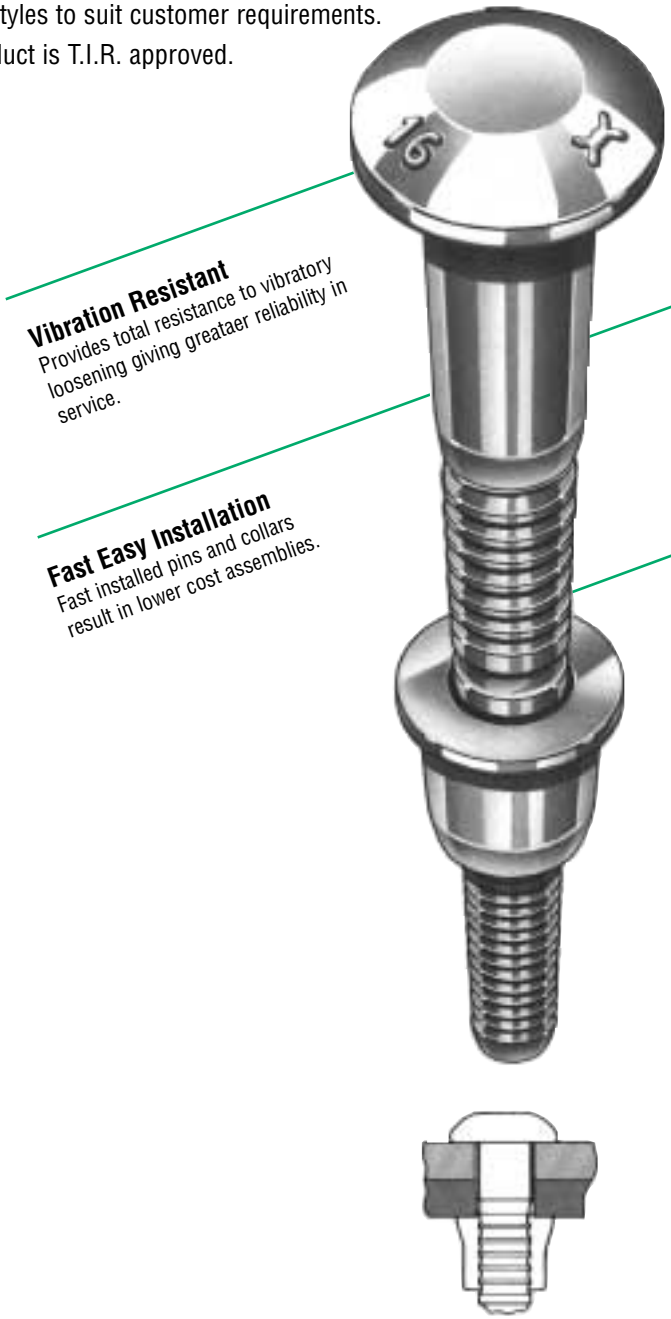
C6L/C120L® Lockbolt
Grade 5.8/8.8

A two piece fastener totally resistant to vibratory loosening, gives high strength and proven performance and reliability. C6L/C120L fasteners are available in diameters 4.8 mm (3/16"), 6.4 mm (1/4"), 7.9 mm (5/16") and 9.5 mm (3/8") with a wide variety of head styles to suit customer requirements. This product is T.I.R. approved.



Vibration Resistant
Provides total resistance to vibratory loosening giving greataer reliability in service.

Maintenance Free
Vibration resistance, high strength and visual inspection remove the need for expensive re-tightening or relacement.

Fast Easy Installation
Fast installed pins and collars result in lower cost assemblies.

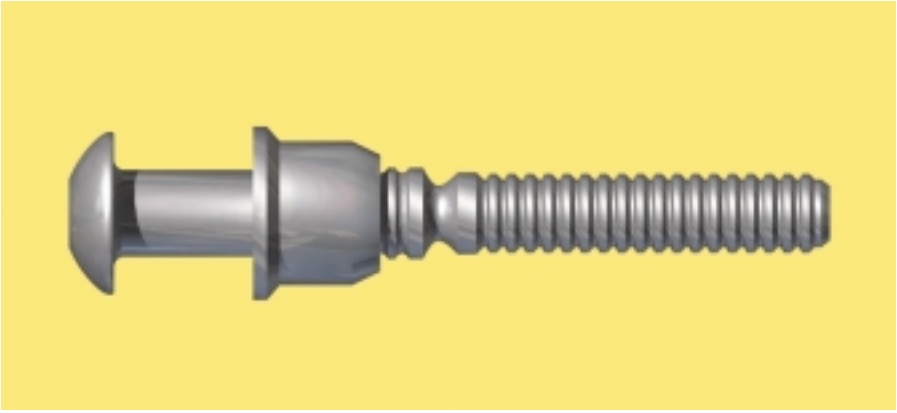
Versatility
Wide grip range, choice of materials and head style to choose from.

APPLICATIONS

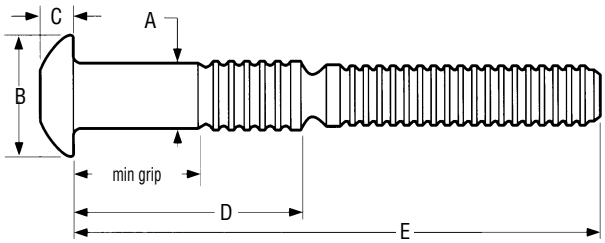
■ **Buses** ■ **truck & trailer** ■ **domestic appliances** ■ **fencing** ■ **automotive**
■ **railway rolling stock** ■ **general sheet metal fabrication**
■ **heating and ventilation** ■ **agricultural**

C6L/C120L® Lockbolt

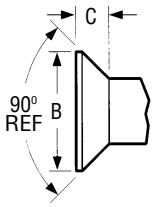
C6L/C120L™ Lockbolt



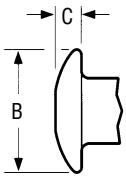
C6LB / C120LB
Brazier Head



C6L90
Countersunk Head



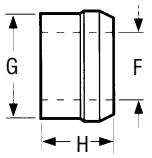
C6LT
Truss Head



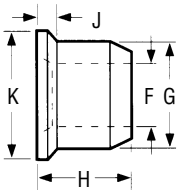
Pin Dimensions

		Brazier Head (B)		Truss Head (T)		Flush Head (90)	
Diameter	A	B	C	B	C	B	C
4.8 mm (3/16")	4.95 - 4.85	10.01 - 9.04	3.18 - 2.87	11.91 - 10.31	2.24 - 1.98	8.99 - 8.33	2.16 - 1.91
6.4 mm (1/4")	6.58 - 6.45	13.34 -12.07	3.86 - 3.45	15.09 - 13.49	2.92 - 2.62	12.01 - 11.10	2.87 - 2.57
7.9 mm (5/16")	8.18 - 8.05	16.66 -15.09	5.11 - 4.60	20.24 - 17.86	3.58 - 3.23	14.96 - 13.89	3.58 - 3.23
9.5 mm (3/8")	9.78 - 9.65	19.99 - 18.11	6.30 - 5.66	23.42 - 21.03	4.27 - 3.86	18.01 - 16.66	4.27 - 3.86

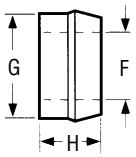
LC/2LC



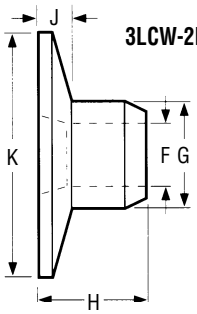
3LC



8LC



3LCW-2R



Collar Dimensions

Collar Type	Part Number	Collar Diameter	F Diameter	G Diameter	H Length	J Dimension	K Diameter
Standard	2LC-R, 2LC-F,	4.8 mm (3/16")	4.75 - 4.98	7.90 - 7.72	6.30 - 5.54		
	LC-I, 2LC-2CU	6.4 mm (1/4")	6.50 - 6.73	10.39 - 10.21	8.13 - 7.37		
		7.9 mm (5/16")	7.72 - 7.92	12.55 - 12.32	9.65 - 8.89		
		9.5 mm (3/8")	9.53 - 9.78	15.24 - 14.99	11.68 - 10.92		
Flange	3LC-2R, 3LC-F,	4.8 mm (3/16")	4.75 - 4.98	7.90 - 7.72	7.11 - 6.35	1.57 - 0.79	9.93 - 9.12
	3LC-I, 3LC-2CU	6.4 mm (1/4")	6.50 - 6.78	10.39 - 10.21	9.63 - 8.86	1.98 - 1.19	13.11 - 12.29
		7.9 mm (5/16")	7.72 - 7.92	12.88 - 12.65	10.82 - 10.01	2.39 - 1.57	16.28 - 15.47
		9.5 mm (3/8")	9.60 - 9.91	15.49 - 15.21	13.51 - 12.75	2.79 - 1.98	19.84 - 18.26
Low Profile	8LC-2R-8LC-F,	4.8 mm (3/16")	4.75 - 4.98	7.90 - 7.72	4.11 - 3.35	2.39	
	8LC-I, 8LC-2CU	6.4 mm (1/4")	6.50 - 6.73	10.39 - 10.21	5.13 - 4.37	3.18	
		7.9 mm (5/16")	7.72 - 7.92	12.55 - 12.32	6.48 - 5.72	3.18	
		9.5 mm (3/8")	9.53 - 9.78	15.24 - 14.99	7.70 - 9.47	3.96	
Wide Flange	3LCW-2R6	4.8 mm (3/16")	4.75 - 4.98	7.90 - 7.72	9.30 - 7.65	3.05 - 1.88	19.61 - 16.21
	3LCW-2R8	6.4 mm (1/4")	6.91 - 7.90	10.39 - 10.21	12.19 - 10.41	3.96 - 2.67	25.96 - 21.67

1 When using 3LC or 3LCW-2R collars, add "J" dimension to thickness of material being fastened to determine grip number.
2 When using 8LC collars, subtract "J" dimension from thickness of material being fastened to determine grip number.
3 Use collars and pins together as shown in "Values" tables, or contact Huck.

C6L/C120L® Lockbolt

C6L/C120L® Lockbolt

Grip[1] Data and Dimensions

Grip No.	Grip Range Min	Max	4.8mm (3/16") Diameter $D_{\pm 0.8mm\ 1/32"}$	4.8mm (3/16") Diameter $E_{+3.2mm\ 1/8",-0}$	6.4mm (1/4") Diameter $D_{\pm 0.8mm\ 1/32"}$	6.4mm (1/4") Diameter $E_{+3.2mm\ 1/8",-0}$
2[2]	1.59	4.76	10.01	34.93	12.32	38.10
3	3.18	6.35	11.61	36.51	13.92	39.69
4	4.76	7.94	13.18	38.10	15.49	41.28
5	6.35	9.53	14.78	39.69	17.09	42.86
6	7.94	11.11	16.36	41.28	18.67	44.45
7	9.53	12.70	17.96	42.86	20.27	46.04
8	11.11	14.29	19.53	44.45	21.84	47.63
9	12.70	15.88	21.13	46.04	23.44	49.21
10	14.29	17.46	22.71	47.63	25.02	50.80
11	15.88	19.05	24.31	49.21	26.62	52.39
12	17.46	20.64	25.88	50.80	28.19	53.98
13	19.05	22.23	27.48	52.39	29.79	55.56
14	20.64	23.81	29.06	53.98	31.37	57.15
15	22.23	25.40	30.66	55.56	32.97	58.74
16	23.81	26.99	32.23	57.15	34.54	60.33
17	25.40	28.58	33.83	58.74	36.14	61.91
18	26.99	30.16	35.41	60.33	37.03	63.50
19	28.58	31.75	37.01	61.91	39.32	65.09
20	30.16	33.34	38.58	63.50	40.89	66.68
21	31.75	34.93	40.18	65.09	42.49	68.26
22	33.34	36.51	41.76	66.68	44.07	69.85
23	34.93	38.10	43.36	68.26	45.67	71.44
24	36.51	39.69	44.93	69.85	47.24	73.03
25	38.10	41.28	46.53	71.44	48.84	74.61
26	39.69	42.86	48.11	73.03	50.42	76.20
27	41.28	44.45	49.71	74.61	26.62	77.79
28	42.86	46.04	51.28	76.20	53.39	79.38
29	44.45	47.63	52.88	77.79	55.19	80.96
30	46.04	49.21	54.46	79.38	56.77	82.55
31	47.63	50.80	56.06	80.96	58.37	84.14
32	49.21	52.39	57.63	82.55	59.94	85.73

Grip No.	Grip Range Min	Max	7.9mm (5/16") Diameter $D_{\pm 0.8mm\ 1/32"}$	7.9mm (5/16") Diameter $E_{+3.2mm\ 1/8",-0}$	9.5mm (3/8") Diameter $D_{\pm 0.8mm\ 1/32"}$	9.5mm (3/8") Diameter $E_{+3.2mm\ 1/8",-0}$
4[2]	3.18	9.53	19.02	48.42	20.55	53.98
6	6.35	12.70	22.20	51.59	23.72	57.15
8	9.53	15.88	25.37	54.77	26.90	60.33
10	12.70	19.05	28.55	57.94	30.07	63.50
12	15.88	22.23	31.72	61.12	33.25	66.68
14	19.05	25.40	34.90	64.29	36.42	69.85
16	22.23	28.58	38.07	67.47	39.60	73.03
18	25.40	31.75	41.25	70.64	42.77	76.20
20	28.58	34.93	44.42	73.82	45.95	79.38
22	31.75	38.10	47.60	76.99	49.12	82.55
24	34.93	41.28	50.77	80.17	52.30	85.73
26	38.10	44.45	53.95	83.34	55.47	88.90
28	41.28	47.63	57.12	86.52	58.65	92.08
30	44.45	50.80	60.30	89.69	61.82	95.25
32	47.63	53.98	63.48	92.87	65.00	98.43

1 "Grip" is actual thickness of material to be fastened - contact Huck for grips not shown.
2 C6L90 is not available in grip 2 for 4.8mm (3/16") and 6.4mm (1/4") diameters and grip 4 for 9.5mm (3/8") diameter.

C6L LOCKBOLT Fastener Values[1] - Grade 5.8

	Carbon Steel (R) Pins 2LC-R or 3LC-2R Collars			2024 Aluminium (C) Pins 2LC-F or 3LC-F Collars			6061 Aluminium (F) Pins LC-I or 3LC-I Collars			CRES (U) Pins 2LC-2CU or 3LC-2CU Collars		
Dia.	**Shear**	**Clamp**	**Tensile**	**Shear**	**Clamp**	**Tensile**	**Shear**	**Clamp**	**Tensile**	**Shear**	**Clamp**	**Tensile**
4.8 mm (3/16")	7670	4560	7340	4670	2450	4450	3450	1560	2360	8900	4560	6470
6.4 mm (1/4")	13570	8030	13340	8340	4230	8010	6120	2760	4340	15790	8030	16680
7.9 mm (5/16")	21020	12500	20460	13010	6670	12680	9450	4290	6890	24580	12500	18900
9.5 mm (3/8")	30360	17880	28910	18680	9790	18680	13570	6140	10680	35360	17880	27130

C120L LOCKBOLT Fastener Values[1] - Grade 8.8

	Carbon Steel (R) Pins 2LC120-R or 3LC120-2R Collars		
Dia	**Shear**	**Clamp**	**Tensile**
4.8 mm (3/16")	10810	5340	9790
6.4 mm (1/4")	19310	10230	16460
7.9 mm (5/16")	29800	18680	26690
9.5 mm (3/8")	42700	26600	41370

Hole Preparation Data

Diameter	Clearance Fit Diameter Maximum	Interference Fit Diameter Minimum	Maximum
4.8 mm (3/16")	5.16	4.75	4.85
6.4 mm (1/4")	6.75	6.35	6.45
7.9 mm (5/16")	8.33	7.92	8.05
9.5 mm (3/8")	9.92	9.53	9.65

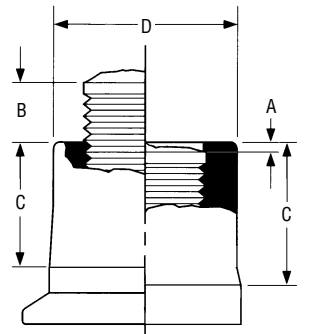
[1] Minimum Value, in N, of installed fasteners. Meets requirements of MIL-P-23469 except in 2024 Aluminium (C) - Plated pins may result in reduced tensile values up to 15%.

Materials and Finishes

	Material	Finish
Pin	**Carbon Steel (R)**	None (Plain Black)
	2024 Aluminium Alloy (C)	Anodize per MIL-A-8625 / chemical surface treatment MIL-C-5541 (Manufacturer's option)
	6061 Aluminium Alloy (F)	None
	Stainless Steel (U)	None
Collar	**Low Carbon Steel (R) or (2R)**	Zinc plated, Wax Film Lubricated
	5062 Aluminium Alloy - Heat treated (F)	None, Wax Film Lubricated
	6061 Aluminium Alloy (I)	None, Wax Film Lubricated
	Stainless Steel (U)	None, Wax Film Lubricated

Inspection Data

A properly installed HUCKBOLT Fastener will possess the dimensional characteristics shown in the chart. Should the dimensions “A” or “B” exceed the indicated values, the fastener is being used out-of-grip. A “C” dimension less than the values specified is an indication of incomplete swage. A “D” dimension exceeding the specified values is an indication of an incorrect or worn anvil on the installation tool.
Because of design margin built into the fastener and peculiar field installation conditions, failure of an installed fastener to meet the specified dimensional criteria is not necessarily an indication of an improperly installed assembly. Conversely, a Huckbolt pin installed in a properly prepared hole with the recommended single cycle driving tool, which swages the lock collar material into the locking grooves of the pin and breaks off the pintail at the breakneck groove, will always possess at least the minimum guaranteed strength characteristics when the dimensional limits specified are met.



3LC flanged collars | 2LC no flange on collar

Nominal Size	A Max grip	B Min Grip	C Min	D Dia Max
4.8 mm (3/16")	1.98	3.18	4.37	7.01
6.4 mm (1/4")	1.98	3.97	6.35	9.25
7.9 mm (5/16")	1.98	7.14	7.14	11.53
9.5 mm (3/8")	3.18	7.14	8.73	14.02

C120L LOCKBOLT Pins

Follow the form below to construct a part number for ordering C120L pins. Refer to the Grip Data Chart for grip numbers.

C120L (STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER) (FINISH)

Example: **C120LT-R8-4G** is a C120L Huckbolt Pin, Truss Head, Carbon Steel, 1/4" Diameter, Grip 4, Zinc Finish

Style		Material		Diameter		Finish	
Truss Head	T	Carbon Steel	R	4.76 mm (3/16")	6	Zinc Clear Chromate	G
Brazier Head	B			6.35 mm (1/4")	8		
Countersunk Head	90			7.94 mm (5/16")	10		
				9.53 mm (3/8")	12		

C6L LOCKBOLT Pins

Follow the form below to construct a part number for ordering C6L pins. Refer to the Grip Data Chart for grip numbers.

C6L (STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER) (FINISH)

Example: **C6LT-R8-4G** is a C6L Huckbolt Pin, Truss Head, Carbon Steel, 6.4mm Diameter, Grip 4, Zinc Finish.

Style		Material		Diameter		Finish	
Truss Head	T	Carbon Steel	R	4.76 mm (3/16")	6	Zinc Clear Chromate	G
Brazier Head	B	2024 Alum Alloy	C	6.35 mm (1/4")	8		
Countersunk Head	90	6061 Alum Alloy	F	7.94 mm (5/16")	10		
		Stainless Steel	U	9.53 mm (3/8")	12		

C120L LOCKBOLT Collars

Follow the form below to construct a part number for ordering C120L collars.

(TYPE) LC120 - (MATERIAL) (DIAMETER) (FINISH)

Example: 2LC120-R8G is a Standard C120L Huckbolt Collar, Low Carbon Steel, 6.4mm Diameter, Zinc Finish.

Type		Material		Diameter		Finish	
Standard	2	Low Carbon Steel(standard collar)	R	4.8 mm (3/16")	6	Zinc Clear Chromate	G
Flange	3	Low Carbon Steel(flanged collar)	2R	6.4 mm (1/4")	8		
				7.9 mm (5/16")	10		
				9.5 mm (3/8")	12		

C6L LOCKBOLT Collars

Follow the form below to construct a part number for ordering C6L collars.

(TYPE) LC - (MATERIAL) (DIAMETER) (FINISH)

Example: 2LC-R8G is a Standard C60L Huckbolt Collar, Low Carbon Steel, 6.4mm Diameter, Zinc Finish.

Type		Material		Diameter		Finish	
Standard	2	Low Carbon Steel(standard collar)	R	4.8 mm (3/16")	6	Zinc Clear Chromate	G
Flange	3	Low Carbon Steel(flanged collar)	2R	6.4 mm (1/4")	8		
		6061 Alum Alloy Heat Treated	F	7.9 mm (5/16")	10		
		6061 Alum Alloy	I	9.5 mm (3/8")	12		
		Stainless Steel	CU				

C6L/120™ Installation Tooling

Huck Installation Tools

Huck installation tools consist of a nose assembly and a tool. The choice of tool and nose assembly is determined by the fastener diameter and application. Tools and nose assemblies are easily changed as installation requirements demand,

Huck offers pneumatic and hydraulic installation tools. Pneumatic tools operate on 6.2-6.9 bar (90-100 psi) air pressure. The lighter weight hydraulic tools operate on hydraulic power supplied by a Huck POWERIG® Hydraulic Unit.

FIG 1

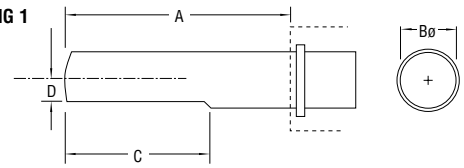
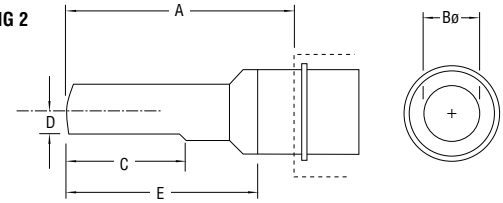


FIG 2



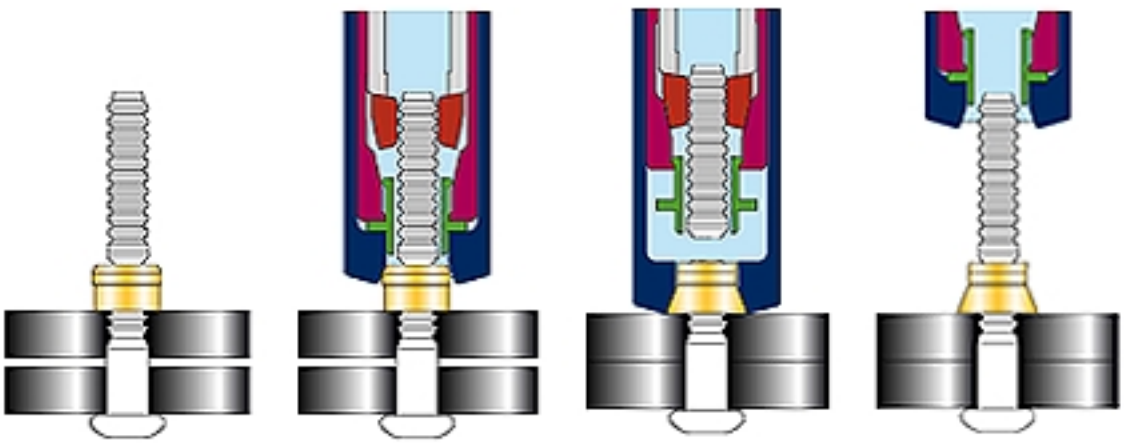
Code	Diameter	Nose Ass.	Fig.	A mm	B mm	C mm	D mm	E mm	Pneumatic Tooling	Hydraulic Tooling
6	4.8 mm (3/16")	99-2558[3]	2	58.3	17.9	43.8	8.0	43.8	245 / 246 / **255** / **256**	**2503** / **2580**
		99-3003[2]	1	48.7	19.1	-	-	-	2025 / 2025V / **LH-224**	2480
		99-3003L[2]	1	48.7	19.1	-	-	-	**2025L**	**2480L**
		99-3004[2]	1	150.3	19.1	-	-	-	2025 / 2025V / **LH-224**	2480
8	6.4 mm (1/4")	99-2564[3]	2	58.1	19.3	43.6	8.6	43.6	245 / 246 / **255** / **256**	**2503** / **2580**
		99-3006[2]	1	50.1	19.1	-	-	-	2025 / 2025V / **LH-224**	2480
		99-3006L[2]	1	50.1	19.1	-	-	-	**2025L**	**2480L**
		99-3007[2]	1	152.6	19.1	-	-	-	2025 / 2025V / **LH-224**	2480
10	7.9 mm (5/16")	**99-99-245**[5]	1	70.7	26.9	53.3	12.2	-	245 / 246 / **255** / **256**	**2503** / **2580**
12	9.5 mm (3/8")	**99-100-245**[4]	1	69.8	26.9	53.3	12.2	-	245 / 246 / **255** / **256**	**2503** / **2580**

Items in **bold** are part of our FOCUS Tooling Range

Note: Other tool and nose assembly combinations may be available for specific applications. Please contact Huck for details.

1 Self releasing, rotatable.
2 Non-self releasing, self ejecting Anvil. Cannot be used to install C120L fasteners or 8LC Collars.
3 Non-self releasing, rotatable.
4 Non-self releasing.
5 Non-self releasing, heavy duty.
6 C6L aluminium and C6L carbon steel pins and collars only.

Installation Sequence



Click Here to view animation of installation sequence

Installation Tooling

UNI-BIS Sp. z o.o.
Dystrybutor
ul. Osiedle Leśne 1a
84-300 Lębork, Polska
tel/fax: +48 59 8631417
e-mail: biuro@uni-bis.com
www.uni-bis.com