7)	520 (2.3)

1. Fastener capacities are based on the base steel with a minimum yield strength (F_y) of 36 ksi and a minimum ultimate tensile strength (F_u) of 58 ksi. The pointed portion of the fastener must penetrate the steel member unless otherwise noted.
2. The tabulated tension and shear values are for the fasteners only. Steel or wood members connected to the steel substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. The fasteners must be embedded a minimum of 0.50 inch into the steel; fastener point penetration through the steel is not necessary provided the minimum embedment is achieved.
5. Fasteners must have a minimum spacing distance of 1-1/2 inches and a minimum edge distance of 1/2 inch in accordance with ASTM E 1190. Consideration of smaller spacing distances may be given based on application or jobsite testing.
6. Multiple fasteners are recommended for any attachment for increased reliability.

Nominal and Allowable Pull-Over Strengths for Light Gauge Steel Framing with Power-Driven Fasteners[1,2,3]

Fastener Description	Shank Diameter	Minimum Thickness of Steel or Framing Member									
		16 Gauge		18 Gauge		20 Gauge		22 Gauge		25 Gauge	
		Nominal (lbs)	Allowable (lbs)	Nominal (lbs)	Allowable (lbs)	Nominal (lbs)	Allowable (lbs)	Nominal (lbs)	Allowable (lbs)	Nominal (lbs)	Allowable (lbs)
0.300" Head Drive Pin with 7/8" or 1" washer	0.145"	3,120	1,040	2,495	830	1,875	625	1,560	520	1,090	365
0.300" Head Drive Pin	0.145"	1,560	520	1,250	415	935	310	780	260	545	180

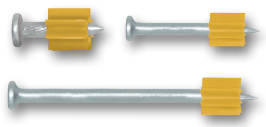
1. Tabulated pull-over strengths were calculated in accordance with ICC-ES AC70 and AISI S100-16. Allowable load values are based on a safety factor of 3.0.
2. Allowable pullover capacities of sheet steel or framing member should be compared to the fastener tensile capacity in concrete, masonry or steel to determine the controlling resistance load.
3. Steel or framing member with tensile strength of 58 ksi assumed for calculating tabulated values.

ORDERING INFORMATION

0.300" Diameter Head Drive Pins

Cat. No.	Shank Length	Shank Diameter	Ctn Qty	Mstr Qty
50012-PWR	1/2" (K)	0.145"	100	5,000
50016-PWR	5/8" (K)	0.145"	100	5,000
50022-PWR	3/4"	0.145"	100	5,000
50023-PWR	3/4" (black)	0.145"	100	5,000
50026-PWR	1"	0.145"	100	5,000
50032-PWR	1-1/4"	0.145"	100	1,000
50034-PWR	1-1/2"	0.145"	100	1,000
50038-PWR	2"	0.145"	100	1,000
50040-PWR	2-1/4"	0.145"	100	1,000
50044-PWR	2-1/2"	0.145"	100	1,000
50048-PWR	3"	0.145"	100	1,000

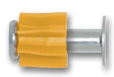
(K) = knurled
Black pins have a black coating instead of zinc plating.



0.300" Diameter Head Drive Pins with Top Hat

Cat. No.	Shank Length	Shank Diameter	Ctn Qty	Mstr Qty
50136-PWR	1/2" (K)	0.145"	100	5,000
50138-PWR	5/8" (K)	0.145"	100	5,000
50140-PWR	3/4"	0.145"	100	5,000
50144-PWR	1"	0.145"	100	5,000

(K) = knurled

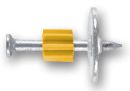


0.300" Diameter Head Drive Pins with 3/4" Washer

Cat. No.	Shank Length	Shank Diameter	Ctn Qty	Mstr Qty
50070-PWR	3/4"	0.145"	100	1,000

0.300" Diameter Head Drive Pins with 7/8" Washer

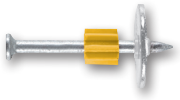
Cat. No.	Shank Length	Shank Diameter	Ctn Qty	Mstr Qty
50090-PWR	1"	0.145"	100	1,000
50092-PWR	1-1/4"	0.145"	100	1,000
50094-PWR	1-1/2"	0.145"	100	1,000
50096-PWR	2"	0.145"	100	1,000
50098-PWR	2-1/2"	0.145"	100	1,000
50100-PWR	3"	0.145"	100	1,000



0.300" Diameter Head Drive Pins with 1" Washer

Cat. No.	Shank Length	Shank Diameter	Ctn Qty	Mstr Qty
50108-PWR	1-1/4"	0.145"	100	1,000
50110-PWR	1-1/2"	0.145"	100	1,000
50112-PWR	2"	0.145"	100	1,000
50114-PWR	2-1/2"	0.145"	100	1,000
50116-PWR	3"	0.145"	100	1,000
50120-PWR*	3"	0.145"	100	1,000

*Square Washer



0.300" Diameter Head Drive Pins (Mechanically Galvanized)

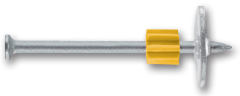
Cat. No.	Shank Length	Shank Dia.	Ctn Qty	Mstr Qty
50034MG-PWR	1-1/2"	0.145"	1,000	5,000
50038MG-PWR	2"	0.145"	1,000	5,000
50045MG-PWR	2-1/2"	0.145"	1,000	5,000
50047MG-PWR	3"	0.145"	1,000	5,000

Mechanically Galvanized (MG) fasteners meet ASTM B695, Class 55. Fasteners are designed for fastening through pressure treated lumber. The fasteners are available with a round washer for increased pullover resistance.

0.300" Diameter Head Drive Pins with 1" Washer (Mechanically Galvanized)

Cat. No.	Shank Length	Shank Dia.	Ctn Qty	Mstr Qty
50110MG-PWR	1-1/2"	0.145"	1,000	5,000
50112MG-PWR	2"	0.145"	1,000	5,000
50113MG-PWR	2-1/2"	0.145"	1,000	5,000
50115MG-PWR	3"	0.145"	1,000	5,000

Mechanically Galvanized (MG) fasteners meet ASTM B695, Class 55. Fasteners are designed for fastening through pressure treated lumber. The fasteners are available with a round washer for increased pullover resistance.



0.300" Diameter Head Drive Pins with 1-7/8" Insulation Washer

Cat. No.	Shank Length	Shank Dia.	Ctn Qty	Mstr Qty
50122-PWR	1-1/2"	0.145"	100	1,000
50126-PWR	2-1/2"	0.145"	100	1,000

0.300" Diameter Head Ballistic Point Drive Pins

Cat. No.	Shank Length	Shank Dia.	Ctn Qty	Mstr Qty
50057-PWR	1-7/8"	0.181/0.150"	100	1,000

Ballistic point pins have a zinc plating.