

Section 13 TOOLS

It is assumed that Authorized Briggs & Stratton Service Centers have all common tools needed to repair engines.

Specialized tools in addition to the Briggs & Stratton #291661 Tool Kit, are required to analyze, repair and restore engines to proper operating condition.

The following tachometers have been found to work well on Briggs & Stratton engines:

<u>TYPE</u>	<u>NAME</u>	<u>RPM RANGE</u>	<u>SOURCE</u>
Vibration	Trysit Sirometer	800-25000	Order from your Briggs & Stratton Source of Supply — Part No. 19200.
Vibration	Frahm #2516	1000-4000	James G. Biddle Company Plymouth Meeting, PA 19462
Electronic	Merc-O-Tronic Model 67-100T	1000-5000 1000-10000	Merc-O-Tronic Instruments Corp. 215 Branch Street Almont, MI 48003

Note: Product brand names are given in some instances. However, any tool or test instrument of equivalent accuracy is acceptable in the following list.

<u>DESCRIPTION</u>	<u>RANGE OR TYPE</u>	<u>SOURCE</u>
Torque Wrench	0-200 in. lbs. — Part No. 19197	Briggs & Stratton Source
Valve Guide Tool Guide	Part No. #19191	Briggs & Stratton Source
Valve Seat Refacer	Part No. #19237	Briggs & Stratton Source
Valve Lapper	Woods Powr-Grip	Woods Powr-Grip Manufacturer 233 Cascade Wolf Point, MT 59201
Dial Caliper	0-4 in. — Part No. 19199	Briggs & Stratton Source
Telescope Gauge	2-1/8-3-9/16" — Part No. 19198	Briggs & Stratton Source
VOA Meter	Part No. 19236 Volts Scale — Reads 0 to 400 AC or DC volts. Ohms Scale — Reads 0 to 500,000 ohms. Amps Scale — Reads 0 to 40 and 400 DC amps amps with shunt. Reads 0 to 16 AC amps.	Briggs & Stratton Source
Ignition Timing Light or Continuity Tester	Merc-O-Tronic Model 701FCT	Briggs & Stratton Source

TOOLS

BRIGGS & STRATTON REPAIR TOOLS

See Price List MS-6636 in Section One of the Master Parts Manual

Tools are listed by description and by kits. Kit 291661 is a requirement of the Authorized Registered Service Dealer. An Authorized Service Distributor is required to have the 291661 Kit and the 19158 Kit. Other additional tools should be obtained, as required to provide efficient service. Order through your Briggs & Stratton source of supply.

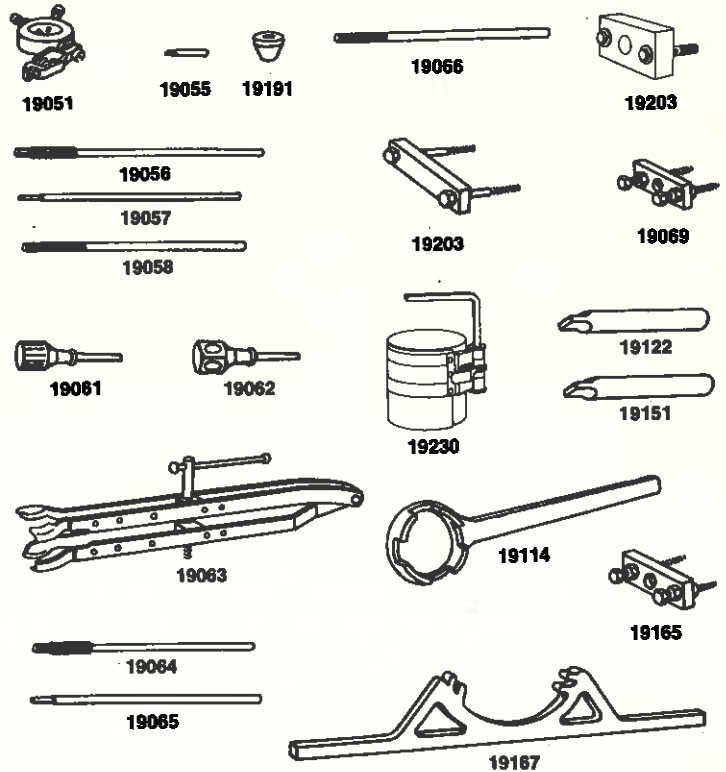
NOTE: 291661 Tool Kit is recommended for Public Schools conducting air-cooled engine courses.

291661 TOOL KIT

PART NO.

DESCRIPTION

- 19051 Spark Tester
- 19055 Breaker Plunger Gauge
- 19056 Plunger Bushing Counterbore Reamer
- 19057 Plunger Bushing Driver
- 19058 Plunger Bushing Finish Reamer
- 19061 Screwdriver, Carburetor
- 19062 Screwdriver, Carburetor
- 19063 Valve Spring Compressor
- 19064 Valve Guide Bushing Counterbore Reamer
- 19065 Valve Guide Bushing Driver
- 19066 Valve Guide Bushing Finish Reamer
- 19069 Flywheel Puller
- 19114 Starter Clutch Wrench
- 19122 Valve Guide Reject Gauge
- 19151 Valve Guide Reject Gauge
- 19165 Flywheel Puller
- 19167 Flywheel Holder
- 19191 Reamer Guide Bushing
- 19203 Flywheel Puller
- 19230 Ring Compressor

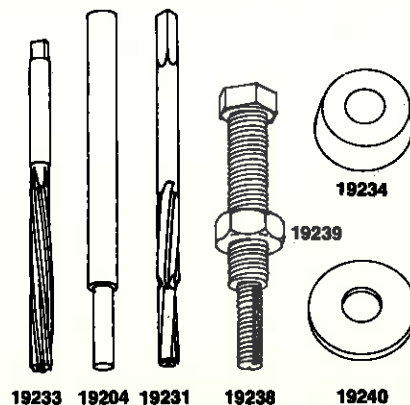


19232 VALVE GUIDE PULLER KIT*

PART NO.

DESCRIPTION

- 19204 Bushing Driver
- 19231 Piloted Reamer
- 19233 Finish Reamer
- 19234 Guide Bushing
- 19238 Bushing Puller
- 19239 Nut
- 19240 Washer



*Model Series: 140000, 170000, 190000, 220000, 233000, 243000, 250000, 300000, 326000.

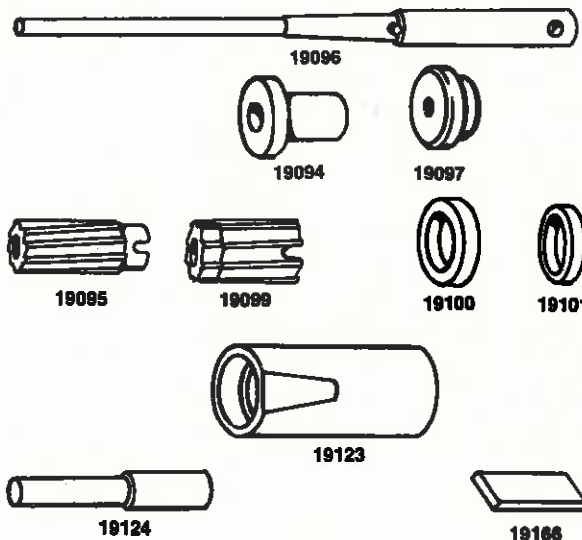
BRIGGS & STRATTON REPAIR TOOLS (Continued)

19158 TOOL KIT

MAIN BEARING TOOL KIT

Model Series 6, 8, 6B, 8B, N, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000.

<u>PART NO.</u>	<u>DESCRIPTION</u>
19094	Pilot Guide Bushing
19095	Finish Reamer
19096*	Pilot
19097	Pilot Guide Bushing, Ball Bearing Cover
19099	Counterbore Reamer
19100	Reamer Guide Bushing
19101	Reamer Guide Bushing
19123	Support Jack
19124	Bushing Driver
19166	Plug Gauge



*Included in Tool Kit 19184.

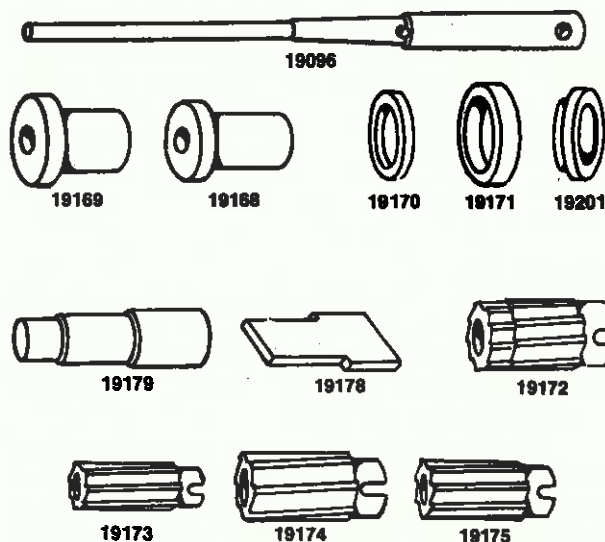
NOTE: For Model Series 100000, 130000 Vertical Crankshaft use 19186 Reamer Guide Bushing (not part of 19158 Tool Kit) for PTO Sump Bearing.

For Model Series 100000, 130000 Horizontal Crankshaft use 19170 Reamer Guide Bushing (part of 19184 Tool Kit) for PTO Sump Bearing.

19184 MAIN BEARING TOOL KIT

Model Series 140000, 170000, 171000, 190000, 191000

<u>PART NO.</u>	<u>DESCRIPTION</u>
19096*	Pilot
19168	Pilot Guide Bushing
19169	Pilot Guide Bushing
19170	Reamer Guide Bushing
19171	Reamer Guide Bushing
19171	Counterbore Step Reamer
19173	Finish Reamer
19174	Counterbore Step Reamer
19175	Finish Reamer
19178	Plug Gauge
19179	Bushing Driver
19201	Reamer Guide Bushing

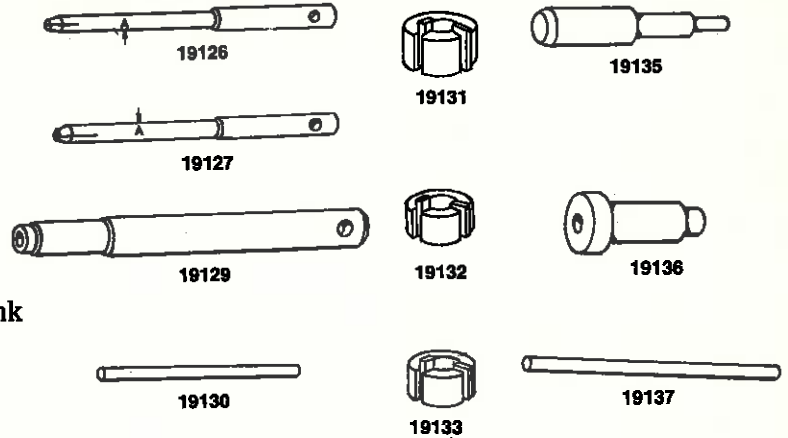


*Included in Tool Kit 19158.

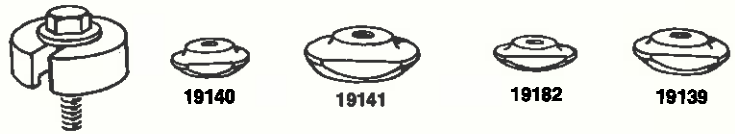
BRIGGS & STRATTON REPAIR TOOLS (Continued)

VALVE SEAT REPAIR TOOLS

<u>PART NO.</u>	<u>DESCRIPTION</u>
19126	Pilot, Valve Seat Counterbore
19127	Pilot, Valve Seat Counterbore
19129	Driver Shank, Counterbore Cutter
19130	T Handle, Driver Shank
19131	Counterbore Cutter, Valve Seats
19132	Counterbore Cutter, Valve Seats
19133	Counterbore Cutter, Valve Seats
19135	Knockout Pin, Remove Driver Shank from Counterbore Cutter
19136	Insert Driver, Install Valve Seats
19137	T Handle for Pilots
19138	Insert Puller, To Pull Valve Seats
19139	Puller Nut, Remove Valve Seats
19140	Puller Nut, Remove Valve Seats
19141	Puller Nut, Remove Valve Seats



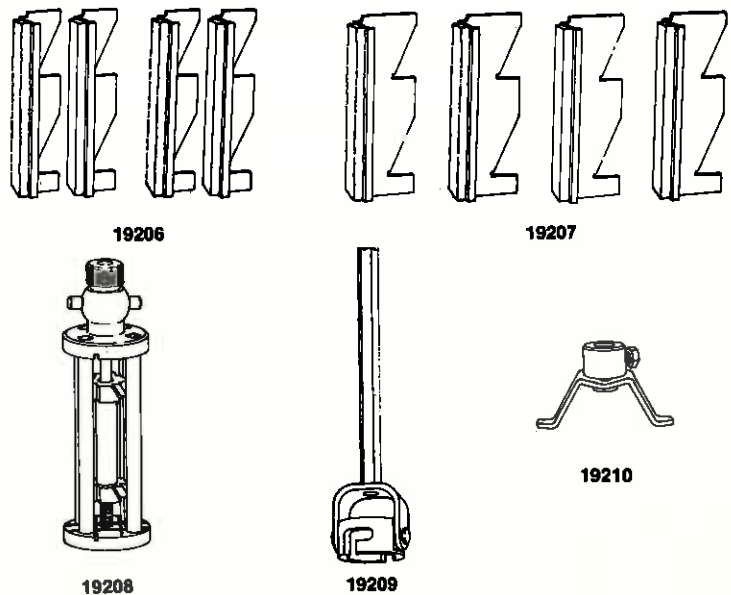
19138 VALVE SEAT PULLER KIT



19205 HONE SET

All Aluminum Cylinder Engines

<u>PART NO.</u>	<u>DESCRIPTION</u>
19206	Stone Set (Range 1-7/8" to 2-3/4")
19207	Stone Set (Range 2-5/8" to 3-1/2")
19208	Stone Retainer Springs
19209	Drive Shank
19210	Stop



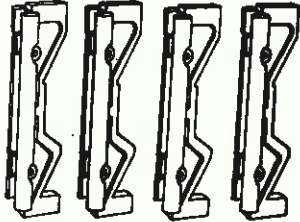
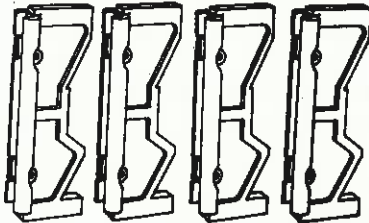




Each cylinder hone set contains instructions covering cylinder honing procedures. We also suggest you review your Briggs & Stratton Repair Instructions IV for all standard cylinder bore sizes. Contact your source of supply for pricing information.

BRIGGS & STRATTON REPAIR TOOLS (Continued)

19211 HONE SET

All Cast Iron Cylinder Engines

<u>PART NO.</u>	<u>DESCRIPTION</u>			
19212	Stone Set (60 Grit)	19212	19213	19214
19213	Stone Set (220 Grit)			
19214	Stone Carrier (Range 2-1/2" to 3-5/16")			
19215	Stone Carrier (Range 3-5/16" to 4-1/8")			
19216	Stone Retainer Springs			
19217	Drive Shank			19218
19218	Extension			

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MODELS OR SERIES USED ON</u>
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DRIVERS

*19057	Install Plunger Bushing	5, 6, 6B, 8, 8B, N, 23C, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 250000
*19065	Install Valve Guide Bushing	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
**19124	Install Main Bearing Bushings	5, 6, 8B, 8, 8B, N, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
19136	Install Valve Seat Inserts	All Models and Series
†19179	Install Main Bearing Bushings	140000, 170000, 171000, 190000, 191000
†††19204	Install Valve Guide Bushing	140000, 170000, 190000, 200000, 220000, 230400, 233000, 240000, 243000, 250000, 300000

*Included in No. 291661 Tool Kit
 **Included in No. 19158 Tool Kit

†Included in No. 19184 Tool Kit
 †††Included in No. 19232 Kit

BRIGGS & STRATTON REPAIR TOOLS (Continued)

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MODELS OR SERIES USED ON</u>
REAMERS		
*19056	Breaker Plunger Bushing Reamer	5, 6, 6B, 8, 8B, N, 23C, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 250000
*19058	Finish Reamer, Breaker Plunger Bushing	5, 6, 6B, 8, 8B, N, 23C, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 250000
*19064	Valve Guide Bushing Counterbore Reamer	5, 6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
*19066	Finish Reamer, Valve Guide Bushing	5, 6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
**19095	Finish Reamer, Main Bearing	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 92000, 940000, 100000, 110000, 130000
**19099	Counterbore Reamer, Main Bearings	6B, 8B, 60000, 80000, 82000, 92000, 940000, 100000, 110000, 130000
†19172	Counterbore Reamer, Main Bearings	100000, 130000, 140000, 170000, 190000
†19173	Finish Reamer, Main Bearings	100000, 130000, 140000, 170000, 190000
†19174	Counterbore Reamer, Main Bearings	140000, 170000, 171000, 190000, 191000
†19175	Finish Reamer, Main Bearings	140000, 170000, 171000, 190000, 191000
†††19231	Bushing Reamer, Valve Guides	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 250000, 300000, 320000
†††19233	Finish Reamer	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 250000, 300000, 320000

PILOTS

†**19096	Main Bearing Reamer Pilot	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 90000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 171000, 190000, 191000
19126	Expansion Pilot for Valve Seat Counterbore Cutter	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 90000, 92000, 94000, 100000, 110000, 130000
19127	Expansion Pilot for Valve Seat Counterbore Cutter	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 300000, 320000
19137	"T" Handle for Pilots	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 300000, 320000

REAMER GUIDE BUSHINGS

**19100	Reamer Guide Bushing, Main Bearing Reaming	6B, 8B, 60000, 80000, 82000, 92000, 94000, 110000
**19101	Reamer Guide Bushing, Main Bearing Reaming	6B, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
†19170	Reamer Guide Bushing, Main Bearing Reaming	100000, 130000, 140000, 170000, 190000

*Included in No. 291661 Tool Kit
 **Included in No. 19158 Tool Kit

Included in No. 19184 Tool Kit
 †††Included in No. 19232 Kit

BRIGGS & STRATTON REPAIR TOOLS (Continued)

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MODELS OR SERIES USED ON</u>
REAMER GUIDE BUSHINGS (Continued)		
19186	Reamer Guide Bushing, Main Bearing Reaming	100000, 130000
*19191	Reamer Guide Bushing, Valve Guide Reaming	5, 6B, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
†††19234	Reamer Guide Bushing, Valve Guide Reaming	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 250000, 300000, 320000
†19201	Reamer Guide Bushing, Main Bearing Reaming	171000, 191000

PLUG GAUGES

*19055	Check Breaker Plunger Hole	5, 6, 6B, 8, 8B, N, 23C, 60000, 80000, 82000, 92000, 940000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 250000
*19122	Check Valve Guide	5, 6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 940000, 100000, 110000, 130000
*19151	Check Valve Guides	9, 14, 19, 23, 140000, 170000, 190000, 200000, 220000, 230000, 240000, 250000, 300000, 320000,
19164	Check Camshaft Bearings	6B, 8B, 60000, 80000, 92000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 250000
**19166	Check Main Bearings	5, 6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
†19178	Check Main Bearings	100000, 130000, 140000, 170000, 171000, 190000, 191000

PILOT GUIDE BUSHINGS

**19094	Pilot Guide Bushing, Main Bearing Reaming	5, 6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000
**19097	Pilot Guide Bushing, Main Bearing Reaming, Ball Bearing Covers	6, 6B, 8B, N, 60000, 80000, 100000, 111200, 130000
†19168	Pilot Guide Bushing, Main Bearing Reaming	100000, 130000, 140000, 170000, 190000
†19169	Pilot Guide Bushing, Main Bearing Reaming	140000, 170000, 190000

COUNTERBORE CUTTERS

19115	Counterbore Valve Guide Hole	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 92000, 100000, 130000
19131	Counterbore Valve Seat Insert	14, 19, 23, 190000, 200000, 230000, 243000
19132	Counterbore Valve Seat Insert	8, 9
19133	Counterbore Valve Seat Insert	5, 6, 8, N

*Included in No. 291661 Tool Kit
 **Included in No. 19158 Tool Kit

†Included in No. 19184 Tool Kit
 †††Included in No. 19232 Kit

TOOLS

BRIGGS & STRATTON REPAIR TOOLS (Continued)

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>MODELS OR SERIES USED ON</u>
CRANKCASE SUPPORT JACK		
**19123	To Support Crankcase to Remove and Install Main Bearings	5, 6, 6B, 8, 8B, N, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 190000
FLYWHEEL PULLERS		
*19069	Removal of Flywheel	6, 6B, 8, 8B, 60000, 80000, 82000, 92000, 94000,
*19165	Removal of Flywheel	100000, 110000, 140000, 170000, 190000, 250000
*19203	Removal of Flywheel	9, 14, 19, 23, 190000, 200000, 220000, 230000, 240000, 250000, 300000, 320000
93029	Self-Threading Screw for Flywheel Pullers	6B, 8B, 60000, 80000, 82000, 92000, 100000, 140000, 170000, 190000, 250000
STARTER CLUTCH WRENCH		
*19114	For Removal and Installation of Starter Clutch	All Models with Rewind Starters
19161	For Removal and Installation of Starter Clutch (To be used with 1/2" drive socket or torque wrench)	All Models with Rewind Starters
VALVE SPRING COMPRESSOR		
*19063	To Compress Valve Springs	All Models and Series
PISTON RING COMPRESSOR		
19230	To Compress Rings on Piston	9, 14, 23, 60000, 80000, 82000, 92000, 94000, 100000, 110000, 130000, 140000, 170000, 190000, 220000, 230000, 240000, 250000, 300000, 320000
SPARK TESTER		
*19051	For Testing Ignition Spark	All Models and Series
FLYWHEEL HOLDER		
*19167	To hold Flywheel while loosening or tightening nut	*6B, 8B, 60000, 80000, 82000, 92000, 100000
TANG BENDING TOOL		
19229	Governor Tang Bending Tool	140000, 170000, 190000, 200000, 220000, 250000, 401000

*Included in No. 291661 Tool Kit

**Included in No. 19158 Tool Kit