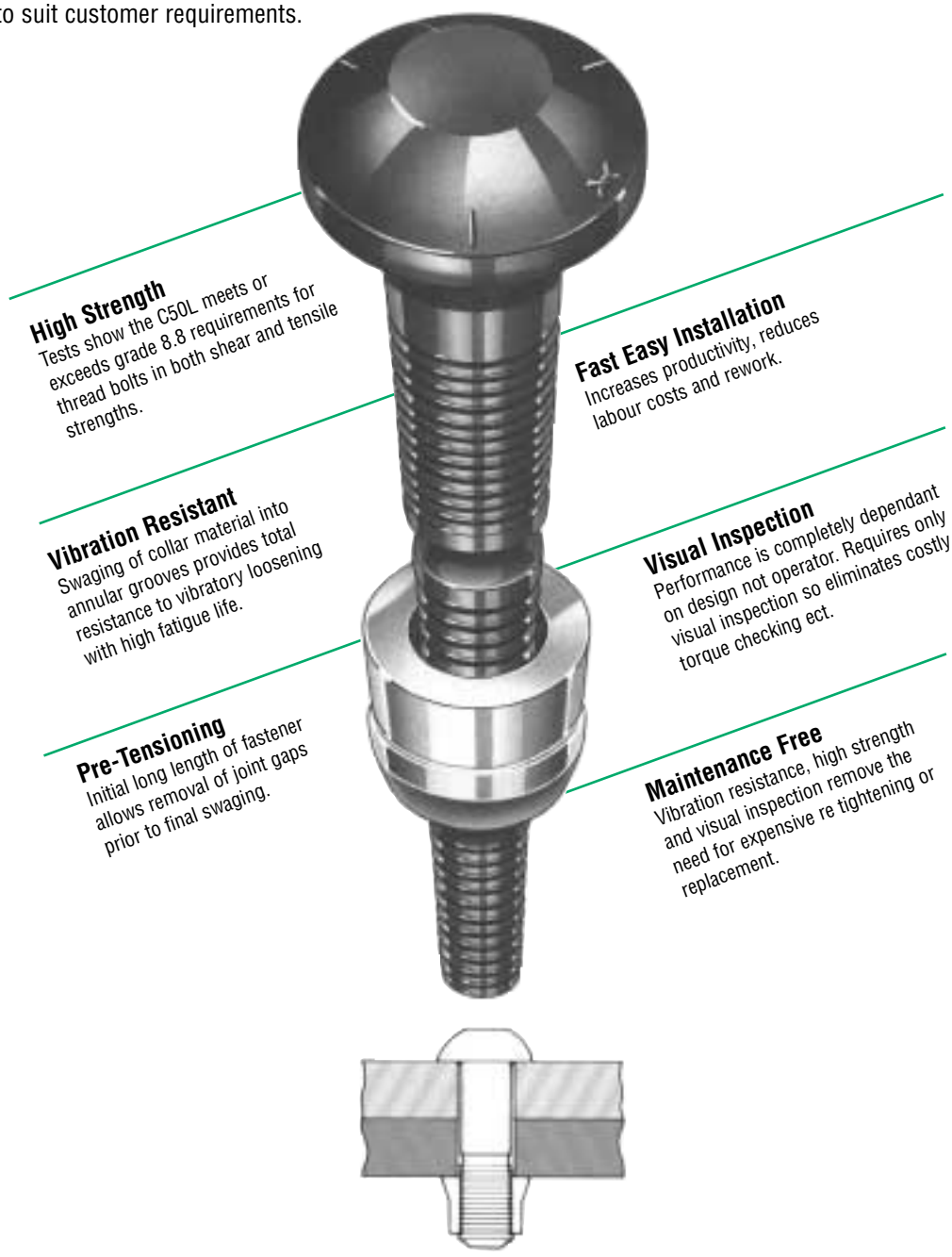
C50L™ Lockbolt

A heavy duty, 2 piece fastener, totally resistant to vibratory loosening, with high strength and proven performance and reliability. The C50L is a grade 8.8 general purpose fastener available in diameters from 1/2" to 1.1/8" with a wide variety of head styles and finishes to suit customer requirements.



High Strength
Tests show the C50L meets or exceeds grade 8.8 requirements for thread bolts in both shear and tensile strengths.

Fast Easy Installation
Increases productivity, reduces labour costs and rework.

Vibration Resistant
Swaging of collar material into annular grooves provides total resistance to vibratory loosening with high fatigue life.

Visual Inspection
Performance is completely dependant on design not operator. Requires only visual inspection so eliminates costly torque checking ect.

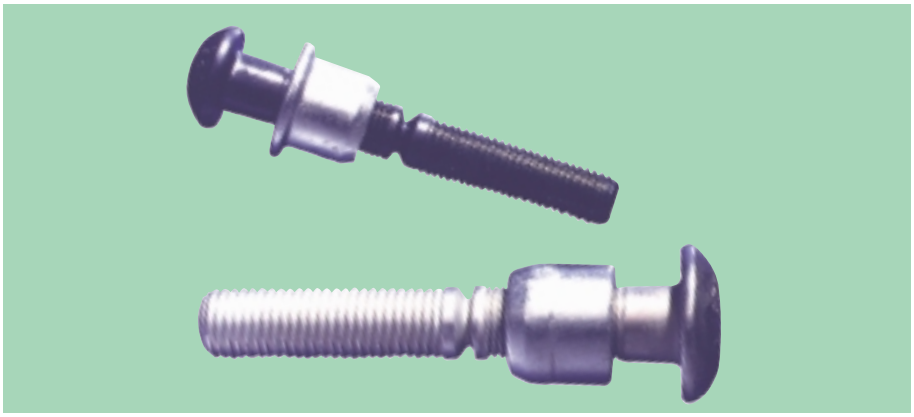
Pre-Tensioning
Initial long length of fastener allows removal of joint gaps prior to final swaging.

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

APPLICATIONS

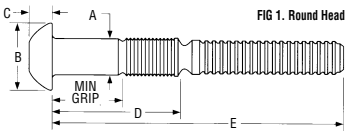
■ **Costruction** ■ **Mining Equipment** ■ **Bridge Building** ■ **Rail Track Assembly**
■ **Quarry Plant and Machinery** ■ **Railcar and Waggon Construction**
■ **Truck and Trailer Chassis** ■ **Ball and Rod Mills** ■ **Etc**

C50L™ Lockbolt



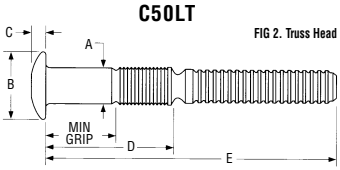
C50LR

FIG 1. Round Head



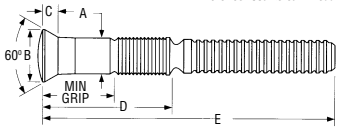
C50LT

FIG 2. Truss Head



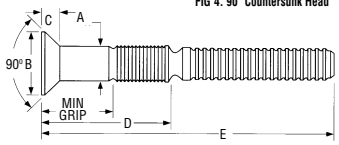
C50L60

FIG 3. 60° Countersunk Head



C50L90

FIG 4. 90° Countersunk Head



Fastener Dimensions

Dia.	Fig. 1 A	Fig. 1 B	Fig. 1 C	Fig. 2 B	Fig. 2 C	Fig. 3 B	Fig. 3 C	Fig. 4 B	Fig. 4 C
12.7 mm (1/2")	13.08 - 12.52	23.42	7.94	23.42	5.95	19.84	5.95	23.02	6.35
15.9 mm (5/8")	16.31 - 15.67	28.97	9.92	28.97	7.54	24.61	7.14	29.37	7.94
19.1 mm (3/4")	19.51 - 18.82	34.93	11.91	34.93	9.13	29.37	8.73	34.93	9.53
22.2 mm (7/8")	22.73 - 22.00	40.48	13.89	40.48	10.32	34.13	10.32	40.48	11.11
25.4 mm (1")	25.96 - 25.15	46.43	15.48	46.43	11.91	38.89	11.91	46.83	12.70
28.6 mm (1.1/8")	29.18 - 27.89	52.39	17.46						

Installed Fastener Values[1]

Dia.	Carbon Steel Pins LC-2R or 3LC-2R Collars Shear	Clamp	Tensile	2024 Aluminium Pins LC-F or 3LC-F Collars Shear	Clamp	Tensile	6061 Aluminium Pins LC-1 or 3LC-1 Collars Shear	Clamp	Tensile	Stainless Steel Pins LC-2CU or 3LC-2CU Collars Shear	Clamp	Tensile
12.7 mm (1/2")	64050	53600	75840	32470	26240	34920	23580	19570	21800	61830	53600	75840
15.9 mm (5/8")	100080	85410	120550	50710	40920	54710	36920	30690	34120	93410	85410	120550
19.1 mm (3/4")	144120	126330	178370	72950	59160	78730	52930	44260	49110	134780	126330	178370
22.2 mm (7/8")	193050	174590	246650									
25.4 mm (1")	251320	229080	323390									
28.6 mm (1.1/8")	309150	260000	368980									

1 Minimum values, in N, of installed fasteners. Round head, in carbon steel equivalent to ASTM A325 high strength bolts. Meets requirements of MIL-P-23469.

Grip Data and Dimensions

Grip is the actual thickness of material to be fastened. Grip includes 'C' dimension on 90° countersunk head and 60° watertight fasteners. Grips listed are not necessarily available in every head style. Contact Huck for grips not shown.

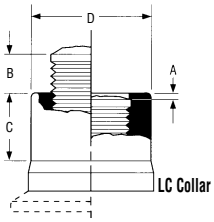
Tolerances: Dimension D ±0.8, Dimension E + 4.8, -1.6

Grip	Grip Range min - max	12.70mm (1/2") Dia. D	12.70mm (1/2") Dia. E	15.88m 8") Dia. D	19.05mm (3/4") Dia. E	22.23mm (7/8") Dia. D	22.23mm (7/8") Dia. E	25.40mm (1") Dia. D	25.40mm (1") Dia. E	28.58mm (1⅛") Dia. D	28.58mm (1⅛") Dia. E	D	E
4	6.35 - 12.70	30.81	80.57	36.40	92.87	38.56	105.57						
8	12.70 - 19.05	37.16	86.92	42.75	99.22	44.91	111.92	48.79	119.06	52.65	136.53		
12	19.05 - 25.40	43.51	93.27	49.10	105.57	51.26	118.27	55.14	125.41	59.00	142.88		
16	25.40 - 31.75	49.86	99.62	55.45	111.92	57.61	124.62	61.49	131.76	65.35	149.23		
20	31.75 - 38.10	56.21	105.97	61.80	118.27	63.96	130.97	67.84	138.11	71.70	155.58		
24	38.10 - 44.45	62.56	112.32	68.15	124.62	70.31	137.32	74.19	144.46	78.05	161.93		
28	44.45 - 50.80	68.91	118.67	74.50	130.97	76.66	143.67	80.54	150.81	84.40	168.28		
32	50.80 - 57.15	75.26	125.02	80.85	137.32	83.01	150.02	86.89	157.16	90.75	174.63		
36	57.15 - 63.50	81.61	131.37	87.20	143.67	89.36	156.37	93.24	163.51	97.10	180.98		
40	63.50 - 69.85	87.96	137.72	93.55	150.02	95.71	162.72	99.59	169.86	103.45	187.33		
44	69.85 - 76.20	94.31	144.07	99.90	156.37	102.06	169.07	105.94	176.21	109.80	193.68		
48	76.20 - 82.55	100.66	150.42	106.25	162.72	108.41	175.42	112.29	182.56	116.15	200.03		
52	82.55 - 88.90	107.01	156.77	112.60	169.07	114.76	181.77	118.64	188.91	122.50	206.38		
56	88.90 - 95.25	113.36	163.12	118.95	175.42	121.11	188.12	124.99	195.26	128.85	212.73	133.35	217.49
60	95.25 - 101.6	119.71	169.47	125.30	181.77	127.46	194.47	131.34	201.61	135.20	219.08	139.70	223.84
64	101.60 - 107.95	126.06	175.82	131.65	188.12	133.81	200.82	137.69	207.96	141.55	225.43	146.05	230.19
68	107.95 - 114.30	132.41	182.17	138.00	194.47	140.16	207.17	144.04	214.31	147.90	231.78	152.40	236.54
72	114.30 - 120.65	138.76	188.52	144.35	200.82	146.51	213.52	150.39	220.66	154.25	238.13	158.75	242.24
76	120.65 - 127.00	145.11	194.87	150.70	207.17	152.86	219.87			160.66	244.48	165.10	249.24
80	127.00 - 133.35	151.46	201.22							166.95	250.83	171.45	255.94
84	133.35 - 139.70									173.30	257.18	177.80	261.94
88	139.70 - 146.05									179.65	263.53	184.15	268.29
92	146.05 - 152.40									186.00	269.88	190.50	274.64

C50L™ Lockbolt

Inspection Data

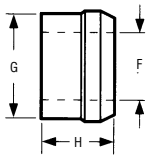
A properly installed C50L fastener will possess the dimensional characteristics tabulated below. Should the dimensions 'A' or 'B' exceed the indicated values, the fastener is being used out-of-grip. A 'C' dimension less the values specified is an indication of incomplete swage. A 'D" dimension exceeding the tabulated values is an indication of an incorrect or worn anvil on the installation tool. The 'A' dimension can be increased to 3.2 mm (1/8") and still meet all published values, provided there is no requirement to meet ASTM specifications pertaining to locking grooves (threads) in the shear plane.



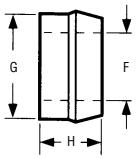
3LC flanged collars

Dia.	Pin Part No.	Collar Type LC	Collar Type 3LC	A max	B max	C min	D max
12.7 mm (1/2")	C50L()-()16	LC-2()16G	3LC-2()16G	1.59	9.53	10.32	18.62
15.9 mm (5/8")	C50L()-()20	LC-2()20G	3LC-2()20G	1.59	9.53	15.88	23.27
19.1 mm (3/4")	C50L()-()24	LC-2()24G	3LC-2()24G	1.59	9.53	16.67	28.19
22.2 mm (7/8")	C50L()-()28	LC-2()28G	3LC-2()28G	1.59	9.53	19.05	32.56
25.4 mm (1")	C50L()-()32	LC-2()32G	3LC-2()32G	1.59	9.53	22.23	37.21
28.6 mm (1.1/8")	C50L()-BR36	LC-2()36G		1.59	9.53	23.02	41.81

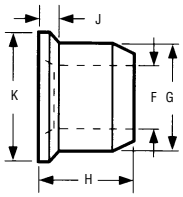
Standard Collar - LC



Low Profile Collar - 8LC



Flanged Collar - 3LC

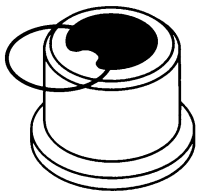


Collar Dimensions

Collar	Diameter	F	G	H	J	K
LC	12.7 mm (1/2")	13.08 - 13.72	20.32 - 19.43	16.38 - 15.49		
	15.9 mm (5/8")	16.51 - 16.89	25.65 - 24.64	22.23 - 21.43		
	19.1 mm (3/4")	19.69 - 20.07	29.97 - 29.59	24.38 - 23.62		
	22.2 mm (7/8")	23.11 - 23.75	34.93 - 34.16	28.72 - 27.51		
	25.4 mm (1")	26.04 - 26.67	40.01 - 38.99	32.39 - 31.24		
	28.6 mm (1.1/8")	29.21 - 29.97	44.96 - 44.20	36.20 - 35.18		
3LC[1]	12.7 mm (1/2")	13.08 - 13.59	20.50 - 20.14	18.95 - 18.19	3.96 - 2.39	26.19 - 24.61
	15.9 mm (5/8")	16.51 - 16.89	25.65 - 24.64	24.36 - 23.60	4.75 - 3.18	32.54 - 30.94
	19.1 mm (3/4")	19.69 - 20.07	30.48 - 29.72	29.13 - 28.37	5.54 - 3.96	38.89 - 37.29
	22.2 mm (7/8")	23.11 - 23.62	34.93 - 34.54	33.78 - 33.02	6.35 - 4.75	41.28 - 39.67
	25.4 mm (1")	26.16 - 26.67	40.01 - 39.37	38.48 - 37.72	7.14 - 5.54	48.41 - 46.81
	28.6 mm (1.1/8")	29.21 - 29.97	44.96 - 44.20	43.18 - 42.42	7.92 - 6.35	54.76 - 53.16
8LC[2]	12.7 mm (1/2")	13.08 - 13.59	20.32 - 19.69	12.70 - 11.94	3.56	
	15.9 mm (5/8")	16.51 - 16.89	25.65 - 24.64	17.78 - 17.02	4.57	
	19.1 mm (3/4")	19.69 - 20.07	29.97 - 29.59	18.92 - 18.16	5.46	
	22.2 mm (7/8")	23.11 - 23.62	34.93 - 34.54	21.92 - 21.16	6.35	
	25.4 mm (1")	26.16 - 26.67	40.01 - 39.37	24.89 - 24.13	7.24	

Hole Data[4]

Dia.	Maximum Hole
12.7 mm (1/2")	14.29
15.9 mm (5/8")	17.46
19.1 mm (3/4")	20.64
22.2 mm (7/8")	23.81
25.4 mm (1")	26.99
28.6 mm (1.1/8")	30.16



TAB-LOK ™

The Tab-Lok feature makes sure the collar stays on the pin, before installation, in overhead and down slanted pin placements. To order Tab-Lok collars refer to 'Option' in the 'How to Order' section of this brochure.

1 When using 3LC collars, include J dimension in grip dimension to determine grip number.
2 Optional collar at reduced clamping force and tensile strength. Contact Huck for data. When using 8LC collars, subtract J dimension from grip dimension to determine grip number.
3 H length for 15.88mm (5/8") diameter in F, I or 2CU material is 20.45 - 19.56.
4 Except C50L60, refer to Mil-Spec MIL-P-23469.

How to Order

C50L Pins

Follow the form below to construct a part number for ordering C50L pins. Refer to the Grip Data chart for grip numbers.
C50L (HEAD STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER)
Example: **C50LR-BR16-4** is a C50L Huckbolt fastener, Round Head, Carbon Steel, 12.7mm (1/2") Diameter, Grip 4.

Head Style		Material		Diameter		Grip
Round	**R**	Carbon Steel	**BR**	12.7 mm (1/2")	**16**	Refer to Grip Data Chart
Truss	**T**	2024 Aluminium	**C**	15.9 mm (5/8")	**20**	
90° Countersunk	**90**	6061 Aluminium	**F**	19.1 mm (3/4")	**24**	
60° Countersunk	**60**	Stainless Steel	**U**	22.2 mm (7/8")	**28**	
				25.4 mm (1")	**32**	
				28.6 mm (1.1/8")	**36**	

Stainless Steel fasteners are available in 12.70mm to 19.05mm diameter and 36 grips only.

C50L Collars

Follow the form below to construct a part number for ordering collars for C50L pins.
(COLLAR STYLE) - (MATERIAL) (DIAMETER) (FINISH) (OPTIONS)
Example: **LC-2R16G** is a Standard Collar, Low Carbon Steel, 12.70mm (1/2") Diameter, Zinc Finish

Collar Style		Material		Diameter		Finishes		Options	
Standard	**LC**	Low Carbon Steel	**2R**	12.7 mm (1/2")	**16**	Zinc Clear Chromate	**G**	Tab-Lok	**L**
Flanged	**3LC**	6061 Aged	**F**	15.9 mm (5/8")	**20**				
Low Profile	**8LC**	6061	**I**	19.1 mm (3/4")	**24**				
		Stainless Steel	**2CU**	22.2 mm (7/8")	**28**				
				25.4 mm (1")	**32**				
				28.6 mm (1.1/8")	**36**				

C50L™ Lockbolt 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 hydraulic installation tools which operate on hydraulic power supplied by a Huck POWERIG® Hydraulic Unit.

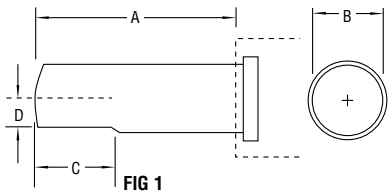


FIG 1

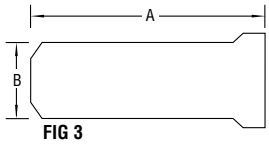


FIG 3

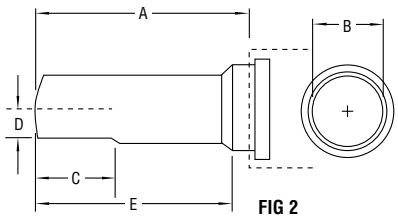


FIG 2

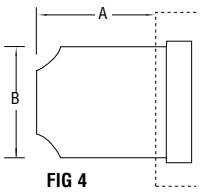


FIG 4

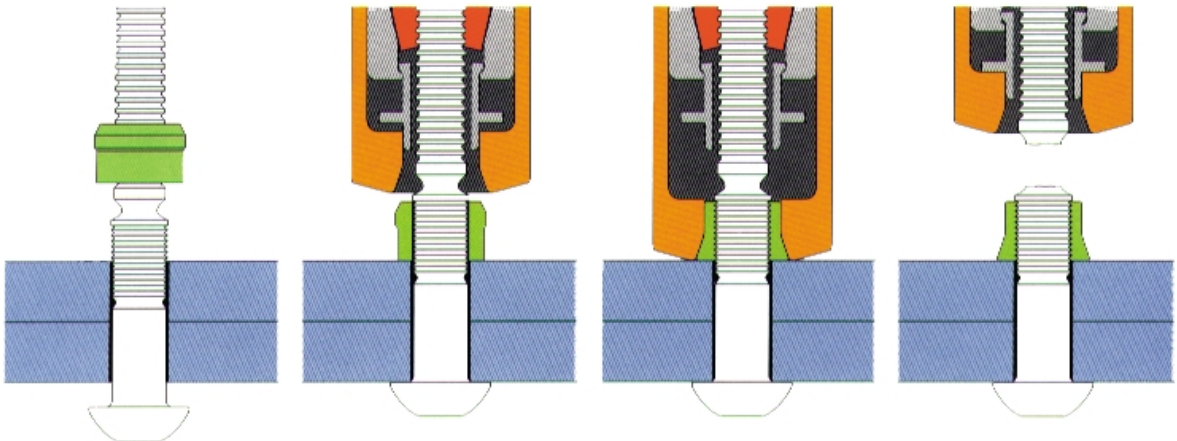
Hydraulic Tooling

Code	Diameter	Nose Ass.	Fig.	A mm	B mm	C mm	D mm	E mm	Hydraulic Tooling
16	12.7 mm (1/2")	**99-5002**	1	104.6	44.5	58.4	19.7	-	**2620-PT**
		99-5005	1	193.1	44.5	146.1	19.7	-	**2620-PT**
		99-6000	3	111.1	42.8	-	-	-	HPT25RH
20	15.9 mm (5/8")	**99-5008**	2	107.3	52.5	58.4	22.9	98.6	2624 / **2628**
		99-5009	1	177.7	55.5	171.5	24.5	-	2624 / **2628**
		99-6001	3	147.4	49.5	-	-	-	HPT35RH
24	19.1 mm (3/4")	**99-5010**	1	120.1	55.5	57.9	24.6	-	**2628**
		99-5013	1	177.7	55.5	171.5	26.3	-	**2628**
		99-6002	3	162.8	55.5	-	-	-	HPT57RH
28	22.2 mm (7/8")	**99-5014**	1	74.1	69.9	54.1	30.4	-	506
		99-5015	1	178.0	69.9	172.5	32.5	-	506
		99-6003	3	183.0	69.9	-	-	-	HPT70
32	25.4 mm (1")	**99-5016**	1	88.5	82.6	69.9	38.1	-	**507**
		99-5016FP	4	93.2	82.6	-	-	-	**507**
		99-5017	1	178.1	82.6	171.6	38.1	-	**507**
		99-6004	3	204.2	82.6	-	-	-	HPT90
36	28.6 mm (1.1/8")	99-5019	1	94.0	82.6	69.9	38.1	-	**507**
		99-5019FP	4	94	82.6	-	-	-	**507**
		99-5020	1	183.7	82.6	170.0	38.1	-	**507**

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.

Installation Sequence



Click Here to view animation of installation sequence

Installation Tooling