

# 2005 BUELL LIGHTNING MODELS

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## SERVICE MANUAL

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### Part Number 99490-05Y

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[Section 2: Chassis](#)

[Section 3: Engine](#)

[Section 4: Fuel System](#)

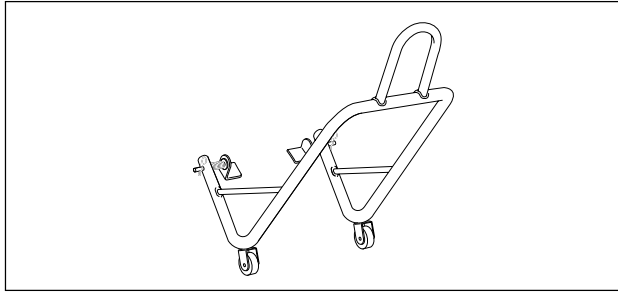
[Section 5: Starter](#)

[Section 6: Drive/Transmission](#)

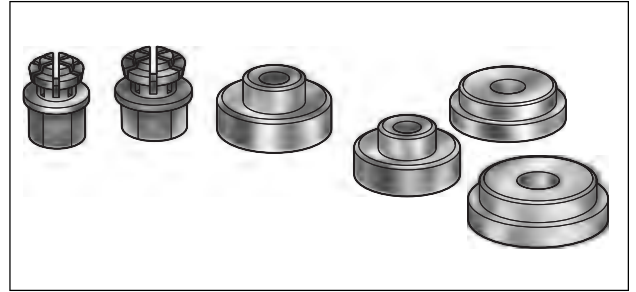
[Section 7: Electrical](#)

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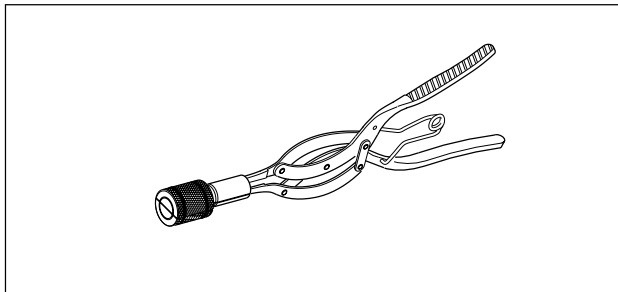




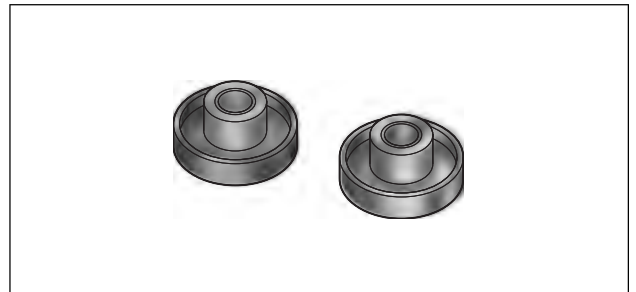
**Part No. B-41174 Rear Wheel Support Stand and  
Part No. B-41174-2 Replacement Pad**



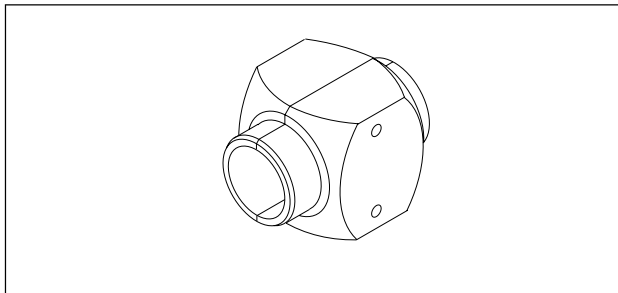
**Part No. B-43993-7/-8 Wheel Bearing Collets**



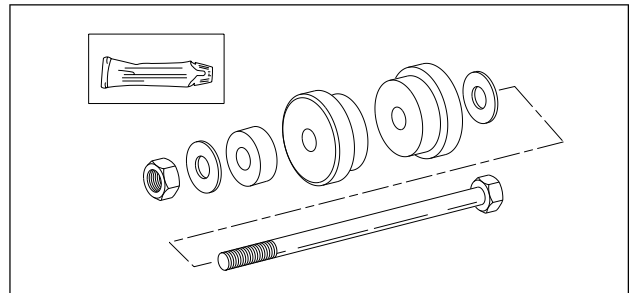
**Part No. B-42887 Brake Caliper Piston Remover**



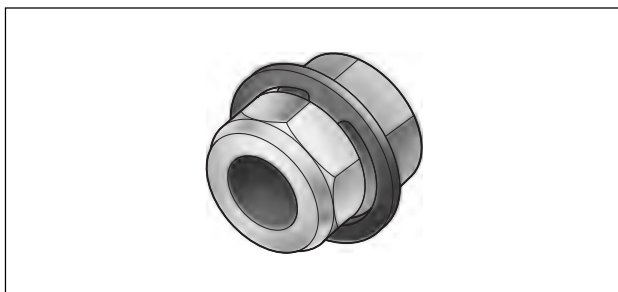
**Part No. B-45521 Steering Head Bearing Remover/  
Installer**



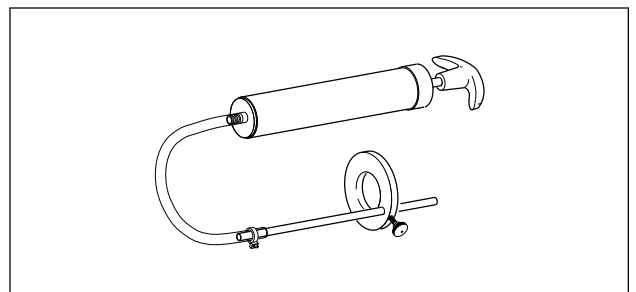
**Part No. B-43721 Front Fork Seal Driver**



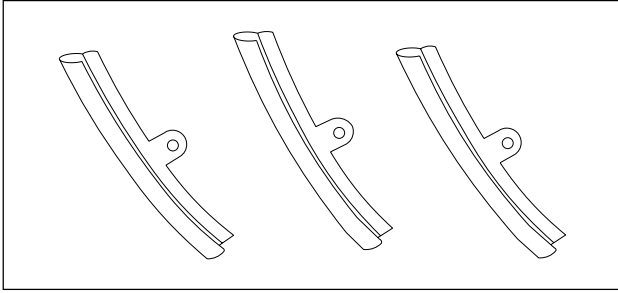
**Part No. HD-39302 Steering Head Bearing Race Installer  
(Used with B-45521)**



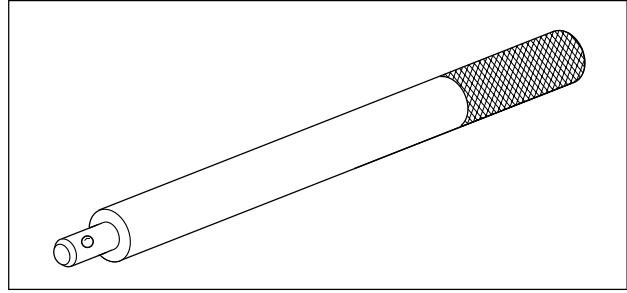
**Part No. B-46279 7/8" Axle Wrench (Hex)**



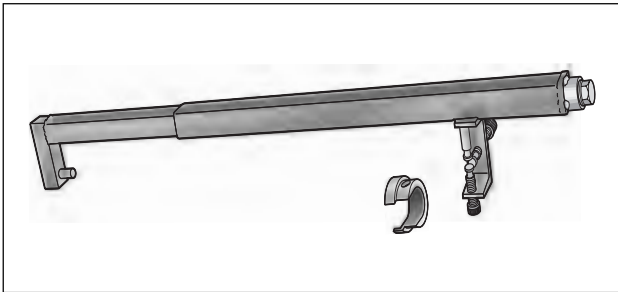
**Part No. B-59000B Pro Level Oil Gauge**



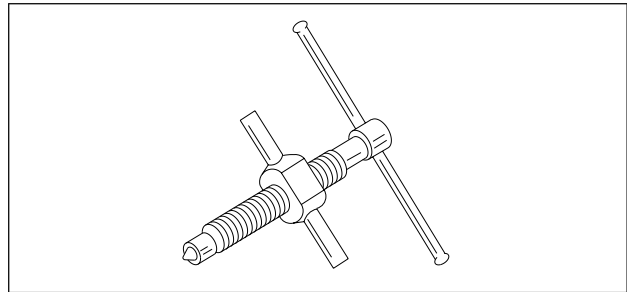
**Part No. HD-01289 Rim Protectors**



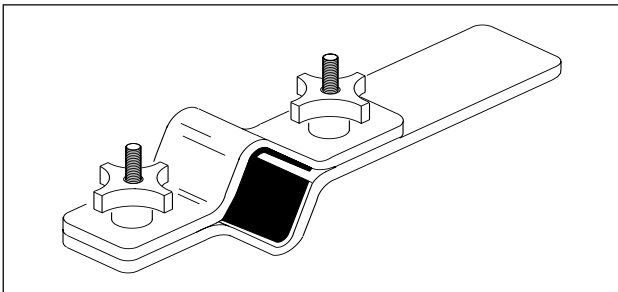
**Part No. HD-33416 Universal Driver Handle**



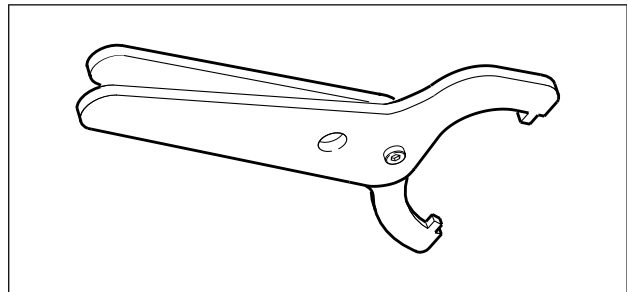
**Part No. HD-45966 Fork Spring Compressing Tool**



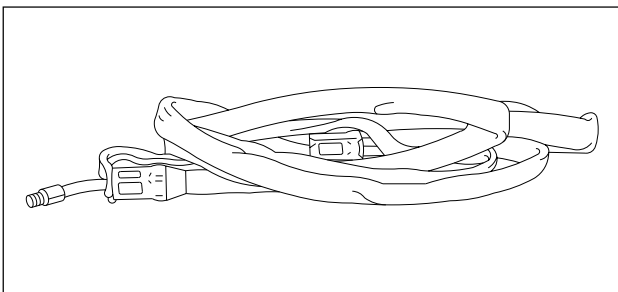
**Part No. HD-33418 Universal Puller Forcing Screw**



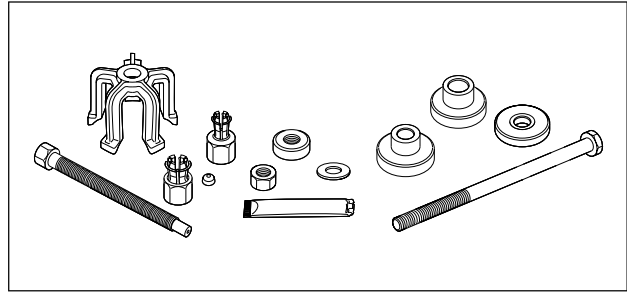
**Part No. HD-41177 Fork Tube Holder**



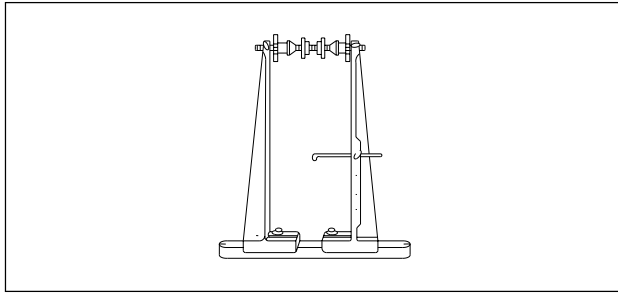
**Part No. HD-94700-52C Shock Spanner Preload Adjustment Tool**



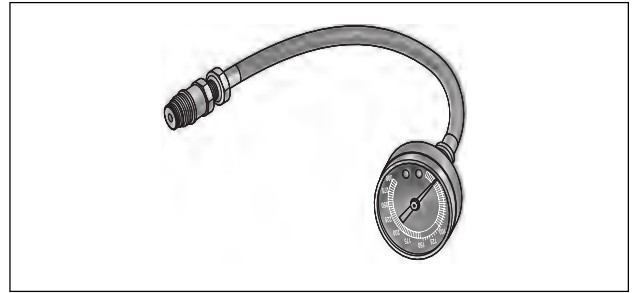
**Part No. HD-28700 Tire Bead Expander**



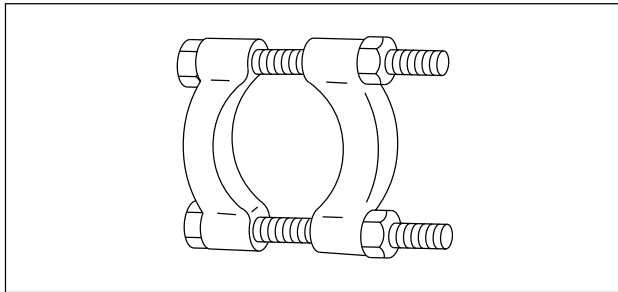
**Part No. HD-44060 Wheel Bearing Remover/Installer**



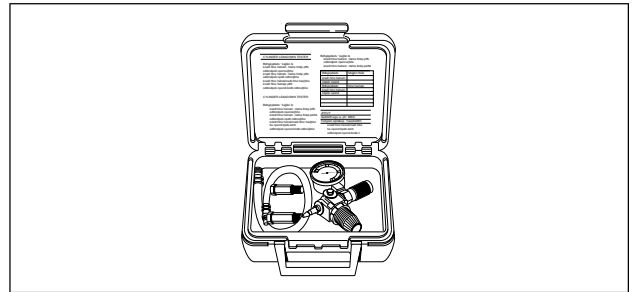
**Part No. HD-99500-80 Wheel Truing  
and Balancing Stand**



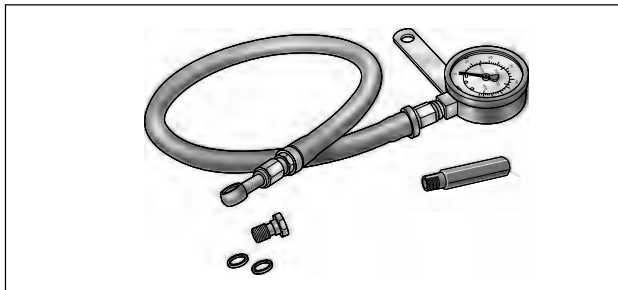
**Part No. HD-33223-1 Cylinder Compression Gauge**



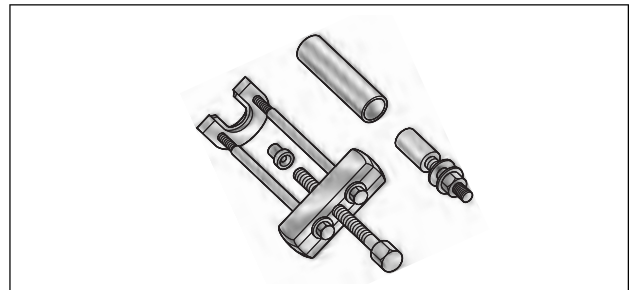
**Part No. HD-95637-46A Wedge Attachment for  
Claw Puller. Use with HD-95635-46.**



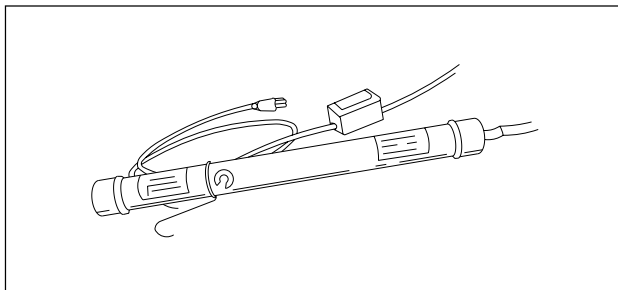
**Part No. HD-35667A Cylinder Leakdown Tester**



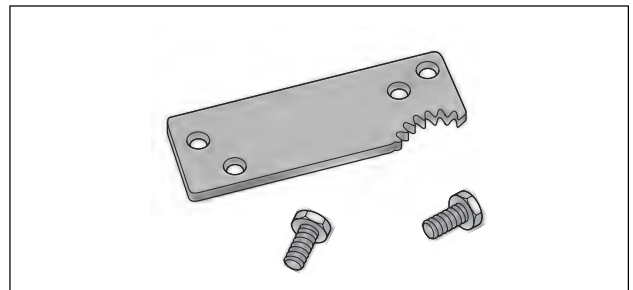
**Part No. HD-96921-52A Oil Pressure Gauge**



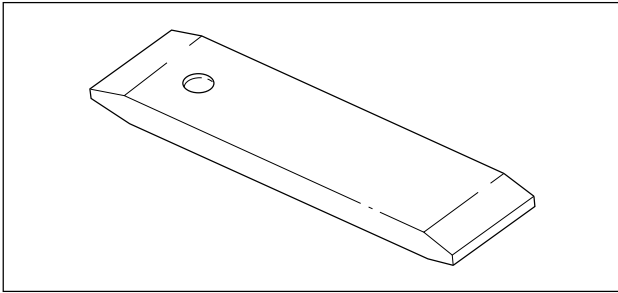
**Part No. HD-34902-B Bearing Race Remover/Installer**



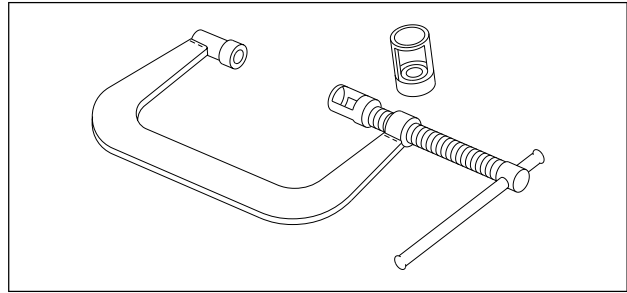
**Part No. HD-35457 Black Light Leak Detector**



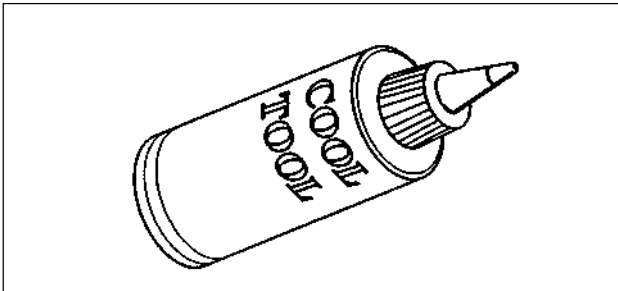
**Part No. HD-43984 Crankshaft Locking Tool**



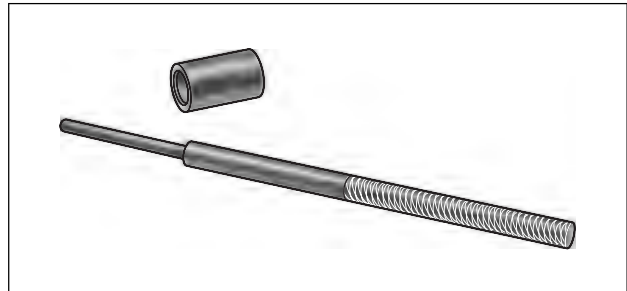
**Part No. HD-38362 Sprocket Locking Link (XB9SX)**  
**Part No. HD-46283 Sprocket Locking Link**  
**(1200 models)**



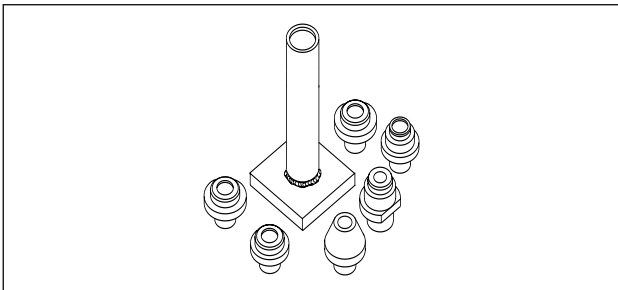
**Part No. HD-34736B Valve Spring Compressor**



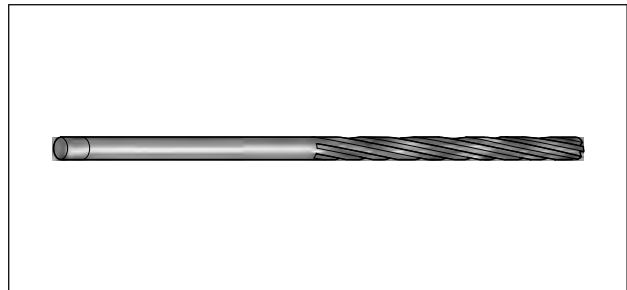
**Part No. HD-39964 Reamer Lubricant (Cool Tool)**



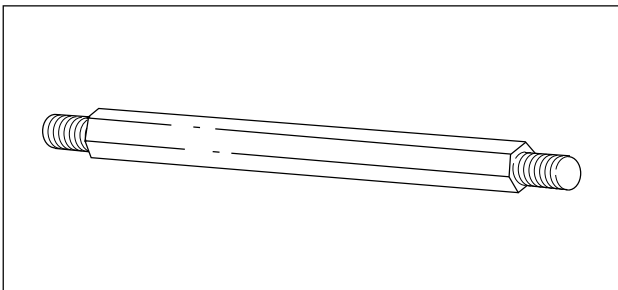
**Part No. B-45524 Valve Guide Installer**



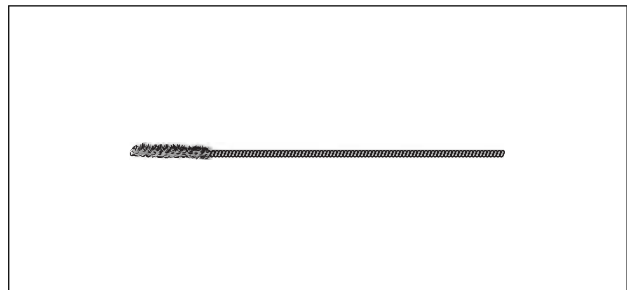
**Part No. HD-39782 Cylinder Head Support**



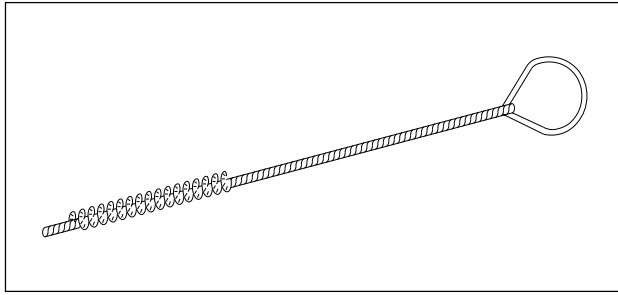
**Part No. B-45523 Valve Guide Reamer (7mm)**



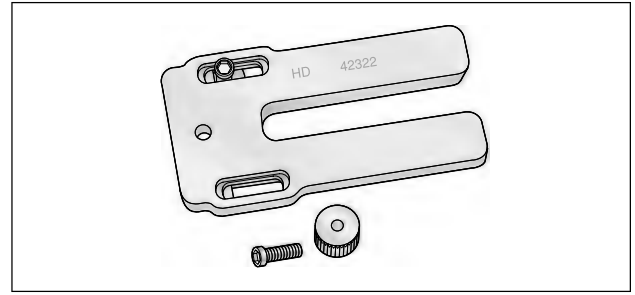
**Part No. HD-39786 Cylinder Head Holding Fixture**



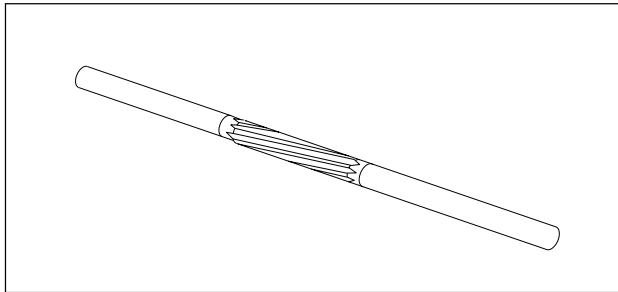
**Part No. B-45525 Valve Guide Hone**



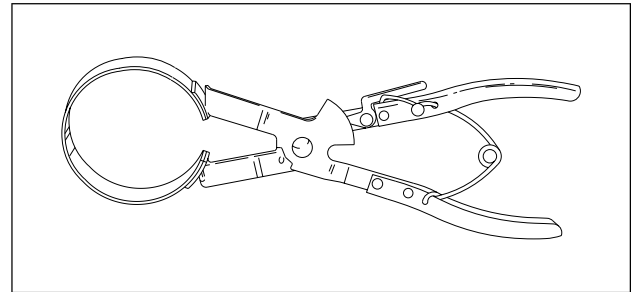
**Part No. HD-34751 Nylon Valve Guide Brush**



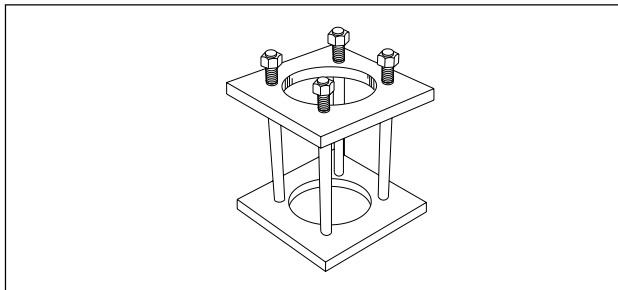
**Part No. HD-42322 Piston Support Plate**



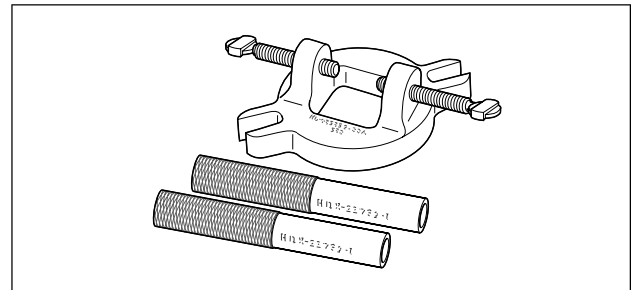
**Part No. HD-94804-57 Rocker Arm Bushing Reamer**



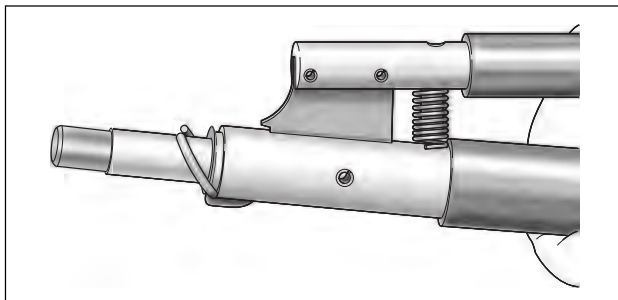
**Part No. HD-96333-51C Piston Ring Compressor**



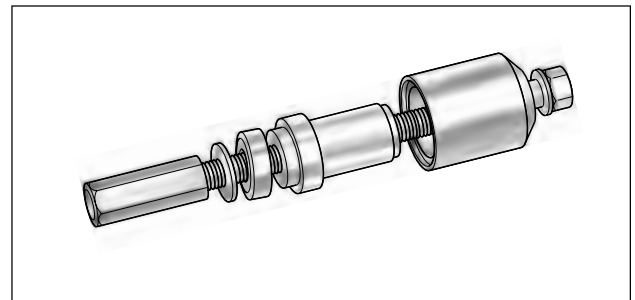
**Part No. HD-33446A Cylinder Torque Plates  
and Torque Plate Bolts Part No. HD-33446-86**



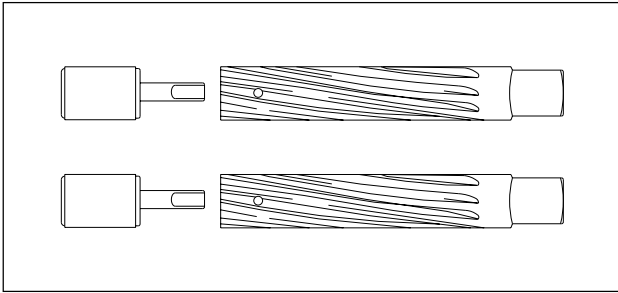
**Part No. HD-95952-33B Connecting Rod  
Clamping Tool**



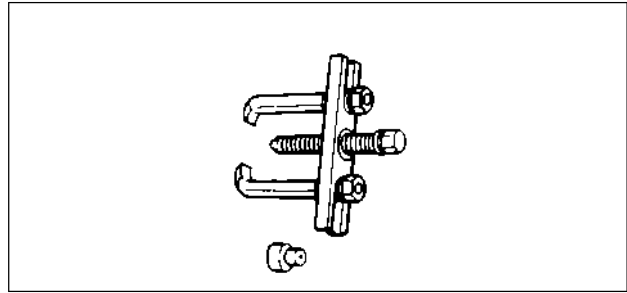
**Part No. HD-34623C Piston Pin  
Retaining Ring Installer/Remover**



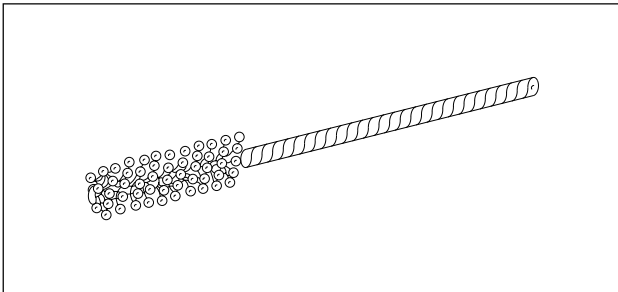
**Part No. HD-95970-32D Piston Pin Bushing Tool**



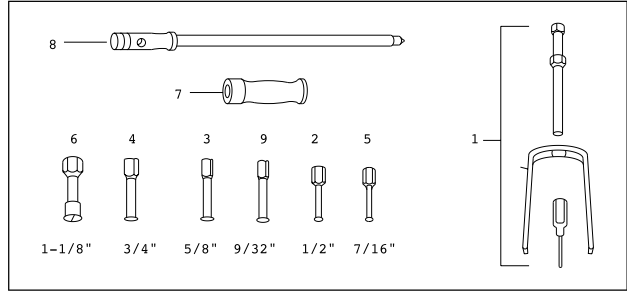
**Part No. HD-94800-26A Connecting Rod Bushing Reamers and Pilots**



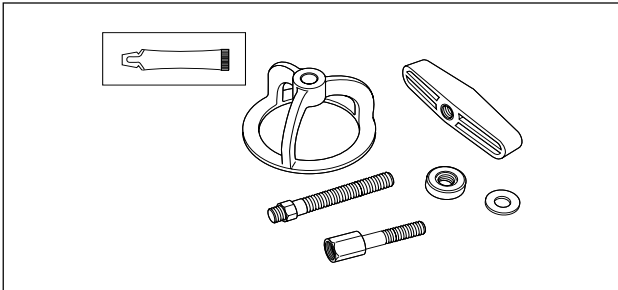
**Part No. HD-97292-61 Two Claw Puller**



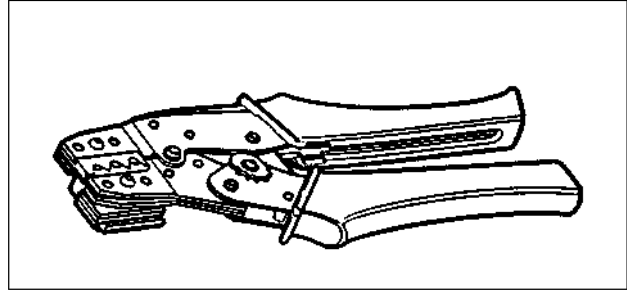
**Part No. HD-35102 Wrist Pin Bushing Hone (20 mm)**



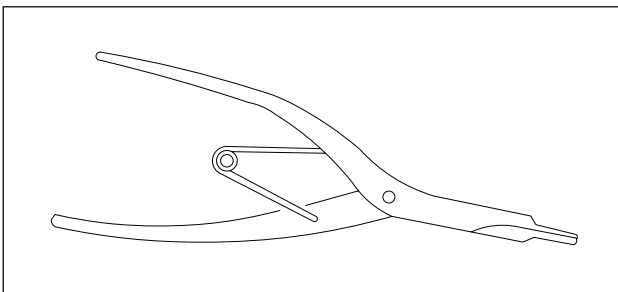
**Part No. HD-95760-69A Bushing/Bearing Puller Tool Set.**  
Set includes items 1-7. Items 8 (HD-95769-69), 9 (HD-95770-69) and 10 (HD-95771-69) are optional.



**Part No. HD-38515-A Clutch Spring Compressing Tool and Part No. HD-38515-91 Forcing Screw**



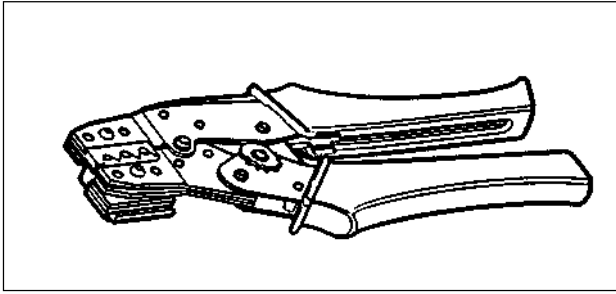
**Part No. HD-39965 Deutsch Terminal Crimp Tool**



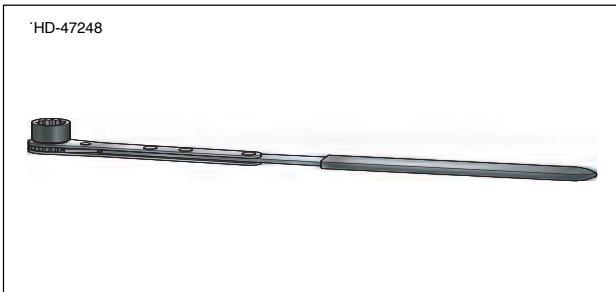
**Part No. J-5586 Transmission Shaft Retaining Ring Pliers**



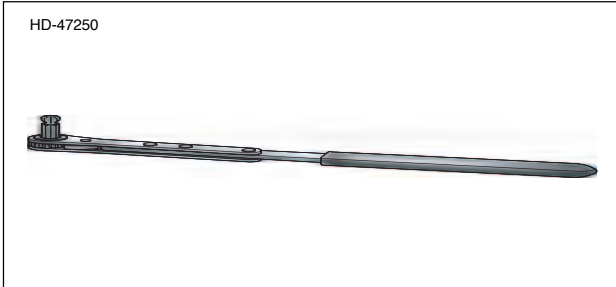
**Part No. HD-41354 Speedometer Tester**



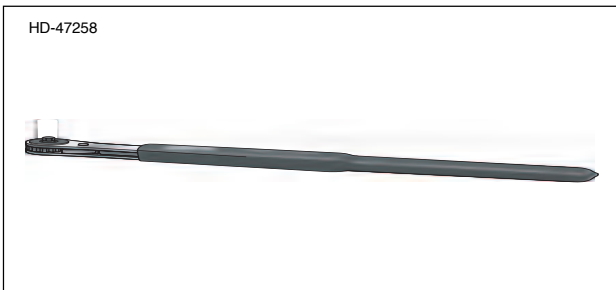
**Part No. HD-41609 Amp Terminal Crimp Tool**



**Part No. HD-47248 Rocker Housing Wrench**



**Part No. HD-47250 Intake Manifold Wrench**



**Part No. HD-47258 Rocker Cover Wrench**

# NOTES

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## REMOVING SOCKET/PIN TERMINALS

1. Remove connector from the retaining device, either attachment or rosebud clip.
2. Depress the button on the socket terminal side of the connector (plug) and pull apart the pin and socket halves.
3. Bend back the latch slightly and free one side of secondary lock, then repeat the step to release the other side. Rotate the secondary lock outward on hinge to access terminals in chambers of connector housing.
4. Looking in the terminal side of the connector (opposite the secondary lock), take note of the cavity next to each terminal.
5. See [Figure B-1](#). With the flat edge against the terminal, insert the pick tool (Snap-On TT600-3) into the cavity until it stops. Pivot the end of the pick away from the terminal (locktab is inside housing) and gently tug on wire to pull terminal from chamber. Do not tug on the wire until the tang is released or the terminal will be difficult to remove. A “click” is heard if the tang is engaged but then

inadvertently released. Repeat the step without releasing the tang.

### NOTE

- If pick tool is not available, a push pin/safety pin may be used instead.
- An *ELECTRICAL TERMINAL CRIMP TOOL* (Part No. HD-41609) is used to install Amp Multi lock pin and socket terminals on wires. If new terminals must be installed, see *Crimping Instructions* on the next page.

## INSTALLING SOCKET/PIN TERMINALS

### NOTE

For wire location purposes, numbers are stamped into the secondary locks of both the socket and pin housings. See [Figure B-2](#).

1. From the secondary lock side of the connector, insert the terminal into its respective numbered chamber until it snaps in place. For proper fit, the slot in the terminal must face the tang in the chamber.

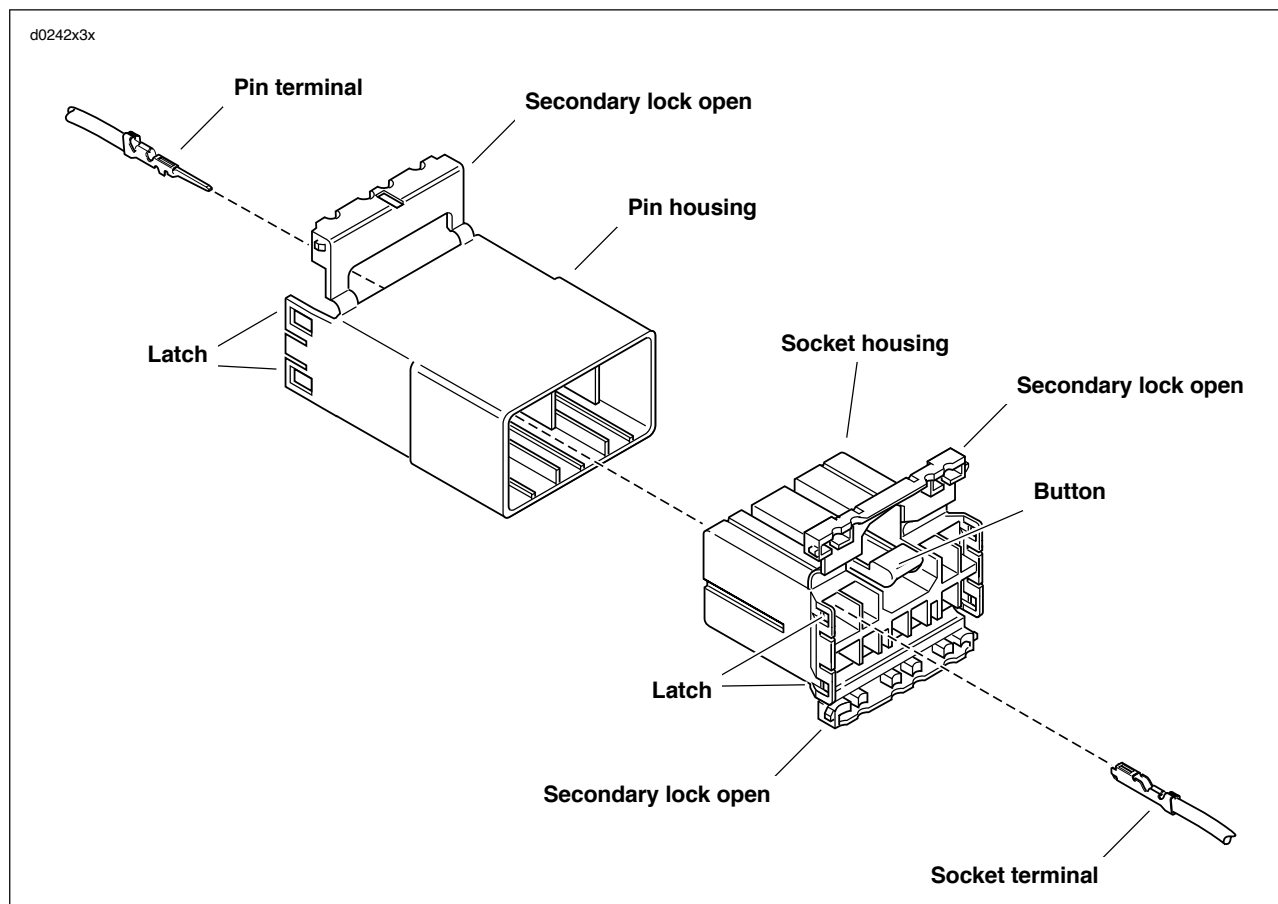


Figure B-1. 10-Place Amp Multilock Connector