

**Alcoa  
Fastening  
Systems**



## Magna-Grip®

The Original Wide Grip  
Range Fastener Proven in  
Thousands of Applications.

Vibration resistant  
Flush-breaking  
Easy installation

3/16"-3/8"



# Huck Magna-Grip®

Magna-Grip® fasteners. A unique, lock-groove design ensures a secure installation.



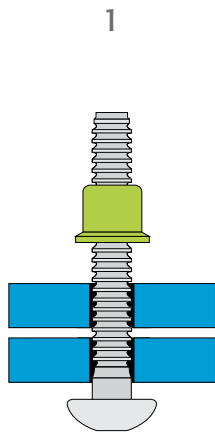
Huck brand Magna-Grip fasteners offer a generous selection of diameters — from 3/16 to 3/8 inch — for light to heavy-duty applications. They break flush, every time, and provide multi-thickness capability thanks to a wide grip range for each diameter. With Magna-Grip fasteners you achieve clean installations across-the-board, for a variety of assembly thicknesses, while stocking less inventory.

In addition to consistent clamp force, shear, and tensile strength, the Huck Magna-Grip ensures absolute vibration resistance with a unique locking-groove design. It simply can't come loose no matter how demanding the application — which reduces rework and warranty claims, providing long-term savings for your company and increased satisfaction for your customers.

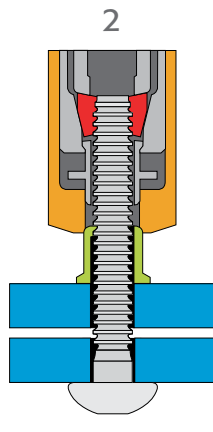
With Magna-Grip fasteners, quality installations do not depend upon the skill of the worker or a correctly calibrated tool. They install in seconds (up to 1,200 per hour) and require no more than a glance to confirm a correct installation: If the core pin is flush with the collar, the Magna-Grip fastener has been properly installed. It's that simple. And the installation process can be mastered in minutes with minimal training.

## Installation Sequence

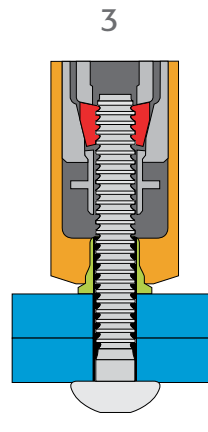
Perfect installations do not depend upon worker skill or a precisely calibrated impact wrench — and can be achieved with just a few minutes training.



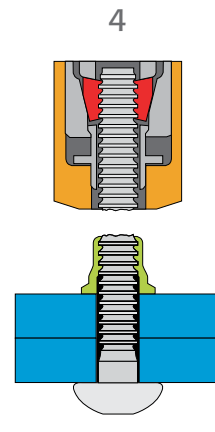
The fastener pin is inserted through a prepared hole. The precision collar is placed over the other end.



The Huck installation tool is applied and engages the pin. When the tool is activated, it pulls the pin in a straight line while pushing down on the collar.

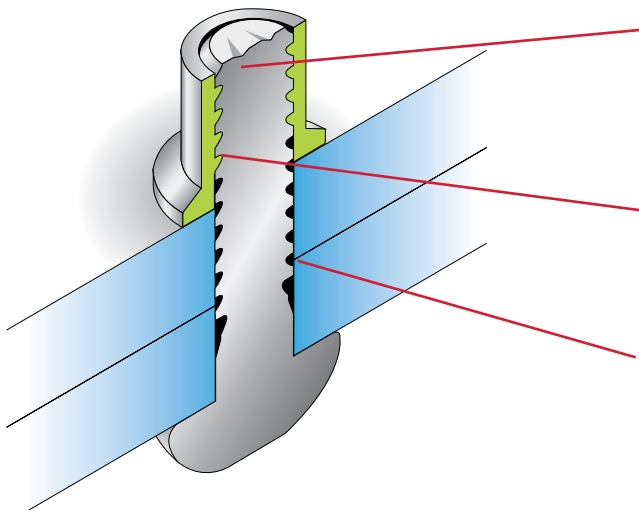


The tool moves forward over the collar, molding the collar material into the grooves of the pin. This process, called "swaging," causes a precise stretching of the pin and collar, developing the fastener's clamping force.



When swaging is complete the pintail is automatically tensioned off, flush with the end of the collar. The tool then pushes off from the collar. The result is a permanent, mechanically locked fastener.

### Secure, fast installation.



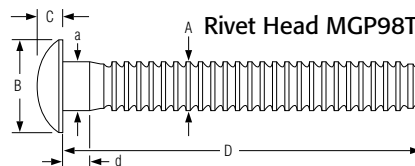
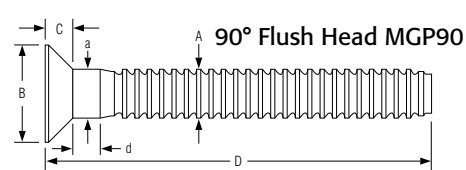
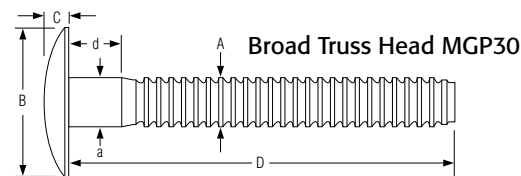
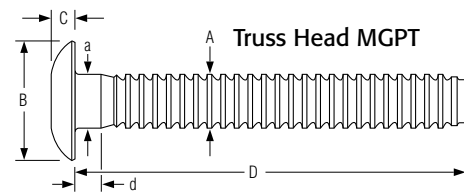
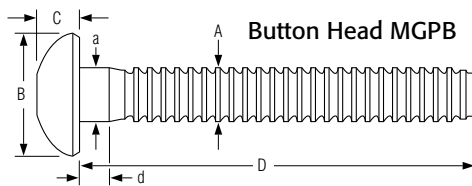
- Flush-breaking, lock-groove design provides a wide grip range to reduce inventory requirements. Easy, consistently accurate installations minimize operator errors and rework costs.
- Collar material swaged into the annular pin grooves forms a permanent, vibration-proof connection that promotes increased customer satisfaction and reduced warranty claims.
- Hole preparation isn't critical. Built-in system values yield high, consistent clamp loads, and gap removal.

## Magna-Grip® benefits

- |                                |                                 |  |
|--------------------------------|---------------------------------|--|
| ■ Unmatched installation speed | ■ Flush-breaking pin            | ■ Eliminates need for secondary operations             |
| ■ Low overall installed cost   | ■ Quiet non-torque tools        | ■ No special training or skills required for operators |
| ■ Vibration resistance         | ■ No repetitive stress injuries |  |

# Data and dimensions

## Head style options



### Button Head dimensions

Diameter	Grip Number	Grip Range	Hole Size max	A ref	B	C	D	a max	d ref
6 (3/16")	10	.062-0.625	.219	.186	.355-.395	.109-.129	1.778-1.828	.192	—
	20	.312-1.250	.219	.186	.355-.395	.109-.129	2.360-2.410	.259	.312
8 (1/4")	10	.062-0.625	.281	.248	.480-.520	.134-.154	1.945-2.085	.259	.125
	20	.312-1.250	.281	.248	.480-.520	.134-.154	2.580-2.680	.259	.312
10 (5/16")	12	.125-0.750	.359	.311	.595-.655	.176-.206	2.330-2.430	.322	*
	22	.625-1.375	.359	.311	.595-.655	.176-.206	2.830-2.930	.322	.550
12 (3/8")	14	.125-0.875	.422	.374	.720-.780	.220-.250	2.865-2.965	.385	.188
	26	.750-1.625	.422	.374	.720-.780	.220-.250	3.490-3.590	.385	.810

*	Steel	—
	Aluminum	.100

### Truss Head dimensions

Diameter	Grip Number	Grip Range	Hole Size max	A ref	B	C	D	a max	d ref
8 (1/4")	10	.062-0.625	.281	.248	.542-.582	.100-.120	1.955-2.055	.259	.125
	20	.312-1.250	.281	.248	.542-.582	.100-.120	2.550-2.650	.259	.312
10 (5/16")	12	.125-0.750	.359	.311	.698-.802	.119-.149	2.330-2.430	.322	**
	22	.625-1.375	.359	.311	.698-.802	.119-.149	2.830-2.930	.322	.550
12 (3/8")	14	.125-0.875	.422	.374	.720-.905	***	2.865-2.965	.385	.188
	26	.750-1.625	.422	.374	.720-.905	***	3.490-3.590	.385	.810

**	Steel	—
	Aluminum	.150-.180

***	Steel	.145-.175
	Aluminum	.180-.210

### Broad Truss Head dimensions

Diameter	Grip Number	Grip Range	Hole Size max	A ref	B	C	D	a max	d ref
8 (1/4")	10	.062-0.625	.281	.248	*	.135-.165	1.955-2.055	.259	.125
	24	.062-1.500	.281	.248	*	.135-.165	2.800-2.900	.259	.562
12 (3/8")	14	.062-1.500	.422	.374	1.179-1.259	.185-.215	3.365-3.465	.385	.680
	26	1.125-2.000	.422	.374	1.179-1.259	.185-.215	3.865-3.965	.385	1.180

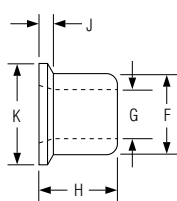
*	Steel	0.898-0.978
	Aluminum	1.023-1.103

## 90° Flush Head dimensions

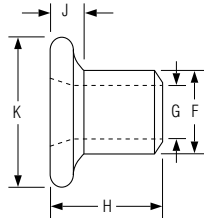
Diameter	Grip Number	Grip Range	Hole Size max	A ref	B	C	D	a max	d ref
6 (3/16")	10	.062-0.625	.219	.186	.321-.361	.090-.105	1.778-1.828	.196	.157
	20	.312-1.250	.219	.186	.321-.361	.075-.090	2.360-2.410	.196	.408
8 (1/4")	10	.062-0.625	.281	.248	.425-.475	.115-.130	1.955-2.055	.259	.210
	20	.312-1.250	.281	.248	.425-.475	.100-.115	2.550-2.650	.259	.422
10 (5/16")	12	.125-0.750	.359	.311	.542-.594	.149-.162	2.330-2.430	.322	.227
	22	.625-1.375	.359	.311	.542-.594	.129-.142	2.830-2.930	.322	.727
12 (3/8")	14	.250-0.875	.422	.374	.652-.712	.171-.201	2.865-2.965	.385	.188
	26	.750-1.625	.422	.374	.652-.712	.146-.176	3.490-3.590	.385	.810

## Rivet Head dimensions

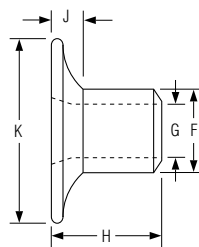
Diameter	Grip Number	Grip Range	Hole Size max	A ref	B	C	D	a max	d ref
6 (3/16")	10	.062-0.625	.219	.186	.448-.488	.088-.108	1.778-1.828	.196	—
	20	.312-1.250	.219	.186	.448-.488	.088-.108	2.360-2.410	.196	.312



Standard Flange MGC



Medium Flange MGCS



Wide Flange MGCW

## Collar Dimensions

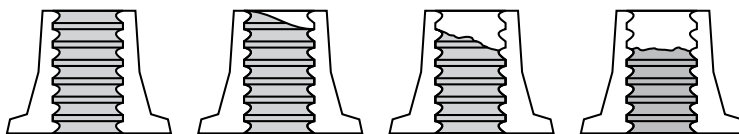
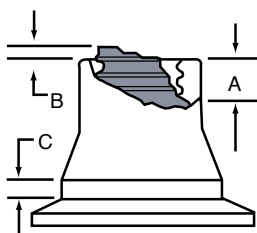
Collar	Diameter	F	G	H	J ref	K
MCG	3/16"	.305-.315	*	.267 - .283	.050	.360 - .390
	1/4"	.395-.405	.250 - .260	.367 - .383	.062	.485 - .515
	5/16"	.500-.510	.312 - .320	.428 - .448	.075	.605 - .645
	3/8"	.602-.612	.375 - .385	.495 - .515	.093	.730 - .770
MCGS	3/16"	.305-.315	*	.297 - .303	.100	.490 - .540
MCCW	3/16"	.305-.315	*	.290 - .320	.100	.635 - .760
	1/4"	.395-.405	.250-.260	.427 - .467	.130	.850 -1.010

*	Steel	.187-.197
	Aluminum	.194-.204

## Installed Values in Nominal Grip (lbs.)

		Aluminum		Steel				Aluminum		Steel	
Diameter		Minimum	Typical	Minimum	Typical	Diameter		Minimum	Typical	Minimum	Typical
3/16"	Shear	750	1000	1725	2000	5/16"	Shear	2200	2700	3000	3900
	Tensile	900	1300	1650	2700		Tensile	2500	4100	4400	6200
	Clamp	550	800	1025	1500		Clamp	1600	2200	2300	2900
1/4"	Shear	1200	1600	2200	2700	3/8"	Shear	3000	3900	4200	6000
	Tensile	1620	2500	2950	4000		Tensile	4000	5500	6000	9000
	Clamp	950	1400	1350	2000		Clamp	2400	3200	3200	4000

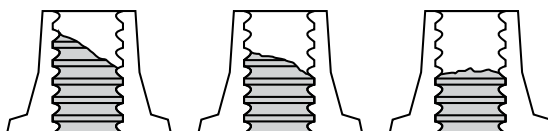
# Huck Magna-Grip® Installation Tooling



Acceptable Features- Substantially flush with end of collar up to a maximum of two lock witness marks within collar.

## Inspection data

Diameter	A max	B max	C max
6 (3/16")	.062	.031	.050
8 (1/4")	.125	.093	.100
10 (5/16")	.187	.140	.100
12 (3/8")	.250	.171	.100



Unacceptable Features- Three witness marks within collar.

## Ordering Information

Follow the tables below to construct part numbers for ordering Magna-Grip pins and collars. Refer to the Grip Data chart for grip numbers.

### Pins

MGP (HEAD STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER) (FINISH)

Example: MGPB-R8-10G is a Magna-Grip fastener, Button Head, Steel, 1/4" Diameter, Grip 10 with a Zinc Finish

Head Style	Prefix
Button Head	B
Truss Head	T
Broad Truss Head	30
Rivet Head	98T
90° Flush Head	90

Material	Code
Steel	R
Aluminum	E

Diameter	Code
3/16"	6
1/4"	8
5/16"	10
3/8"	12

Grip Number
Please refer to the dimensional data chart.

Finish	Code
Zinc	G
Zinc Plating with Zinc Phosphate	GP

### Collars

(FLANGE STYLE) - (MATERIAL) (DIAMETER) (FINISH) (OPTIONS)

Example: MGCW-R8U is a wide Flange Magna-Grip Collar, Steel, 1/4" Diameter, with a Zinc Finish

Flange Style	Prefix
Standard	MGC
Medium	MGCS
Wide	MGCW

Material	Code
Steel	R
Aluminum	F

Diameter	Code
3/16"	6
1/4"	8
5/16"	10
3/8"	12

Finish	Code
Zinc	U

Options	Code
Tab Lock	L

# Huck Magna-Grip® Installation Tooling

## Installation Tools

Pneudraulic Tools						Hydraulic Tools <sup>2</sup>				
Tool Model	Size	2024	2025/ 2025S	255	256	2480/ A2480	2580/ A2580	2600	2620	2620PT
Nose Assembly	3/16"	99-3201	99-3201	99-3206	99-3206	99-3201	99-3206			
	1/4"	99-3204 <sup>1</sup>	99-3204	99-3207	99-3207	99-3204	99-3207			
	5/16"			99-1439	99-1439		99-1439	99-3217		
	3/8"			99-1440 <sup>1</sup>	99-1440		99-1440	99-3220	99-1492	H99-1492

<sup>1</sup>Aluminum Only.

<sup>2</sup>Requires a PowerRig to operate.

Following are rigs that may be used:  
918, 940, 968 and 913H (gas powered).



Model  
255



Model  
256



Model  
2025



Model  
2024



Model  
2620



Model  
2580



Model  
2480

### Tooling weight and dimensions

Model	Type	Weight	Length	Height	Width
2480	hydraulic	2.2 lbs	8.6"	6.5"	1.9"
2580	hydraulic	6.6 lbs	8.4"	6.5"	2.2"
2600	hydraulic	7.3 lbs	9.4"	6.9"	2.65"
2620/2620-PT	hydraulic	9.88 lbs	10.1"	7.0"	2.82"
255	pneudraulic	8.8 lbs	7.1"	14.9"	4.6"
256	pneudraulic	11.1 lbs	7.8"	14.9"	6.1"
2025	pneudraulic	5.75 lbs	8.4"	12.5"	4.4"
2024	pneudraulic	5.75 lbs	8.4"	12.5"	4.4"

## Huck POWERIG Hydraulic Units

Model 918	Model 940	Model 913H (not shown)	Model 968 (not shown) <sup>3</sup>
High-production applications	Portable; production and repair	Portable; production and repair	Portable; production and repair
Operates up to 2 tools; 2 gpm flow rate	70 in <sup>3</sup> /min flow rate	139 in <sup>3</sup> /min flow rate	50 in <sup>3</sup> /min flow rate
Electrically powered; 220, 440, or 550 volts, 3 phase	Electrically powered; 115 or 220 volts, single phase	Gasoline powered	Compressed Air minimum 50 CPM
Weighs 708 lbs, operational	Weighs 75 lbs	Weighs 175 lbs	Weighs 93 lbs, operational
44"L x 25"W x 30"H	12.5"L x 10.5"W x 18"H	24"L x 21"W x 27"H	10.5"L x 16.3"W x 15.7"H

<sup>3</sup>Requires air-triggered tools



Hydraulic POWERIG  
Model 918



Hydraulic POWERIG  
Model 940

# Alcoa Fastening Systems



For more than 120 years, the name Alcoa has been recognized worldwide as a strong leader in product quality and customer support. These strengths are found in every product manufactured for Alcoa Fastening Systems, offering the greatest breadth and depth of fastening system solutions in the industry.

Alcoa Fastening Systems (AFS) maintains company offices in the United States and in many other countries. AFS fastener distributors are also located in many of the world's industrial centers, where they provide a ready source of AFS fasteners, installation tools, tool parts, and application assistance.

## Americas

Industrial Fastener Division  
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Waco, TX 76714-8117, USA  
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Fax: 800 798 4825

Installation Tool Division  
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Tel: 800 278 4825  
Fax: 845 334 7333

AFS Industrial Distribution  
Group Headquarters  
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Tracy, CA 95376, USA  
Tel: 800 826 2884  
Fax: 209 839 3022

AFS Industrial Distribution  
14300 Clay Terrace Blvd.  
Suite 250  
Carmel, IN 46032, USA  
Tel: 800 826 2884  
Fax: 800 573 2645

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