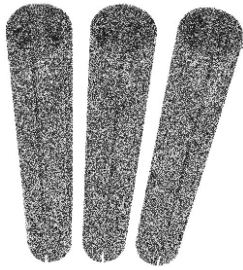


# BRONZE GUIDE SLEEVES



Constructed of the finest materials, these bronze sleeves offer the best value for the job. Bronze guide sleeves come in both smooth wall and diamond pattern design. A most sizes are ready to ship today!

Diamond patterned guide sleeve have hundreds of indentations formed throughout the inside surface to provide greater lubricant retention over a wider surface area than any other system.

For Diamond Bronze Liners change part no. prefix from "GS" to "DS" .

Sold in boxes of 100

Sleeve Nominal Size	Sleeve ID Min	Sleeve Finish	Sleeve Length	Part No.	Size in metric	Sleeve Size		Reamer size	Bored Hole Max ID
						Deviation			
5mm	0.195"		2.500"	DS 2696	4.95mm		Standard	0.2140	0.2145
	0.214"		2.250"	DS 2089	5.44mm	.002"	Undersize	0.2500	0.2505
5.5mm	0.216"		2.250"	DS 2694	5.49mm		Standard	0.2500	0.2505
	0.217"		2.500"	DS 2001	5.51mm		Standard	0.2500	0.2505
6mm	0.234"		2.500"	DS 2081	5.94mm	.002"	Undersize	0.2660	0.2667
	0.235"		2.500"	DS 2067	5.97mm	.002"	Undersize	0.2660	0.2667
	0.236"		2.500"	DS 2002	5.99mm		Standard	0.2660	0.2667
	0.238"		2.500"	DS 2692	6.05mm	.002"	Oversize	0.2660	0.2667
6.6mm	0.240"		2.500"	DS 2102	6.01mm	.004"	Oversize	0.2660	0.2667
	0.258"		2.500"	DS 2076	6.55mm	.003"	Undersize	0.2910	0.2915
	0.259"		2.500"	DS 2662	6.58mm	.002"	Undersize	0.2910	0.2915
7mm	0.261"		2.500"	DS 2003	6.63mm		Standard	0.2910	0.2915
	0.272"		2.500"	DS 2059	6.91mm	.003"	Undersize	0.3080	0.3095
	0.272"		3.062"	DS 2084	6.91mm	.003"	Undersize	0.3080	0.3095
	0.274"		2.500"	DS 2075	6.96mm	.001"	Undersize	0.3080	0.3095
	0.274"		3.062"	DS 2091	6.96mm	.001"	Undersize	0.3080	0.3095
	0.275"		2.000"	DS 2078	6.99mm		Standard	0.3080	0.3095
	0.275"		2.500"	DS 2004	6.99mm		Standard	0.3080	0.3095
	0.275"		3.062"	DS 2056	6.99mm		Standard	0.3080	0.3095
	0.276"		2.500"	DS 2088	7.01mm		Standard	0.3080	0.3095
	0.277"		2.000"	DS 2077	7.04mm	.002"	Oversize	0.3080	0.3095
	0.277"		2.500"	DS 2063	7.04mm	.002"	Oversize	0.3080	0.3095
5/16"	0.277"		3.062"	DS 2086	7.04mm	.002"	Oversize	0.3080	0.3095
	0.279"		2.500"	DS 2690	7.09mm	.004"	Oversize	0.3080	0.3095
	0.306"		2.000"	DS 2027	7.77mm	.005"	Undersize	0.3410	0.3425
	0.306"		2.500"	DS 2028	7.77mm	.005"	Undersize	0.3410	0.3425
	0.309"		2.000"	DS 2025	7.85mm	.002"	Undersize	0.3410	0.3425
	0.309"		2.500"	DS 2026	7.85mm	.002"	Undersize	0.3410	0.3425
	0.309"		3.062"	DS 2066	7.85mm	.002"	Undersize	0.3410	0.3425
	0.311"		2.000"	DS 2005	7.90mm		Standard	0.3410	0.3425
5/16"	0.311"		2.500"	DS 2006	7.90mm		Standard	0.3410	0.3425
	0.311"		3.062"	DS 2007	7.90mm		Standard	0.3410	0.3425

# BRONZE GUIDE SLEEVES

Sleeve Nominal Size	Sleeve ID Min	Sleeve Finish Length	Part No.	Size in metric	Sleeve Size Deviation	Reamer size	Bored Hole Max ID
8mm	0.311"	2.000"	DS 2032	7.90mm	.005" Undersize	0.3455	0.3470
	0.311"	2.500"	DS 2033	7.90mm	.005" Undersize	0.3455	0.3470
	0.313"	2.000"	DS 2698	7.95mm	.003" Undersize	0.3455	0.3470
	0.313"	2.500"	DS 2695	7.95mm	.003" Undersize	0.3455	0.3470
	0.314"	2.000"	DS 2029	7.98mm	.002" Undersize	0.3455	0.3470
	0.314"	2.500"	DS 2030	7.98mm	.002" Undersize	0.3455	0.3470
	0.314"	3.062"	DS 2031	7.98mm	.002" Undersize	0.3455	0.3470
	0.315"	2.100"	DS 2058	8.00mm	.001" Undersize	0.3455	0.3470
	0.315"	2.500"	DS 2068	8.00mm	.001" Undersize	0.3455	0.3470
	0.316"	2.000"	DS 2008	8.03mm	Standard	0.3455	0.3470
	0.316"	2.500"	DS 2009	8.03mm	Standard	0.3455	0.3470
	0.316"	3.062"	DS 2010	8.03mm	Standard	0.3455	0.3470
	0.317"	2.000"	DS 2699	8.05mm	.001" Oversize	0.3455	0.3470
	0.317"	3.062"	DS 2053	8.05mm	.001" Oversize	0.3455	0.3470
	0.318"	2.500"	DS 2011	8.08mm	.002" Oversize	0.3455	0.3470
11/32"	0.337"	2.500"	DS 2080	8.56mm	.005" Undersize	0.3720	0.3735
	0.339"	2.100"	DS 2038	8.61mm	.003" Undersize	0.3720	0.3735
	0.339"	2.250"	DS 2039	8.61mm	.003" Undersize	0.3720	0.3735
	0.339"	2.500"	DS 2040	8.61mm	.003" Undersize	0.3720	0.3735
	0.339"	3.062"	DS 2042	8.61mm	.003" Undersize	0.3720	0.3735
	0.340"	2.100"	DS 2034	8.64mm	.002" Undersize	0.3720	0.3735
	0.340"	2.250"	DS 2035	8.64mm	.002" Undersize	0.3720	0.3735
	0.340"	2.500"	DS 2036	8.64mm	.002" Undersize	0.3720	0.3735
	0.340"	3.062"	DS 2037	8.64mm	.002" Undersize	0.3720	0.3735
	0.341"	2.500"	DS 2057	8.66mm	.001" Undersize	0.3720	0.3735
	0.342"	2.000"	DS 2085	8.69mm	Standard	0.3720	0.3735
	0.342"	2.100"	DS 2012	8.69mm	Standard	0.3720	0.3735
	0.342"	2.250"	DS 2013	8.69mm	Standard	0.3720	0.3735
	0.342"	2.500"	DS 2014	8.69mm	Standard	0.3720	0.3735
	0.342"	3.062"	DS 2015	8.69mm	Standard	0.3720	0.3735
	0.343"	2.500"	DS 2691	8.71mm	.001" Oversize	0.3720	0.3735
	0.344"	2.250"	DS 2700	8.74mm	.002" Oversize	0.3720	0.3735
	0.344"	2.500"	DS 2016	8.74mm	.002" Oversize	0.3720	0.3735
0.344"	3.062"	DS 2061	8.74mm	.002" Oversize	0.3720	0.3735	
9mm	0.352"	3.062"	DS 2062	8.94mm	.002" Undersize	0.3850	0.3865
	0.354"	2.500"	DS 2017	8.99mm	Standard	0.3850	0.3865
	0.354"	3.062"	DS 2054	8.99mm	Standard	0.3850	0.3865
	0.354"	3.500"	DS 2069	8.99mm	Standard	0.3850	0.3865
	0.356"	2.500"	DS 2693	9.04mm	.002" Oversize	0.3850	0.3865
11/32"	0.359"	2.600"	DS 2041	9.12mm	.015" Oversize	0.3870	0.3885

**VALVE GUIDE TOOLS & SUPPLIES**

## BRONZE GUIDE SLEEVES

Sleeve Nominal Size	Sleeve ID Min	Sleeve Finish Length	Part No.	Size in metric	Sleeve Size Deviation		Reamer size	Bored Hole Max ID
3/8"	0.369"	2.250"	DS 2047	9.37mm	.005"	Undersize	0.4040	0.4055
	0.369"	2.500"	DS 2048	9.37mm	.005"	Undersize	0.4040	0.4055
	0.369"	3.062"	DS 2049	9.37mm	.005"	Undersize	0.4040	0.4055
	0.371"	2.250"	DS 2697	9.42mm	.003"	Undersize	0.4040	0.4055
	0.371"	2.500"	DS 2087	9.42mm	.003"	Undersize	0.4040	0.4055
	0.372"	2.250"	DS 2043	9.45mm	.002"	Undersize	0.4040	0.4055
	0.372"	2.500"	DS 2044	9.45mm	.002"	Undersize	0.4040	0.4055
	0.372"	2.600"	DS 2046	9.45mm	.002"	Undersize	0.4040	0.4055
	0.372"	3.062"	DS 2045	9.45mm	.002"	Undersize	0.4040	0.4055
	0.374"	2.250"	DS 2018	9.50mm		Standard	0.4040	0.4055
	0.374"	2.500"	DS 2019	9.50mm		Standard	0.4040	0.4055
	0.374"	2.600"	DS 2020	9.50mm		Standard	0.4040	0.4055
	0.374"	3.062"	DS 2021	9.50mm		Standard	0.4040	0.4055
	0.376"	2.500"	DS 2073	9.55mm	.002"	Oversize	0.4040	0.4055
	0.376"	3.062"	DS 2072	9.55mm	.002"	Oversize	0.4040	0.4055
	0.389"	2.600"	DS 2082	9.88mm	.015"	Oversize	0.4170	0.4185
10mm	0.393"	3.062"	DS 2071	9.98mm	.002"	Undersize	0.4240	0.4255
	0.395"	2.500"	DS 2022	10.03mm		Standard	0.4240	0.4255
	0.395"	3.062"	DS 2060	10.03mm		Standard	0.4240	0.4255
7/16"	0.431"	2.500"	DS 2050	10.95mm	.005"	Undersize	0.4660	0.4675
	0.431"	3.062"	DS 2051	10.95mm	.005"	Undersize	0.4660	0.4675
11mm	0.432"	3.062"	DS 2065	10.97mm	.002"	Undersize	0.4660	0.4675
	0.434"	2.500"	DS 2052	11.02mm		Standard	0.4660	0.4675
	0.434"	3.062"	DS 2064	11.02mm		Standard	0.4660	0.4675
7/16"	0.434"	2.500"	DS 2055	11.02mm	.002"	Undersize	0.4660	0.4675
	0.436"	2.500"	DS 2023	11.07mm		Standard	0.4660	0.4675
	0.436"	3.062"	DS 2024	11.07mm		Standard	0.4660	0.4675
12mm	0.469"	3.062"	DS 2074	11.91mm		Standard	0.5000	0.5015
	0.470"	3.062"	DS 2079	11.94mm		Standard	0.5000	0.5015
	0.471"	3.062"	DS 2090	11.96mm		Standard	0.5000	0.5015



# BRONZE GUIDE SLEEVE INSTALLATION KITS



## INSTALL TOOL KITS WITH **BALL SIZER**

<b>5.5mm KIT</b>	
<b>B</b>	BP 1120 Ball pusher for 5.5 and 6.0 mm
<b>G</b>	AD 1100 Auto-driver 5.5& 6.0 mm
<b>S</b>	CR 1080 Carbide reamer 5.5 mm
<b>K</b>	BS 2165 Carbide ball sizer.2165
<b>1</b>	BS 2175 Carbide ball sizer.2175
<b>2</b>	BS 218 Carbide ball sizer.218
<b>4</b>	TP 1201 Trim. tool Pilot
<b>0</b>	RT 1240 Removal Tool-Std. S 5.5 mm
	RBC1049 Reamer Bushing 5.5 mm

<b>6mm KIT</b>	
<b>B</b>	BP1120 Ball pusher for 5.5 and 6.0 mm
<b>G</b>	AD1100 Auto-driver 5.5 AND 6.0 mm
<b>S</b>	CR1081 Carbide reamer 6.0 mm
<b>K</b>	BS 236 Carbide ball sizer.236
<b>1</b>	BS 237 Carbide ball sizer.237
<b>2</b>	BS 238 Carbide ball sizer.238
<b>4</b>	TP 1201 Trim. tool Pilot
<b>1</b>	RT 1241 Removal Tool-Std. Sleeve 6.0 mm
	RBC1050 Reamer Bushing 6.0 mm

<b>6.6mm KIT</b>	
<b>B</b>	BP1122 Ball pusher for 6.6 and 7.0 mm
<b>G</b>	AD1101 Auto-driver 6.6 mm
<b>S</b>	CR1082 Carbide reamer 6.6 mm
<b>K</b>	BS 261 Carbide ball sizer.261
<b>1</b>	BS 262 Carbide ball sizer.262
<b>2</b>	BS 263 Carbide ball sizer.263
<b>4</b>	TP 1202 Trim. tool Pilot
<b>2</b>	RT 1242 Removal Tool-Std. Sleeve 6.6 mm
	RBC1051 Reamer Bushing 6.6 & 7.0 mm

<b>7/16" KIT</b>	
<b>B</b>	BP 1123 Ball pusher for 7/16" and larger
<b>G</b>	AD 1108 Auto-driver 7/16" & 11.0mm
<b>S</b>	CR 1090 Carbide reamer 7/16" & 11.0 mm
<b>K</b>	BS 436 Carbide ball sizer.436"
<b>1</b>	BS 437 Carbide ball sizer.437"
<b>2</b>	BS 438 Carbide ball sizer.438"
<b>5</b>	TP 1206 Trim. tool Pilot for 7/16" & 11.0mm
<b>2</b>	RT 1250 Removal Tool-Std. Sleeve 7/16"
	RBC1053 Reamer bushing 10 mm, 11 mm & 7/16"

## INSTALL TOOL KITS WITH **BALL BROACH**

<b>5.5mm KIT</b>	
<b>B</b>	BBD100A Ball broach driver for 5.0mm - 8.0mm
<b>S</b>	AD 1100 Auto-driver 5.5& 6.0 mm
<b>K</b>	CR 1080 Carbide reamer 5.5 mm
<b>1</b>	CBB2165 0.2165 carbide ball broacher
<b>2</b>	CBB2175 0.2175 carbide ball broacher
<b>4</b>	CBB 218 0.2180 carbide ball broacher
<b>0</b>	TP 1201 Trim. tool Pilot for 5.5 mm & 6.0 mm
	RT 1240 Removal Tool-Std. Sleeve 5.5 mm
	RBC1049 Reamer Bushing 5.5 mm

<b>6mm KIT</b>	
<b>B</b>	BBD100A Ball broach driver for 5.0mm - 8.0mm
<b>S</b>	AD 1100 Auto-driver 5.5 AND 6.0 mm
<b>K</b>	CR 1081 Carbide reamer 6.0 mm
<b>1</b>	CBB 236 0.2360 carbide ball broacher
<b>2</b>	CBB 237 0.2370 carbide ball broacher
<b>4</b>	CBB 238 0.2380 carbide ball broacher
<b>1</b>	TP 1201 Trim. tool Pilot for 5.5 mm & 6.0 mm
	RT 1241 Removal Tool-Std. Sleeve 6.0 mm
	RBC1050 Reamer Bushing 6.0 mm

<b>6.6mm KIT</b>	
<b>B</b>	BBD100A Ball broach driver for 5.0mm - 8.0mm
<b>S</b>	AD 1101 Auto-driver 6.6 mm
<b>K</b>	CR 1082 Carbide reamer 6.6 mm
<b>1</b>	CBB 261 0.2610 carbide ball broacher
<b>2</b>	CBB 262 0.2620 carbide ball broacher
<b>4</b>	CBB 263 0.2630 carbide ball broacher
<b>2</b>	TP 1202 Trim. tool Pilot for 6.6 mm & 7.0 mm
	RT 1242 Removal Tool-Std. Sleeve 6.6 mm
	RBC1051 Reamer Bushing 6.6 & 7.0 mm

<b>7/16" KIT</b>	
<b>B</b>	BBD 200A Ball broach driver for 11/32" - 12.0mm
<b>S</b>	AD 1108 Auto-driver 7/16" & 11.0mm
<b>K</b>	CR 1090 Carbide reamer 7/16" & 11.0 mm
<b>1</b>	CBB 436 0.436 carbide ball broacher
<b>2</b>	CBB 437 0.437 carbide ball broacher
<b>5</b>	CBB 438 0.438 carbide ball broacher
<b>2</b>	TP 1206 Trim. tool Pilot for 7/16" & 11.0mm
	RT 1250 Removal Tool-Std. Sleeve 7/16"
	RBC 1053 Reamer bushing 10 mm, 11 mm & 7/16"

NOTE: EACH KIT COMES IN A DURABLE PLASTIC TOOL BOX. TRIMMING TOOL SOLD SEPERATELY

# BRONZE GUIDE LINER INSTALLATION KITS

## INSTALL TOOL KITS WITH **BALL SIZER**

<b>8mm KIT</b>	
<b>B</b>	BP1121 Ball pusher for 5/16", 3/8" & 8.0 mm
<b>G</b>	AD1103 Auto-driver 5/16", 8.0 mm
<b>S</b>	CR1085 Carbide reamer 8.0 mm
<b>K</b>	BS 316 Carbide ball sizer.316
<b>1</b>	BS 317 Carbide ball sizer.317
<b>2</b>	BS 318 Carbide ball sizer.318
<b>4</b>	TP1203 Trim. tool Pilot
<b>5</b>	RT1245 Removal Tool- 8.0 mm
	RBC1052 Reamer Bushing

<b>9mm KIT</b>	
<b>B</b>	BP1121 Ball pusher for 9.0 mm
<b>G</b>	AD1105 Auto-driver 9.0 mm
<b>S</b>	CR1087 Carbide reamer 9.0 mm
<b>K</b>	BS 354 Carbide ball sizer.354
<b>1</b>	BS 355 Carbide ball sizer.355
<b>2</b>	BS 356 Carbide ball sizer.356
<b>4</b>	TP1207 Trim. tool Pilot
<b>6</b>	RT 247 Removal Tool-9.0 mm
	RBC1052 Reamer Bushing 5/16", 8.0mm, 11/32", 9.0mm, 3/8"

<b>11/32" KIT</b>	
<b>B</b>	BP1121 Ball pusher for 11/32"and 3/8"
<b>G</b>	AD1104 Auto-driver 11/32"
<b>S</b>	CR1086 Carbide reamer 11/32"
<b>K</b>	BS 343 Carbide ball sizer.343
<b>1</b>	BS 344 Carbide ball sizer.344
<b>2</b>	BS 3445 Carbide ball sizer.3445
<b>4</b>	BS 345 Carbide ball sizer.345
<b>7</b>	TP 1204 Trim. tool Pilot for 11/32"
	RT 1246 Removal Tool-11/32"
	RBC1052 Reamer Bushing 11/32"

<b>3/8" KIT</b>	
<b>B</b>	BP1121 Ball pusher for 11/32"and 3/8"
<b>G</b>	AD1106 Auto-driver 3/8"
<b>S</b>	CR1088 Carbide reamer 3/8"
<b>K</b>	BS 373 Carbide ball sizer.373"
<b>1</b>	BS 374 Carbide ball sizer.374"
<b>2</b>	BS 375 Carbide ball sizer.375"
<b>4</b>	TP1205 Trim. tool Pilot for 3/8"
<b>8</b>	RT1248 Removal Tool-Std. Sleeve 3/8"
	RBC1052 Reamer Bushing 5/16", 8.0mm, 11/32", 9.0mm, 3/8"

## INSTALL TOOL KITS WITH **BALL BROACH**

<b>8mm KIT</b>	
<b>B</b>	BBD100A Ball broach driver for 5.0mm - 8.0mm
<b>B</b>	AD 1103 Auto-driver 5/16", 8.0 mm
<b>S</b>	CR 1085 Carbide reamer 8.0 mm
<b>K</b>	CBB 316 0.3160 carbide ball broacher
<b>1</b>	CBB 317 0.3170 carbide ball broacher
<b>2</b>	CBB 318 0.3180 carbide ball broacher
<b>4</b>	CBB 319 0.3190 carbide ball broacher
<b>4</b>	TP 1203 Trim. tool Pilot
<b>5</b>	RT 1245 Removal Tool- 8.0 mm
	RBC1052 Reamer Bushing

<b>9mm KIT</b>	
<b>B</b>	BBD200A Ball broach driver for 11/32"-12.0mm
<b>B</b>	AD 1105 Auto-driver 9.0 mm
<b>S</b>	CR 1087 Carbide reamer 9.0 mm
<b>K</b>	CBB 354 0.3540 carbide ball broacher
<b>1</b>	CBB 355 0.3550 carbide ball broacher
<b>2</b>	CBB 356 0.3560 carbide ball broacher
<b>4</b>	TP 1207 Trim. tool Pilot for 9.0 mm
<b>4</b>	RT 1247 Removal Tool- 9.0 mm
<b>6</b>	RBC1052 Reamer Bushing 5/16", 8.0mm, 11/32", 9.0mm, 3/8"

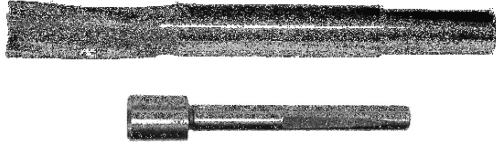
<b>11/32" KIT</b>	
<b>B</b>	BBD200A Ball broach driver for 11/32"-12.0mm
<b>B</b>	AD 1104 Auto-driver 11/32"
<b>S</b>	CR 1086 Carbide reamer 11/32"
<b>K</b>	CBB 343 0.3430 carbide ball broacher
<b>1</b>	CBB 344 0.3440 carbide ball broacher
<b>2</b>	CBB 3445 0.3445 carbide ball broacher
<b>4</b>	CBB 345 0.3450 carbide ball broacher
<b>4</b>	TP 1204 Trim. tool Pilot for 11/32"
<b>7</b>	RT 1246 Removal Tool-Std. Sleeve 11/32"
	RBC1052 Bushing 5/16", 8mm, 11/32", 9mm, 3/8"

<b>3/8" KIT</b>	
<b>B</b>	BBD200A Ball broach driver for 11/32"-12.0mm
<b>B</b>	AD 1106 Auto-driver 3/8"
<b>S</b>	CR 1088 Carbide reamer 3/8"
<b>K</b>	CBB 373 0.3730carbide ball broacher
<b>1</b>	CBB 374 0.3740carbide ball broacher
<b>2</b>	CBB 375 0.3750carbide ball broacher
<b>4</b>	TP 1205 Trim. tool Pilot for 3/8"
<b>4</b>	CTP 1225 Carb. trim. tool Pilot to fit 3/8"
<b>8</b>	RT 1248 Removal Tool-Std. Sleeve 3/8"
	RBC1052 Bushing 5/16", 8mm, 11/32", 9mm, 3/8"

**NOTE: EACH KIT COMES IN A DURABLE PLASTIC TOOL BOX. TRIMMING TOOL SOLD SEPERATELY**



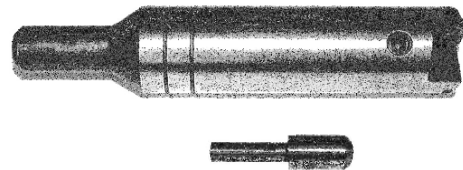
## TRIMMING TOOL & PILOTS



Part No.	Description
TT 1200	Trimming Tool (for all sizes, 1/2" O.D.)
TP 1201	5.5 mm & 6.0 mm pilot
TP 1202	6.6 mm & 7.0 mm pilot
TP 1203	5/16" & 8.0 mm pilot
TP 1204	11/32" pilot
TP 1205	3/8" pilot
TP 1206	7/16", 11mm pilot
TP 1207	9.0 mm pilot
TP 1208	10.0 mm pilot
TP 1209	12.0 mm pilot
TP 1210	5.0 mm pilot

Part No.	Description
CTT 1220	Trim Tool for all sizes 5/8" o.d.
CTP 1221	pilot to fit 5.5 & 6.0 mm
CTP 1222	pilot to fit 6.6 & 7.0 mm
CTP 1223	pilot to fit 5/16" & 8.0 mm
CTP 1224	pilot to fit 11/32"
CTP 1225	pilot to fit 3/8"
CTP 1226	pilot to fit 9.0 mm
CTP 1227	pilot to fit 10.0 mm
CTP 1228	pilot to fit 11.0 mm & 7/16"
CTC 1229	replacement carbide inserts
CTS 1230	replacement screws for carbide inserts
CTP 1231	pilot to fit 12.0 mm

## CARBIDE TRIMMING TOOL & PILOTS



## REMOVAL TOOL FOR BRONZE GUIDE SLEEVES

Tool relieves two sides of the old guide, neatly and quickly removing sleeve without touching original reamed holes, leaving it ready for a new installation.

### STANDARD

Part No.	Description
RT 1240	5.5 mm for standard sleeves
RT 1241	6.0 mm for standard sleeves
RT 1242	6.6 mm for standard sleeves
RT 1243	7.0 mm for standard sleeves
RT 1244	5/16" for standard sleeves
RT 1245	8.0 mm for standard sleeves
RT 1246	11/32" for standard sleeves
RT 1247	9.0 mm for standard sleeves
RT 1248	3/8" for standard sleeves
RT 1249	10 mm for standard sleeves
RT 1250	7/16" for standard sleeves
RT 1256	12.0 mm for standard sleeves
RT 1257	11.0 mm for standard sleeves
RT 1258	5.0 mm for standard sleeves

### UNDERSIZE

Part No.	Description
RT 1251	5/16" for undersize sleeves
RT 1252	8.0 mm for undersize sleeves
RT 1253	11/32" for undersize sleeves
RT 1254	3/8" for undersize sleeves
RT 1255	7/16" for undersize sleeves

### OVERSIZE

RT 1259	3/8" for oversize sleeves
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**“AUTO-DRIVER”  
FOR BRONZE SLEEVE INSTALLATION**

The Auto-Driver makes installation quick and easy.



Part No.	Description
AD 1100	5.5 & 6.0 mm auto-driver
AD 1101	6.6 mm auto-driver
AD 1102	7.0 mm auto-driver
AD 1103	5/16" & 8.0 mm auto-driver
AD 1104	11/32" auto-driver
AD 1105	9.0 mm & 11/32" oversize auto-driver
AD 1106	3/8" auto-driver
AD 1107	10.0 mm & 3/8" oversize auto-driver
AD 1108	7/16" & 11.0 mm auto-driver
AD 1109	12.0 mm auto-driver
AD 1110	5.0mm auto-driver

**CHAMFER TOOL  
(DEBURRING TOOL)**

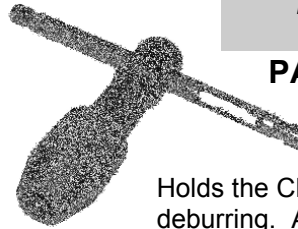
**PART NO. CHT-1260**

Six flutes, 45°. Removes burr on all sizes of guide casting, before sleeve installation.



**T-WRENCH**

**PART NO. TW-1270**



Holds the Chamfering tool for manual deburring. Adjustable to hold shank sizes from 1/4" to 5/16" diameter.

**AIR REGULATOR  
VALVE**

**PART NO. BT-3002**

Added to Part No. BT-3001 Air Hammer, the air regulator valve allows operator total variable control of hammer speed and power for installation.



**UNIVERSAL DRIVER  
ATTACHMENT**



**PART NO. BT-3004**

Fits into Air Hammer spring retainer and powers all installation, sizing and removal

**AIR HAMMER**

**PART NO. BT-3001**

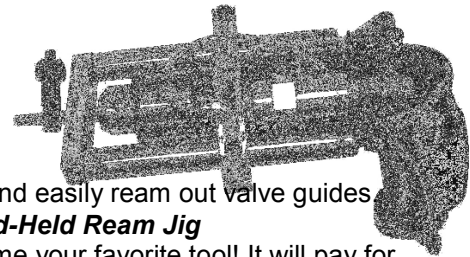
Lightweight, very short stroke Air Hammer, ideal for Bronze guide sleeve installation. Stroke 1-5/8", B.P. M. 3500 maximum: longer stroke hammers are not recommended for sleeve installation, or in ball-sizing opera-



**HAND-HELD REAM JIG**

**PART NO. RF-980**

Quickly and easily ream out valve guides. The **Hand-Held Ream Jig** will become your favorite tool! It will pay for itself in many ways, and in a very short time. Your time and labour costs will be dramatically reduced and the quality of the finished job will be greatly enhanced plus, spoilage will significantly decreased.



# CARBIDE BORING TOOLS



Each tool consists of 1 carbide boring tool, reamer bushing, spring and top retainer collar.

Part No.	Description
CBT 1510	5/16" Boring Accessory
CBT 1520	11/32" Boring Accessory
CBT 1530	3/8" Boring Accessory
CBT 1550	7/16" Boring Accessory
CBT 1600	5.5mm Boring Accessory
CBT 1610	6mm Boring Accessory
CBT 1620	6.6mm Boring Accessory
CBT 1630	7mm Boring Accessory
CBT 1640	8mm Boring Accessory
CBT 1650	9mm Boring Accessory
CBT 1660	10mm Boring Accessory
CBT 1670	11mm Boring Accessory

Part No.	Size
CR 1080	5.5 mm (.250)
CR 1081	6.0 mm (.266)
CR 1082	6.6 mm (.291)
CR 1083	7.0 mm (.308)
CR 1084	5/16" (.341)
CR 1085	8.0 mm (.3455)
CR 1086	11/32" (.372)
CR 1087	9.0 mm (.385)
CR 1088	3/8" (.404)
CR 1089	10.0 mm (.424)
CR 1090	7/16"&11.0mm (.466)
CR 1092	12.0 mm (.500)
CR 1094	3/8" Pilot+.019
CR 1095	11/32" Long
CR 1096	3/8" Long
CR 1097	11/32" -.0135
CR 1098	3/8" -.0155
CR 1099	8.00 mm Spiral
CR 1100	9 mm Pilot+.007
CR 1102	11/32 + .015
CR 1103	3/8 + .015
CR 1104	5 mm (.214)

# CARBIDE REAMERS



These reamers offer the ultimate in precision, speed and durability. Custom made to exacting specifications with carbide inserts that run through both the flute and pilot portion of the reamers. These new tools are to be spun at minimum 1500 to 2500 RPM and life of the reamer is expected to be many times that of quality high-speed steel reamers.

# REAMER BUSHINGS

These hardened reamer bushings are designed to ride the shaft of the carbide reamers and fit precisely into the seat collars. **Bushings are also available for K-Line Carbide reamers as listed below.**

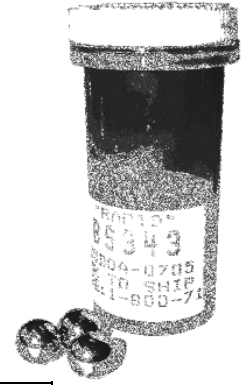


Part No.	Description
RBC 1049	5.5 mm
RBC 1050	6.0 mm
RBC 1051	6.6 & 7.0 mm
RBC 1052	5/16", 8.0mm, 11/32", 9.0mm, 3/8"
RBC 1053	10 mm, 11 mm, 7/16", 12 mm
RBC 1054	KL3571C 6.6mm
RBC 1055	KL3676C 7.0mm
RBC 1056	KL1719C 5/16"
RBC 1057	KL3581C 8.0mm
RBC 1058	KL1725C 11/32"
RBC 1059	KL1735C 3/8"
RBC 1060	KL1749C 7/16"
RBC 1061	12.0mm

# CARBIDE BALL SIZERS

These carbide ball-sizers are the ultimate in sizing precision and durability. Tungsten carbide balls are in the 90 Rockwell range, precision machined to exact specs and finished to .000008" (8 millionths of an inch) perfect roundness.

**NOTE: When used to re-size bronze guide sleeves, remember that finished I.D. of sleeve will be .001 smaller than actual ball size.**



Part No.	Size	Size
BS196	5.0mm	0.1960
BS1965	5.0mm	0.1965
BS197	5.0mm	0.1970
BS 2165	5.5mm	0.2165
BS 2175	5.5mm	0.2175
BS 218	5.5mm	0.2180
BS 236	6.0mm	0.2360
BS 237	6.0mm	0.2370
BS 238	6.0mm	0.2380
BS 240	6.1mm	0.2400
BS 2405	6.1mm	0.2405
BS 241	6.1mm	0.2410
BS 259	6.6mm	0.2590
BS 260	6.6mm	0.2600
BS 261	6.6mm	0.2610
BS 262	6.6mm	0.2620
BS 263	6.6mm	0.2630
BS 274	7.0mm	0.2740
BS 276	7.0mm	0.2760
BS 277	7.0mm	0.2770
BS 278	7.0mm	0.2780
BS 310	5/16"	0.3100
BS 311	5/16"	0.3110
BS 312	5/16"	0.3120
BS 3125	5/16"	0.3125
BS 313	5/16"	0.3130
BS 314	8.0mm	0.3140
BS 315	8.0mm	0.3150
BS 316	8.0mm	0.3160
BS 317	8.0mm	0.3170
BS 318	8.0mm	0.3180
BS 319	8.0mm	0.3190
BS 320	8.02mm	0.3200
BS 3395	11/32"	0.3395
BS 340	11/32"	0.3400
BS 342	11/32"	0.3420
BS 343	11/32"	0.3430
BS 3435	11/32"	0.3435
BS 344	11/32"	0.3440
BS 3445	11/32"	0.3445
BS 345	11/32"	0.3450
BS 3455	11/32"	0.3455
BS 346	11/32"	0.3460

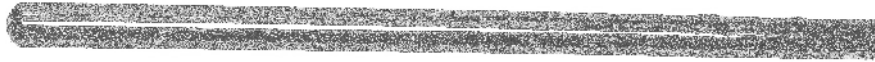
Part No.	Size	Size
BS 354	9.0mm	0.3540
BS 355	9.0mm	0.3550
BS 356	9.0mm	0.3560
BS 359	3/8"	0.3590
BS 3595	3/8"	0.3595
BS 3695	3/8"	0.3695
BS 370	3/8"	0.3700
BS 372	3/8"	0.3720
BS 373	3/8"	0.3730
BS 374	3/8"	0.3740
BS 3745	3/8"	0.3745
BS 375	3/8"	0.3750
BS 3755	3/8"	0.3755
BS 376	3/8"	0.3760
BS 389	10.0mm	0.3890
BS 3895	10.0mm	0.3895
BS 394	10.0mm	0.3940
BS 395	10.0mm	0.3950
BS 396	10.0mm	0.3960
BS 433	7/16"	0.4330
BS 436	7/16"	0.4360
BS 437	7/16"	0.4370
BS 438	7/16"	0.4380
BS 4335	11.0mm	0.4335
BS 434	11.0mm	0.4340
BS 435	11.0mm	0.4350
BS 471	11.96mm	0.4710
BS 472	11.98mm	0.4720
BS 473	12.01mm	0.4730
BS 4735	12.03mm	0.4735
BS 4745	12.05mm	0.4745

## BALL PUSHERS



PART NO.	Description
BP 1120	5.5 & 6.0 mm sleeves
BP 1121	3/8", 11/32", 8.0 mm, 5/16" sleeves
BP 1122	6.6 mm, 7.0 mm
BP 1123	7/16" & larger sleeves
BP 1124	5.0 mm sleeves

# CARBIDE BALL BROACHES



Size your Guide Sleeves quickly and simply with these durable ball broaches– eliminates reaming or honing!

Part No.	Size	Size
CBB 196	5.0mm	0.1960
CBB 1965	5.0mm	0.1965
CBB 197	5.0mm	0.1970
CBB 2165	5.5mm	0.2165
CBB 2175	5.5mm	0.2175
CBB 218	5.5mm	0.2180
CBB 236	6.0mm	0.2360
CBB 237	6.0mm	0.2370
CBB 238	6.0mm	0.2380
CBB 240	6.1mm	0.2400
CBB 2405	6.1mm	0.2405
CBB 241	6.1mm	0.2410
CBB 259	6.6mm	0.2590
CBB 260	6.6mm	0.2600
CBB 261	6.6mm	0.2610
CBB 262	6.6mm	0.2620
CBB 263	6.6mm	0.2630
CBB 274	7.0mm	0.2740
CBB 276	7.0mm	0.2760
CBB 277	7.0mm	0.2770
CBB 278	7.0mm	0.2780
CBB 310	5/16"	0.3100
CBB 311	5/16"	0.3110
CBB 312	5/16"	0.3120
CBB 3125	5/16"	0.3125
CBB 313	5/16"	0.3130
CBB 314	8.0mm	0.3140
CBB 315	8.0mm	0.3150
CBB 316	8.0mm	0.3160
CBB 317	8.0mm	0.3170
CBB 318	8.0mm	0.3180
CBB 319	8.0mm	0.3190
CBB 320	8.02mm	0.3200
CBB 3395	11/32"	0.3395
CBB 340	11/32"	0.3400
CBB 342	11/32"	0.3420
CBB 343	11/32"	0.3430
CBB 3435	11/32"	0.3435
CBB 344	11/32"	0.3440
CBB 3445	11/32"	0.3445
CBB 345	11/32"	0.3450
CBB 3455	11/32"	0.3455
CBB 346	11/32"	0.3460
CBB 354	9.0mm	0.3540
CBB 355	9.0mm	0.3550
CBB 356	9.0mm	0.3560

Part No.	Size	Size
CBB 359	3/8"	0.3590
CBB 3595	3/8"	0.3595
CBB 3695	3/8"	0.3695
CBB 370	3/8"	0.3700
CBB 372	3/8"	0.3720
CBB 373	3/8"	0.3730
CBB 374	3/8"	0.3740
CBB 3745	3/8"	0.3745
CBB 375	3/8"	0.3750
CBB 3755	3/8"	0.3755
CBB 376	3/8"	0.3760
CBB 389	10.0mm	0.3890
CBB 3895	10.0mm	0.3895
CBB 394	10.0mm	0.3940
CBB 395	10.0mm	0.3950
CBB 396	10.0mm	0.3960
CBB 433	7/16"	0.4330
CBB 436	7/16"	0.4360
CBB 437	7/16"	0.4370
CBB 438	7/16"	0.4380
CBB 4335	11.0mm	0.4335
CBB 434	11.0mm	0.4340
CBB 435	11.0mm	0.4350
CBB 471	12.0mm	0.4710
CBB 472	12.0mm	0.4720
CBB 473	12.0mm	0.4730

## BROACH HOLDER/ DRIVER



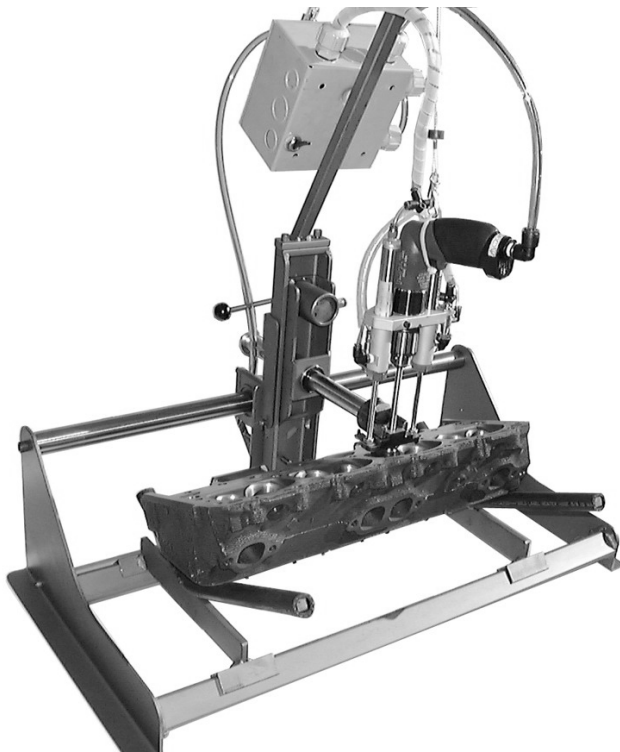
Part No.	Size
BBD 100A	5.0mm - 8.0mm sizes
BBD 100B	Replace. bumper for BBD 100A
BBD 200A	11/32" - 12.0mm sizes
BBD 200B	Replace. bumper for BBD 200A

## SEAT COLLARS

Seat Collars have a 45° angle on one side and a 30° angle on the opposite side. They add the upper control of tooling that locks on the existing seat for precise reaming of new holes.



Part No.	Description
SC 1010	1" seat collars (90°)
SC 1011	1-3/16" seat collars (90°)
SC 1012	1-3/8" seat collars (90°)
SC 1013	1-5/8" seat collars (90°)
SC 1014	1-3/4" seat collars (90°)
SC 1015	2" seat collars (90°)
SC 1016	2-1/4" seat collars (90°)
SC 1020	1-1/4" seat collars (60°)
SC 1021	1-1/2" seat collars (60°)
SC 1022	1-3/4" seat collars (60°)
SC 1023	2-1/4" seat collars (60°)
SC 1024	1" seat collars (60°)



## REAMING FIXTURE

### MODEL NO. RF990

#### Specifications:

Dimensions: 33" x 17" x 15"

Weight: 75 lbs

All welded heavy-duty steel construction

Air piston provides 300lbs hold down pressure.

All hold down parts are precision made to be free to self-adjust while clamping.

An air operated bench model which provides the mechanical means to precision ream valve guides and to facilitate installation of the Valve Guide Sleeve. Suitable for all popular cast iron and aluminum cylinder heads.



## Speed Reducer With Handle

REK-1031

5.5 to 1 gear reduction. Fits 1/4" or larger drill. Comes with 1/4" output drive adapter.

## Small Hole Gauge Set

SMH001

Range: 1/8" to 1/2"

Ideal for checking valve guide wear and small hole diameters. Simply insert split ball in hole and expand by turning knob on handle. Measurement is read with outside micrometer. No. 230 set comes with four gauges.



## Air Valve Guide Driver



Designed for air impact drivers to install or remove all types of valve guides. Heavy duty .401 Parker shank fits all standard impact drivers. These drivers replace the old "easy to break" black drivers.

Part #	I.D.	O.D.
VGD5-3003	.260 (6.6mm)	.472 (12mm)
VGD5-3001	.275 (7mm)	.396 (10.5mm)
VGD5-3005	.312 (5/16")	.500 (1/2)
VGD5-3002	.315 (8mm)	.476 (12.09mm)
VGD5-3006	.343 (11/32")	.500 (1/2")

Part #	I.D.	O.D.
VGD5-3007	.375 (3/8")	.500 (1/2")
VGD5-3008	.437 (7/16")	.625 (5/8")
VGD5-3019	5mm	9mm
VGD5-3020	5.5mm	11mm
VGD5-3021	6mm	11mm

## Hand Valve Guide Driver



Made from special hardened alloy steel, these drivers are designed to remove and install all types of valve guides. They also replace the old "easy to break" black drivers.

Part #	I.D.	O.D.
VGD5-3013	5/16"	7/16 (12mm)
VGD5-3014	5/16"	1/2"
VGD5-3016	11/32"	1/2"
VGD5-3017	3/8"	1/2"
VGD5-3018	7/16"	5/8"
VGD5-3010	6mm	7/16"

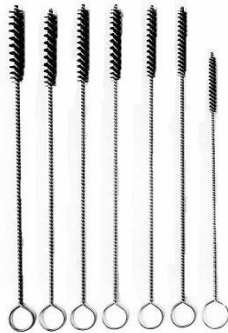
Part #	I.D.	O.D.
VGD5-3011	6.6mm	.476
VGD5-3012	7mm	.396
VGD5-3015	8mm	12mm
VGD5-2997	5mm	9mm
VGD5-2998	5.5mm	11mm
VGD5-2999	6mm	11mm

## Power Valve Guide Brushes

Can be used with drill motor. Overall length of all sizes is 9 1/2" with 1/4" shaft.



Diameter	Steel Wire No.	Nylon Bristle No.
5/16"	RERVG-1	RERVG-1Y
11/32"	RERVG-2	RERVG-2Y
3/8"	RERVG-3	RERVG-3Y
7/16"	RERVG-5	RERVG-5Y
1/2"	RERVG-6	RERVG-6Y
5/8"	RERVG-7	RERVG-7Y
3/4"	RERVG-8	
Sets	RERVG-18(1 of ea.)	RERVG-17Y (1 of ea.)



## Nylon Valve Guide Brushes (with Loop Handle)

#6-12 nylon bristle valve guide brushes with loop handle for easier manual use. Order as a set or individually. 2-1/2" brush length.

DIAM.	NO.	DIAM.	NO.
1/4"	BR11N	13/32"	BR48N
5/16"	BR13N	7/16"	BR49N
11/32"	BR47N	1/2"	BR44N
3/8"	BR14N	SET	BRVGNK

## VALVE GUIDE FLEX-HONES



PART	SIZE	PART	SIZE
BRBC5M24	5MM	BRBC9M24	11/32"
BRBC55M24	5.5MM	BRBC95M24	9.5MM
BRBC64M24	1/4"	BRBC10M24	3/8"
BRBC7M24	7MM	BRBC11M24	7.16"
BRBC8M24	5/16"	BRBC12M24	12MM



## Valve Guide Hone Kit

PART NO. REK-806M

Our most accurate method of honing valve guides to size. Provides cross-hatch finish, even on hardened guides.

For sizes .240"-.427".

Includes: hone assembly, 3 stone mandrels, 3 sets 220 grit stones, with storage box.

Individual Mandrel Part No.	Description
REK-807	Stone Mandrel- .240" - .302"
REK-808	Stone Mandrel- .302" - .365"
REK-809	Stone Mandrel- .365" - .427"