S-TYPE – Essential Tools – Specifications

MODEL 2000 MY-ON S-TYPE

VIN L00001-ON

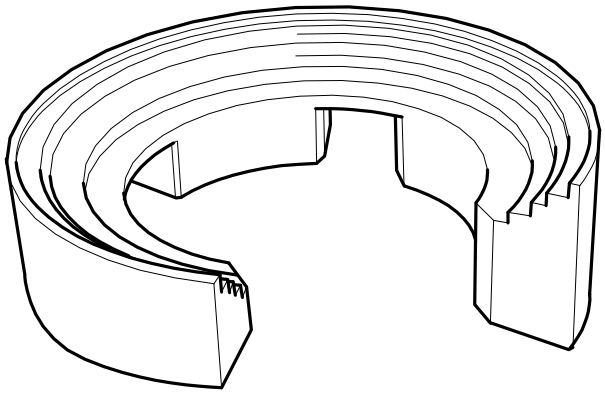
Issue:

The Service Tools required for the S-TYPE Sedan are listed below, which are all a mandatory requirement and are indicated by **bold type**.

These tools were previously shipped to dealers for the S-TYPE launch.

Service Tools which are already a mandatory requirement for the XK8 and V8 XJ Series and which are also required for the S-TYPE Sedan are indicated as 'XK8 and V8 XJ Series Tool' in plain type.

The Service Tools are listed by the global group number (as in the Workshop Manual/ JTIS) with an illustration and brief description of their usage.

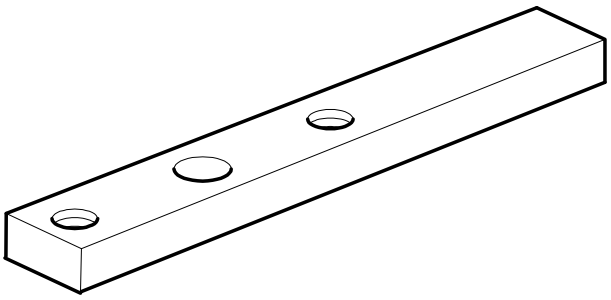


JSI.3561

FRONT SUSPENSION (SECTION 204-01)

204-112-02 Front/Rear Damper Spring Assembly Compressor Adapter

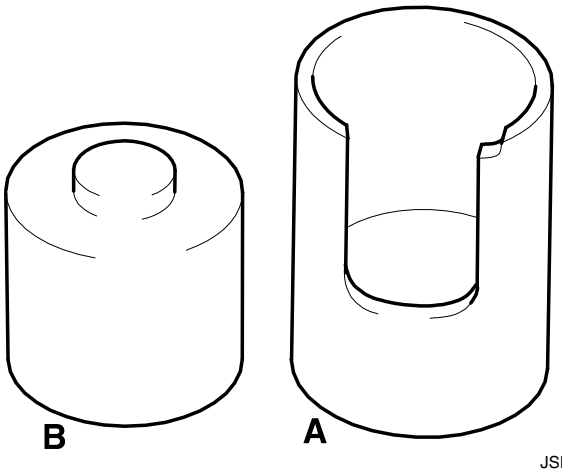
The Adapter fits the lower cup of the spring assembly and is held by the lower fingers of 204-112, Road Spring Compressor. The upper fingers of the Compressor engage with the spring coils.



JSI.3511

100-019-01 Adapter Base Plate for 100-019 Hand Press

The Adapter replaces the base plate of the Hand Press.

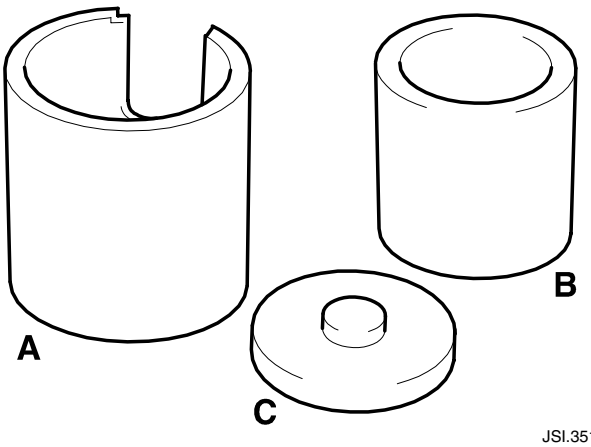


JSI.3508

A) 204-258 Upper Arm Bush Remove/ Replace Tool

B) 204-259 Upper Arm Bush Remove/ Replace Tool

The projection on the mandrel (B) is entered into the center bore of the Hand Press Adapter, 100-019-01, shown above. The upper arm is then placed over the mandrel with the bush centered on the mandrel. Tool A is then placed on the upper arm with the open end around the bush. The center screw of the Hand Press is applied to force the tool and arm down over the mandrel to remove the bush from the arm. When installing a new bush, the large slot in tool A is used to observe the progress of the action. The small cutout at the base of the slot is used to gauge the final position of the new bush.



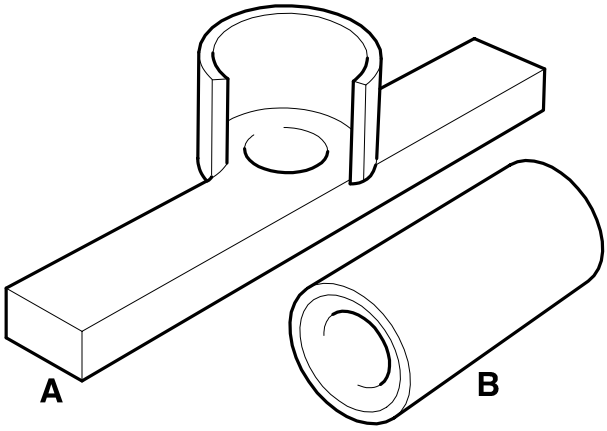
JSI.3510

A) 204-260 Lower Control Arm Front Bush Remove/Replace Tool

B) 204-261 Lower Control Arm Front Bush Remove/Replace Tool

C) 204-262 Lower Control Arm Front Bush Remove/Replace Tool

When removing the bush tool B is used to support the bush and arm while the open end of tool A is placed on the arm around the bush, the press applied and the arm is driven down to remove the bush. To insert a new bush the projection on tool C is entered into the center bore of the Hand Press Base Plate. Press the arm down over the new bush. The large slot in tool A is used to observe the progress of the action. The small cutout at the base of the slot is used as a gauge. Adapter, 100-019, and tool A are used to press arm down onto the bush.

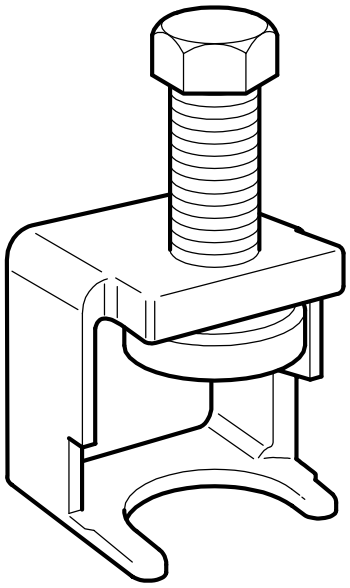


JSI.3555

A) 204-270 Lower Ball Joint Remover

B) 204-271 Lower Ball Joint Remover

The hub must be removed from the hub carrier and the gaiter removed from the lower ball joint before the ball joint can be extracted from the carrier. The longer arm of tool A is inserted through the hub bearing bore of the carrier and positioned to support the carrier around the ball joint body. Then the tool and carrier are placed in a press with the bar of the tool across the bench. Tool B is then placed over the ball pin shank and the press arbor lowered to force out the pin assembly.

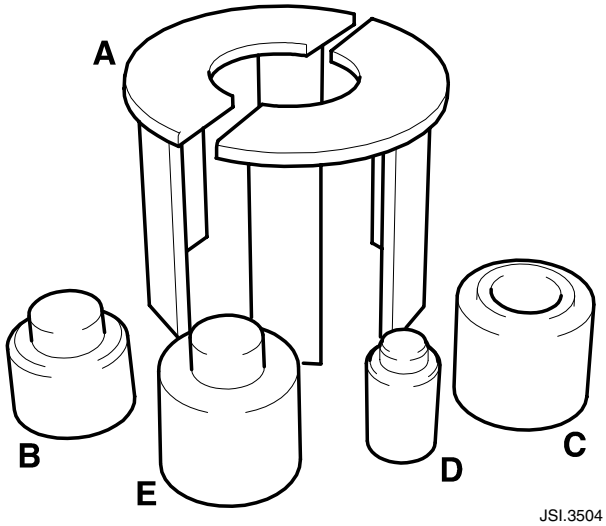


JSI.3568

204-272 Lower Ball Joint Installer

To insert the new lower ball joint; it is positioned in its bore in the hub carrier with the pad of the Installer center screw over the center of the joint back face and the feet of the Installer below the arm and either side of the pin. The screw is then tightened to insert the joint.

204-112 Road Spring Compressor XK8 & V8 XJ SEDAN Tool



JSI.3504

REAR SUSPENSION (SECTION 204-02)

A) 204-249 Rear Hub (Knuckle) Support

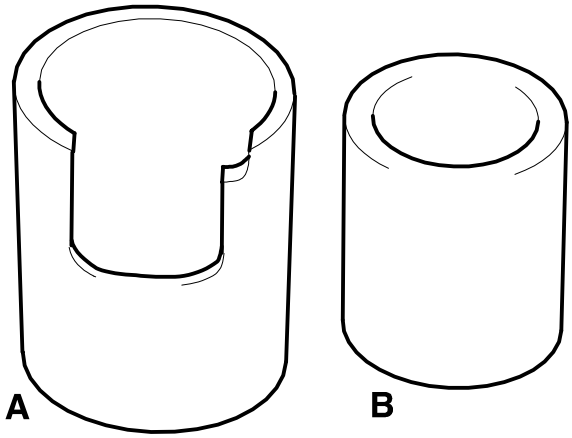
B) 204-250 Rear Hub (Knuckle) Bearing Removal Tool

C) 204-252 Bearing Support

D) 204-193 Front Hub Remover (XK8 & V8 XJ Sedan Tool)

E) 205-470 Rear Hub Bearing Installer (XK8 & V8 XJ Sedan Tool)

With the Rear Knuckle removed from the vehicle the Support (A) is fitted behind the Hub to support the Knuckle while it is standing on the press bench. The Remover (D) is inserted in the bore of the hub and the press arbor is then lowered to press out the hub. After the removal of the retaining circlip the Knuckle is turned over on the press bench and the Removal Tool (B) is fitted in position on the bearing and the bearing is then pressed out. To fit a new bearing assembly the Installer (E) is used. After the circlip is installed the Knuckle is then turned over and the circlip side of the inner race is supported by the Bearing Support (C) while the hub is pressed through the bearing.

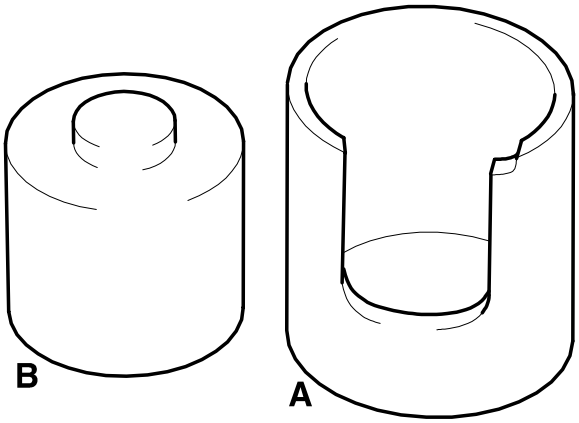


JSI.3507

A) 204-254 Upper Control Arm Forward Bush Remove/Replace Tool

B) 204-255 Upper Control Arm Forward Bush Remove/Replace Tool

When removing the bush tool, B is used to support the bush and arm while the open end of tool A is placed on the arm around the bush, the press applied and the arm is driven down to remove the bush. To insert a new bush the bush and the arm are supported by tool B while the open end of tool A is placed on the arm around the bore, the press applied and the arm is driven down to insert the bush. The large slot in tool A is used to observe the progress of the action. The small cutout at the base of the slot is used to gauge the final position of the new bush.

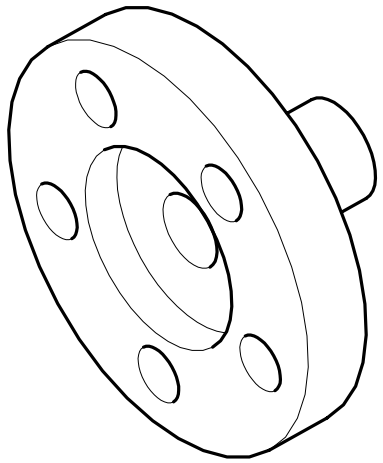


JSI.3509

A) 204-256 Lower Control Arm Forward Inner Bush Remove/Replace Tool

B) 204-257 Lower Control Arm Forward Inner Bush Remove/Replace Tool

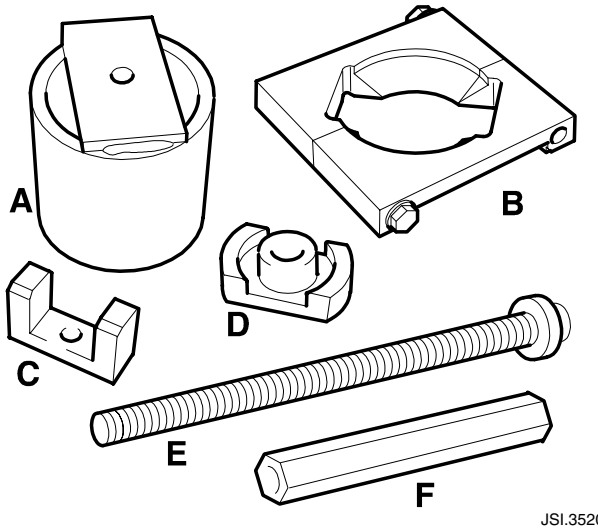
The projection on the mandrel (B) is entered into the center bore of the Hand Press Adapter, 100-019-01, shown. The assembly is then placed with the bush centered on the mandrel. The tool (B) is then placed on the arm with the open end around the bush. The center screw of the Hand Press is applied to force the tool and arm down over the mandrel to remove the bush from the arm. The tools are used in a similar manner during the fitting of a new bush. The large slot in the tool (A) is used to observe the progress of the action; the small cutout at the base of the slot is used to gauge the final position of the new bush.



JSI.3537

205-491 Hub Puller

The Hub Puller is used with 204-269 Flange Remover Forcing Screw, fitted in the center threaded bore. The tool is fitted over the hub studs and retained with a full set of wheel nuts.



JSI.3520

To remove the front and rear sub frame bushes the frame must first be removed from the vehicle.

A) 501-060 Receiver Cup Removal Rear Sub Frame Mounts

B) 501-061 Support Base Removal Rear Sub Frame Mounts

C) 501-059 Installer Rear Sub Frame Mounts

D) 501-058 Remover Rear Sub Frame Mounts

E) 204-248 Forcing Screw

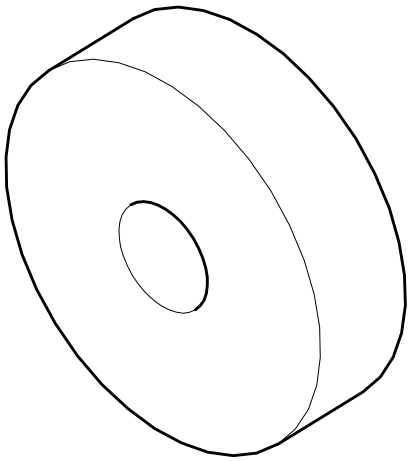
F) 204-247 Bush Remover/Replacer

The Receiver Cup support base (B) must be placed between the Bush flange and the Frame and then tightened to fit. Receiver Cup (A) is then placed over the Bush and Forcing Screw (E) with washer 204-253 fitted, is inserted through the tool and the Bush. Remover (D) is fitted to the Screw and the Bush and retained by the Remover (F). Operating Forcing Screw (E) against Remover (F) will remove the Bush from the frame into the Receiver Cup (A). Insertion of the new bush requires the use of C, E, and F of the tools noted above and also 501-063, Receiver Cup Front Mounting listed in Section 205-02, REAR DRIVE AXLE/DIFFERENTIAL.

204-112 Road Spring Compressor see Front Suspension

204-112-02 Road Spring Compressor Adapter see Front Suspension

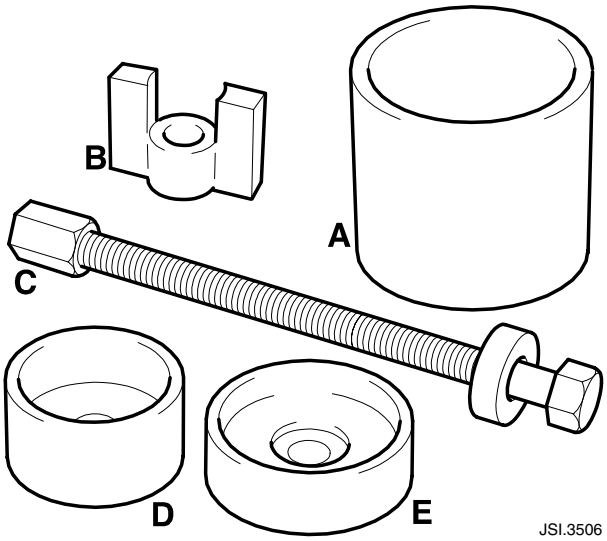
204-253 Beam Bush Remover/Installer.



JSI.3588

REAR DRIVE AXLE/DIFFERENTIAL (SECTION 205-02)

To remove the Front Mounting Bush the differential must be removed from the frame carrier - rear.



JSI.3506

A) 204-244 Receiver Cup Front Mounting Bush Remover

B) 204-242 Remover Front Mounting Bush

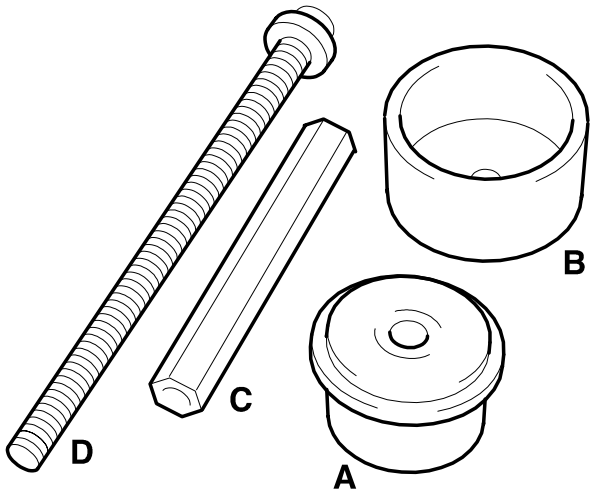
C) 204-246 Remover/Replacer Forcing Screw Front Mounting Bush

D) 204-245 Replacer Front Mounting Bush

E) 204-243 Installer Front Mounting Bush

To remove the Front Mounting Bush the receiver cup (A) is positioned with the open end below the bush; the screw (C) is passed through the bore in the cup and the Bush. The remover (B) is positioned on the screw with the wings bridging the nose extension and contacting the outer sleeve of the bush. The washer and nut are applied to the screw and tightened to withdraw the bush into the receiver cup. To fit a new Bush it is placed on the replacer (E) below the housing, the screw is then inserted up through the bush, the replacer and the housing. The replacer (D) is placed over the top of the housing, the screw is inserted and then retained by the washer and nut. The screw and nut are then operated to

press in the bush. To remove the Rear Mounting Bushes the frame carrier - rear must be removed from the vehicle and the differential from the frame.



JSI.3514

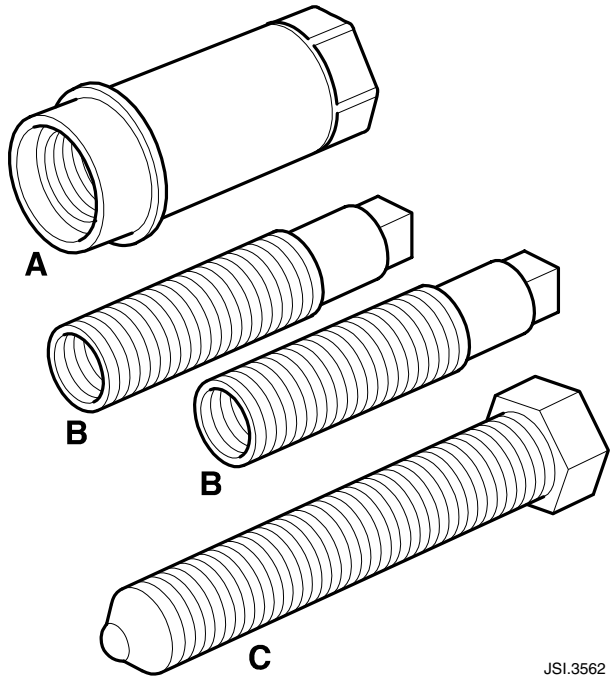
A) 501-062 Remover/Replacer Rear Mounting Bush

B) 501-063 Bushing Receiver Rear Mounting Bush

C) 204-247 Bush Remover/Replacer as F in Section 204-02, REAR SUSPENSION above.

D) 204-248 Forcing Screw as G in Section 204-02, REAR SUSPENSION above.

To remove the Rear Mounting Bush from the frame the Bushing Receiver (B) is placed at the rear and the Remover/ Replacer (A) with the smaller diameter toward the bush, is placed at the front.



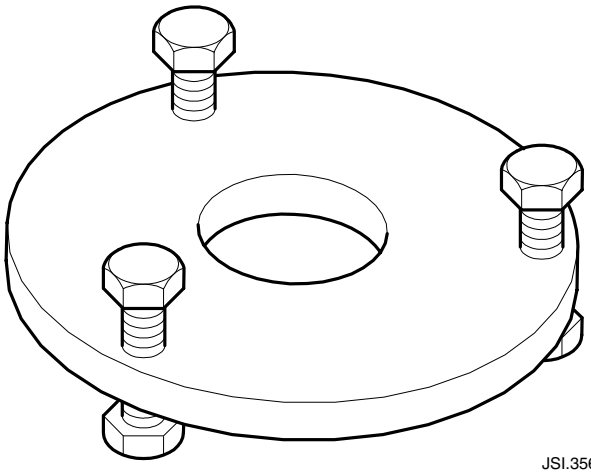
JSI.3562

A) 204-266 Flange Remover/Replacer Boss

B) 204-267 Flange Replacer Shaft Center - Differential

B) 204-268 Flange Replacer Shaft Center - Transmission

C) 204-269 Flange Remover Forcing Screw This tool is used in conjunction with 204-265, Flange Remover/Replacer Plate, to remove and replace the flanges on both the transmission output shaft and the differential pinion. The main tool body (A) has an hexagon end to enable it to be held against rotation and an integral ring on the outer face for positioning.

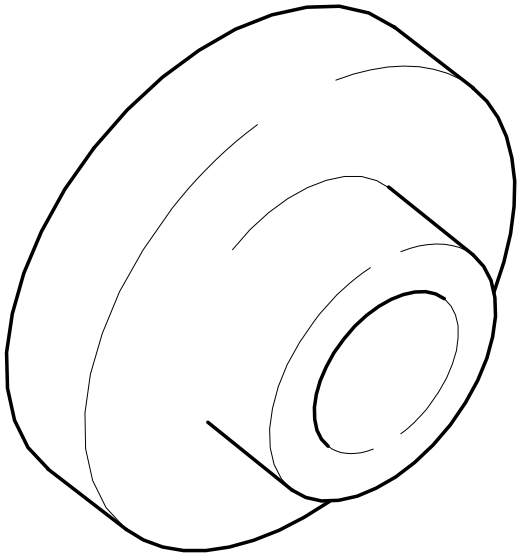


JSI.3563

204-265 Flange Remover/Replacer Plate

To remove a flange the plate is fitted over the main tool body, with the integral ring between the plate and the flange and attached to the flange by the three bolts and nuts tightened to hold the body securely. The center bolt (C) which has at its tip a captive ball bearing, is then engaged in the internal thread in the tool body until the bearing contacts the pinion. The bolt is then rotated while the body is held, to withdraw the flange. To install a flange, the center bolt (B) internal thread is fitted fully to the thread on the pinion nose and then the flange and the adapter (A) are placed over the center bolt until the flange is aligned on shaft. This is then tightened until flange is fully installed.

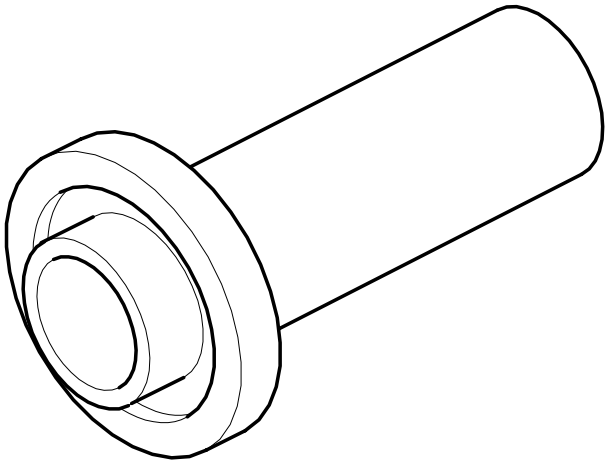
Note: 204-267 and 204-268 have different internal threads to accommodate both the transmission main shaft and pinion threads. 308-005 Adapter Remover is attached to 100-012 Impulse Extractor (XK8 & V8 XJ Sedan tools) to remove the Differential Output Shaft Bearings.



JSI.3565

204-263 Output Bearing Refit Tool

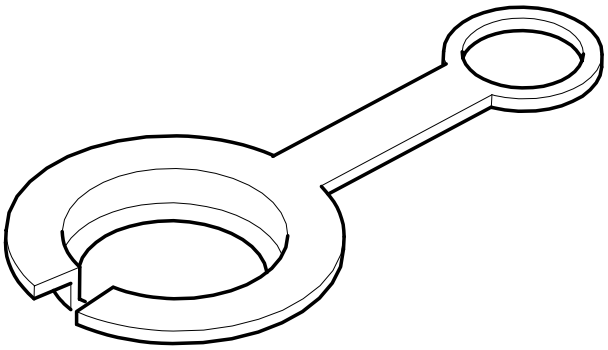
To insert the Output Bearing, 204-263 is attached to 100-013, Driver Handle, and placed against the bearing to contact the outer race while it is driven in.



JSI.3583

204-264 Pinion Seal Replacer

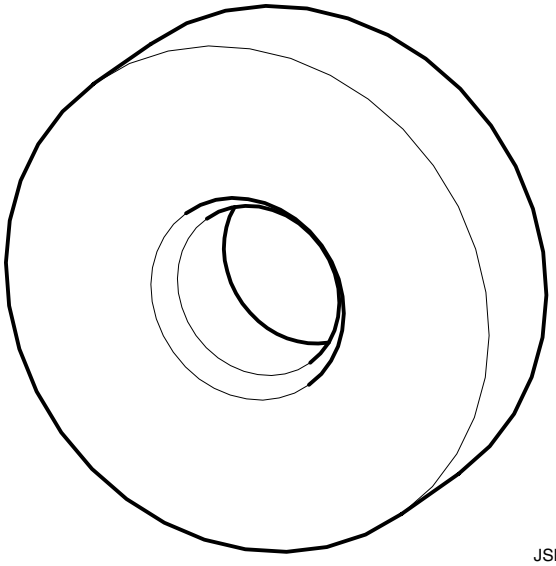
Used for the installation of the differential pinion seal.



JSI.3584

205-461 Halfshaft Seal Protectors

Used during the installation of the axle shafts into the differential.

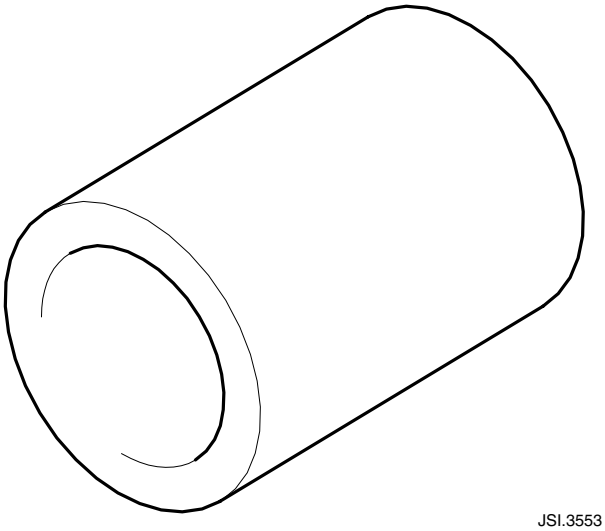


JSI.3585

205-484 Differential Output Seal Replacer

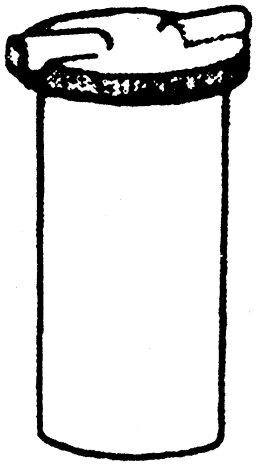
To be used with Drive Handle 100-013. Used fo the installation of the differential output shaft seals.

100-013 Driver Handle XK8 & V8 XJ Sedan Tool



JSI.3553

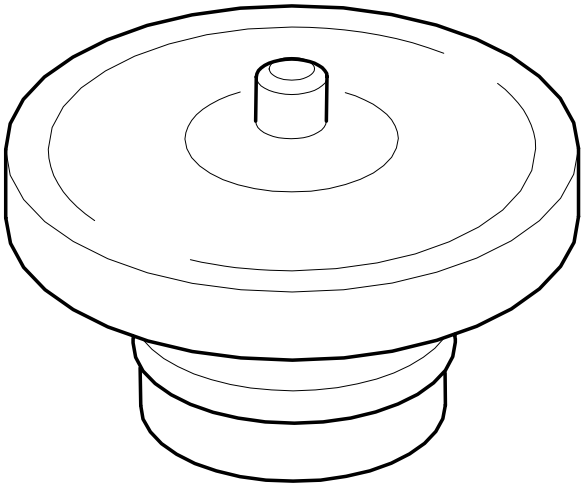
206-075 Hand brake Cable Retaining Clip Release Tool The tool is placed over the cable and pushed into position to depress the retaining tangs of the locating bush to release the cable.



POWER STEERING (SECTION 211-02)

211-264 Reservoir is included in the kit.

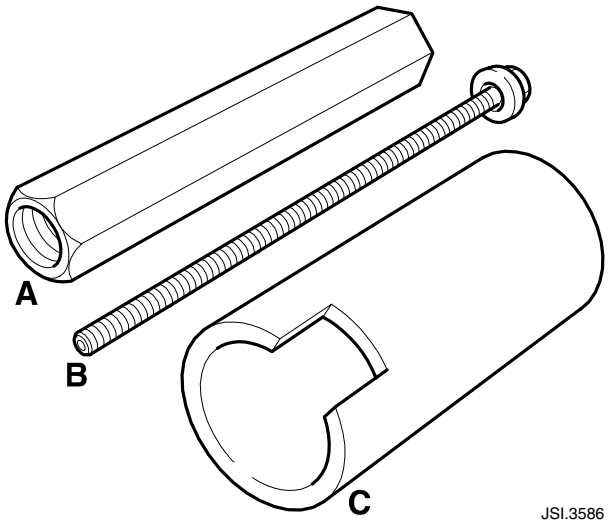
Used as reservoir when bleeding the power steering system



JSI.3536

416-001-01 Adapter for Vacuum Pump Kit

Used with hand vacuum pump to bleed the power steering system. Refer to JTIS section 211-00 for details of the vacuum/ filling process.



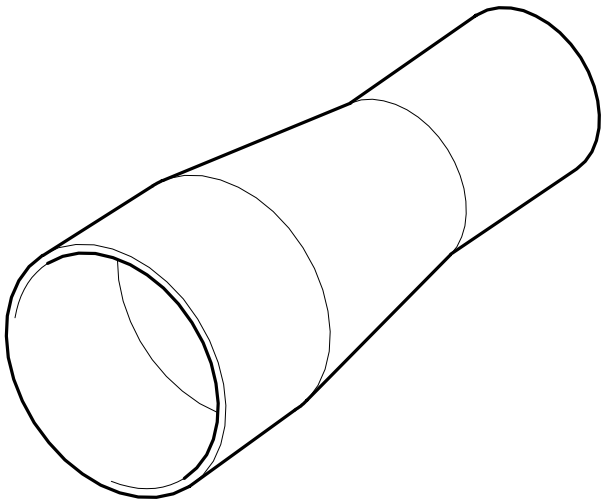
JSI.3586

204-273 Removal/Refit Steering Gear Isolator Bushes Cup

204-274 Removal/Refit Steering Gear Isolator Bushes Nut

204-275 Removal/Refit Steering Gear Isolator Bushes Bolt

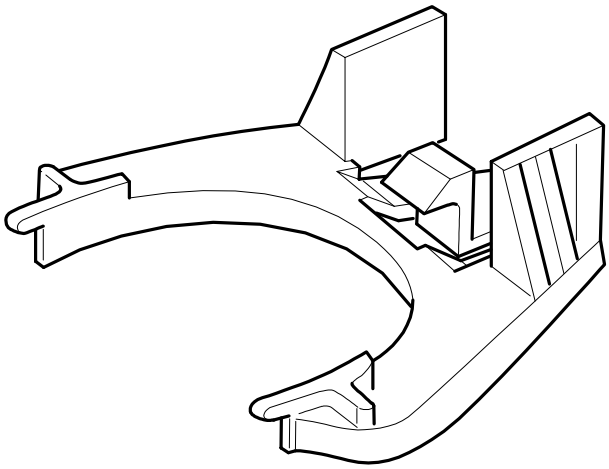
The new Steering Gear Isolator Bush must be pulled into the housing by the Bolt (B) and the Nut (A) until the rubber flange is clear of the bore, which can be seen through the observation cutout in the Cup (C).



JSI.3545

211-D027 PAS Lines Seal Replacer

Used to correctly install new PAS O-rings onto PAS fittings.

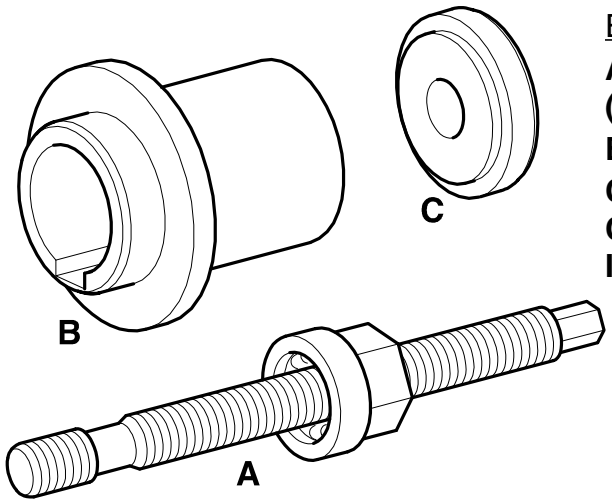


JSI.3546

STEERING COLUMN (SECTION 211-04)

211-263 Steering Wheel Locking Tool

The tool is used to prevent the steering column rotating during work on the steering system when column is able to turn.



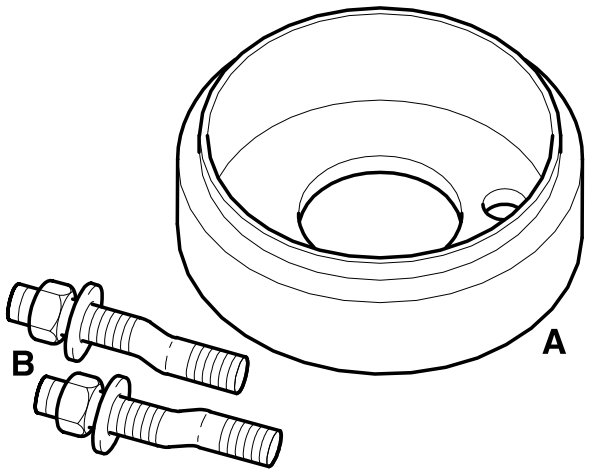
JSI.3551

ENGINE - V6 3.0L (SECTION 303-01A)

A) 303-102 Crankshaft Damper Installer (Draw Bolt)

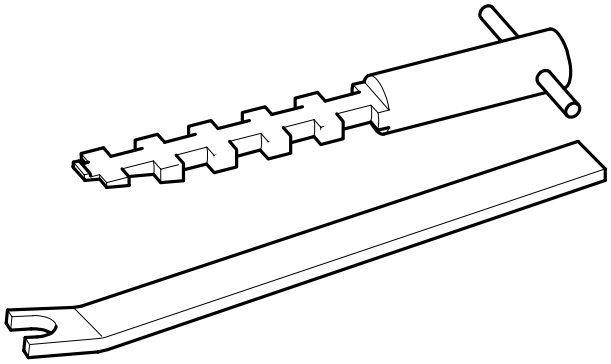
B) 303-335 Crankshaft Damper Installer

C) 303-335/2 A, B and C - V6 Front Crank Seal A and C - Crankshaft Damper Installer



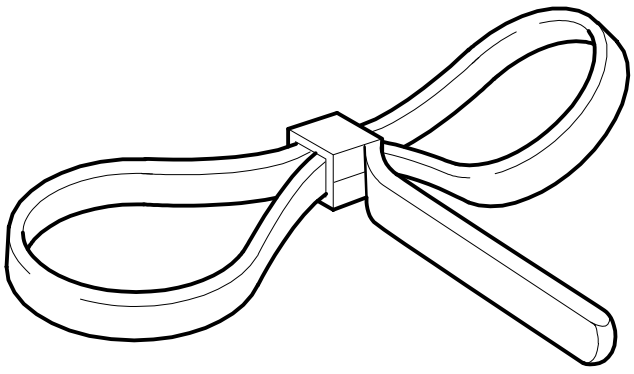
JSI.3529

A) 303-178 Crankshaft Rear Seal Installer
B) 303-384 Crankshaft Rear Seal Installer Adapter Bolts
The bolts are fully screwed into the crank boss and then positioned to receive the Installer which is retained by the washers and nuts.



JSI.3550

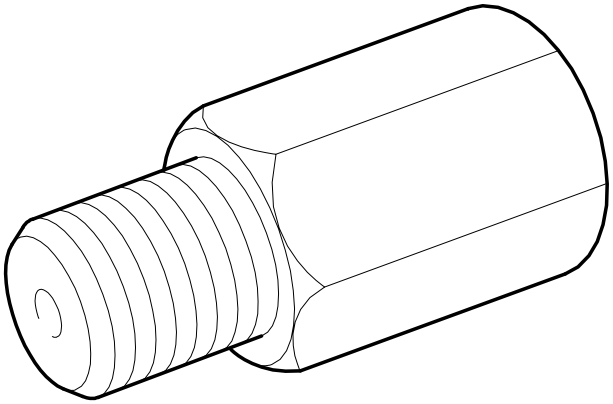
303-409 Crankshaft Front Seal Remover
The toothed bar is inserted between the seal and the shaft and the lever is then used to extract the bar with the seal.



J.303.1538

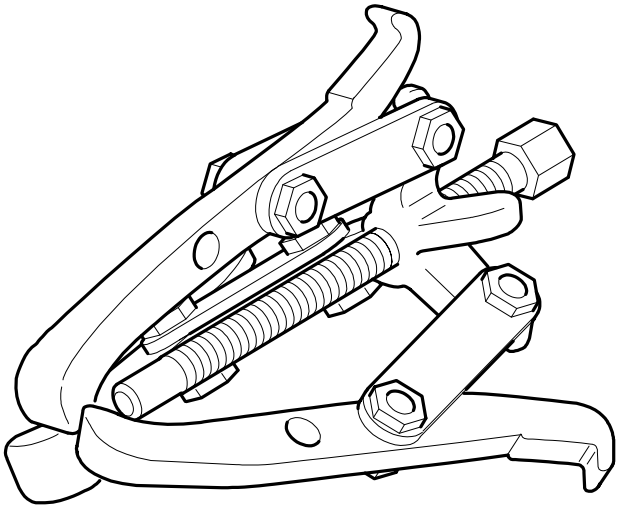
303-D055 Crankshaft Damper Holding Tool Used to prevent Crankshaft Damper rotating during securing bolt removal or replacement.

303-566 Crankshaft Rear Seal Remover
The tool body is screwed into the seal and the center screw is applied against the crankshaft end to withdraw the tool body and seal together.



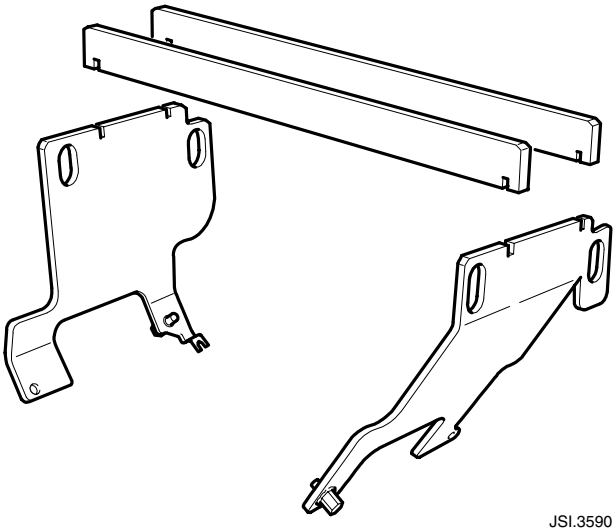
JSI.3530

303-660 Adapter for Oil Pressure - V6/V8
Removal of engine oil pressure sensor is required.



JSI.3589

303-D121 Crankshaft Damper Remover 3 leg puller
Used to remove the V6 crankshaft biration damper.



JSI.3590

303-661 Engine Lifting Bracket

Left hand side: Engine oil level dip stick requires to be removed from dip stick tube. Engine oil level dip stick tube securing bolt requires removing. Forward most exhaust manifold securing nut requires slackening so lift bracket can be slid behind into position. Fit dowel supplied with lifting brackets into threaded hole in lifting bracket and locating into cylinder head.

Fit and tighten engine lifting bracket rear securing bolt.

Tighten forward most exhaust manifold securing nut.

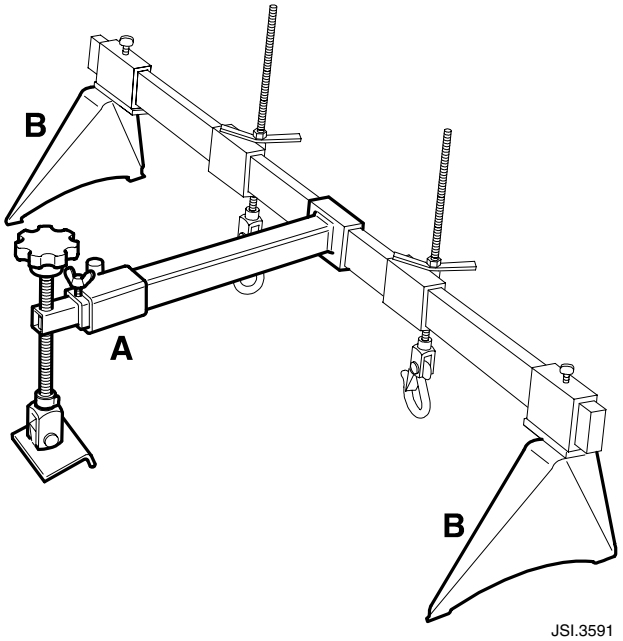
Right hand side: Undo and remove inlet manifold support bracket.

Rearmost exhaust manifold securing nut requires slackening so lift bracket can be slid behind into position.

Fit dowel supplied with lifting brackets into threaded hole in lifting bracket and locating into cylinder head.

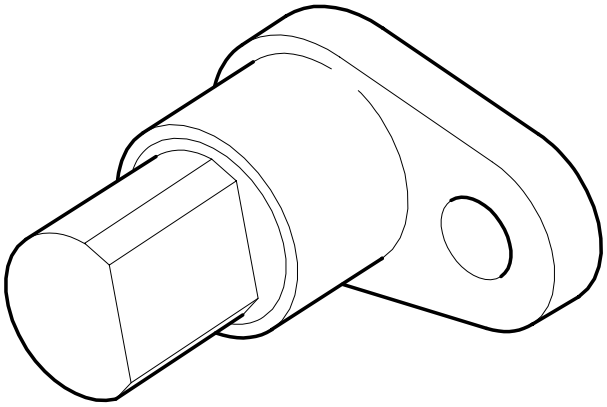
Fit and tighten engine lifting bracket front securing bolt. Tighten rearmost exhaust manifold securing nut.

Both: Fit both brace bars to cutaways in top of engine lifting brackets.



JSI.3591

A) 303-662 Third Leg for MS53D
B) 303-663
B1) End Supports for MS53D

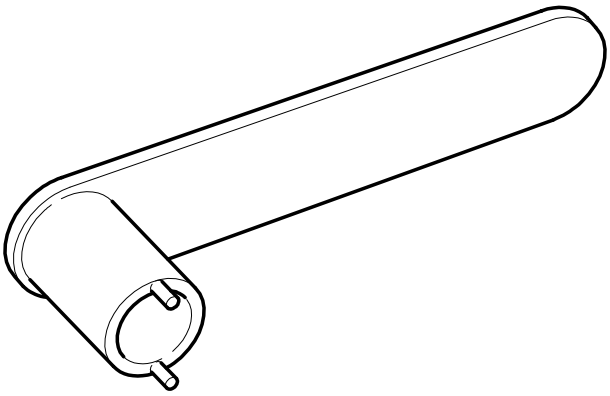


JSI.3531

ENGINE - V8 4.0L (SECTION 303-01V)

303-645 Crankshaft Setting/Timing

The tool is inserted in the position of the Crankshaft speed sensor and aligned to the timing aperture on drive plate.



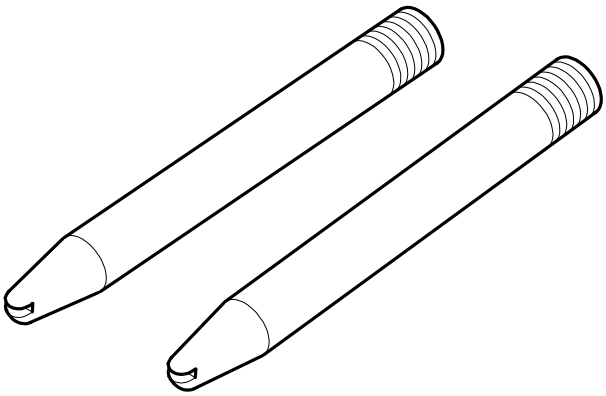
JSI.3527

303-654 VVT Setting Tool

4.0L - This tool is used to position the 4.0L engine VVT units in the fully retarded position during engine assembly.

303-021	Engine Support Bracket	XK8 & V8 XJ Sedan Tool
303-191	Front Pulley Lock	XK8 & V8 XJ Sedan Tool
303-191-02	Front Pulley Lock Adapter	XK8 & V8 XJ Sedan Tool
303-530	Camshaft Setting/Locking Tool	XK8 & V8 XJ Sedan Tool
303-532	Timing Chain Tensioner	XK8 & V8 XJ Sedan Tool
303-533	Timing Chain Wedge	XK8 & V8 XJ Sedan Tool
303-534	Dummy Main Bearing Caps	XK8 & V8 XJ Sedan Tool
303-535	Bore Protector - Con-Rod Installer	XK8 & V8 XJ Sedan Tool
303-536	Engine Rear Lifting Brackets	XK8 & V8 XJ Sedan Tool
303-538	Crankshaft Rear Oil Seal Remover/Replacer	XK8 & V8 XJ Sedan Tool
303-540	Tappet Hold Down Tool	XK8 & V8 XJ Sedan Tool
303-541	Crankshaft Front Oil Seal Remover	XK8 & V8 XJ Sedan Tool
303-542	Crankshaft Front Oil Seal Replacer	XK8 & V8 XJ Sedan Tool
303-588	Remover, Crankshaft Damper	XK8 & V8 XJ Sedan Tool
303-590	Fan Nozzle Air Gun	XK8 & V8 XJ Sedan Tool
307-010	Hydraulic Pressure Test Equipment	XK8 & V8 XJ Sedan Tool

AUTOMATIC TRANSMISSION (5R55N) (SECTION 307-01A)

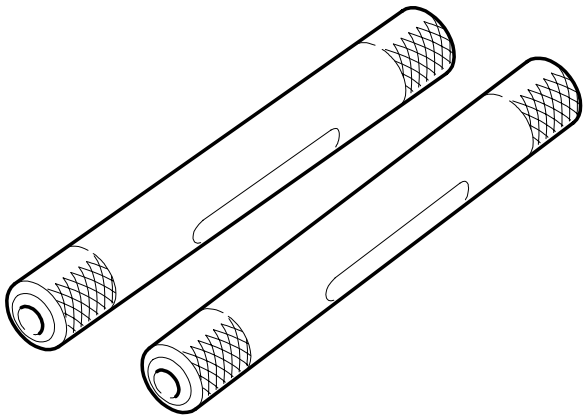


JSI.3549

307-333 Auto Transmission Valve Block Alignment Pin 0.235"

307-334 Auto Transmission Valve Block Alignment Pin 0.248" Refer to JTIS.

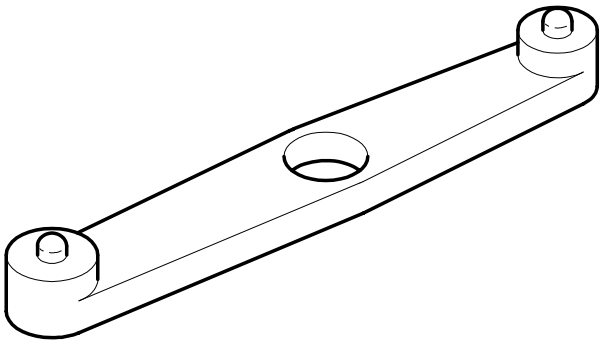
Used to correctly locate the transmission valve body during installation.



JSI.3526

307-091 Torque Converter Handles

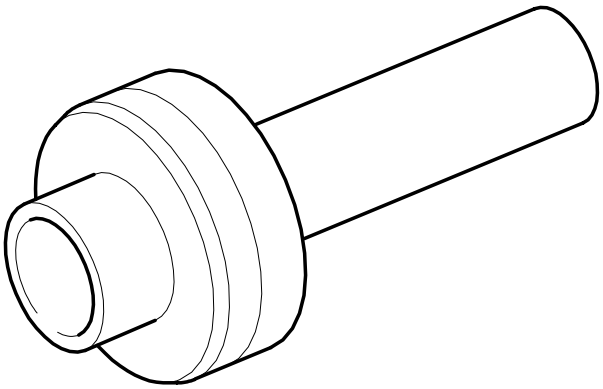
Used to assist the removal and installation of the torque converter from the transmission housing.



JSI.3528

307-403 Flex Plate Aligner

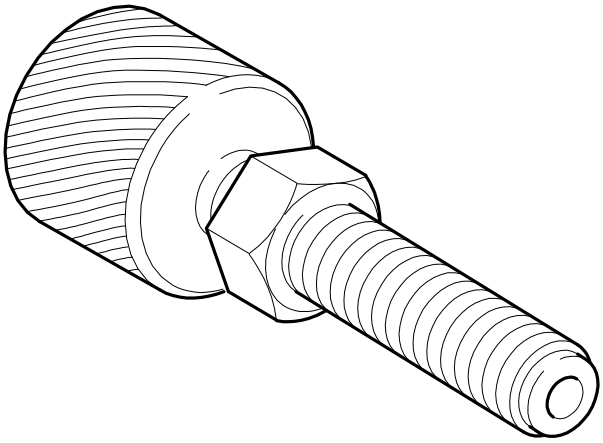
Used to correctly align the V8 engine adapter plate to the torque converter.



JSI.3532

307-407 Extension Housing Seal Refit

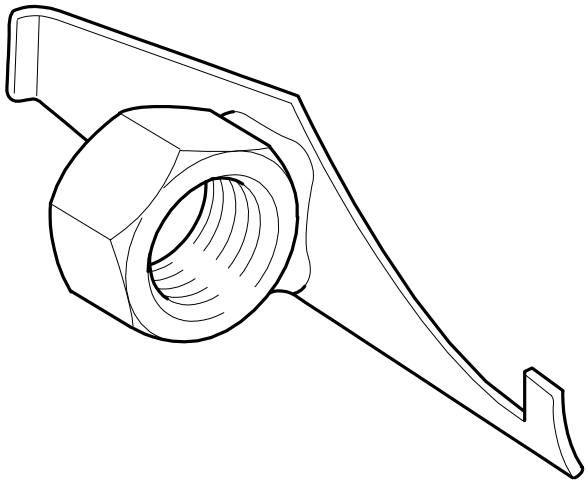
Used to install the transmission extension housing seal.



JSI.3564

100-012-01 Impulse Extractor Adapter

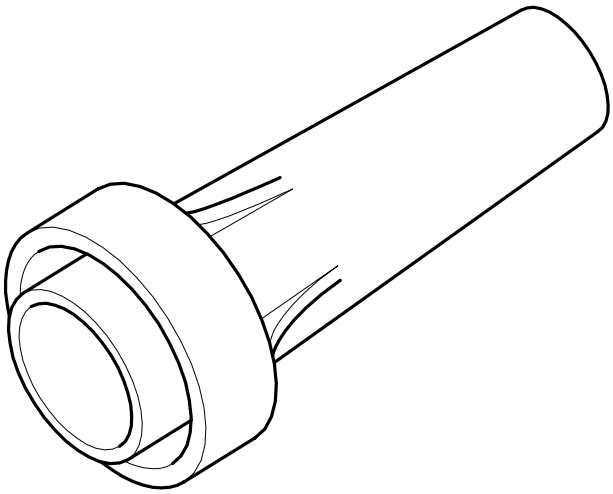
(Use with 100-012 Impulse Extractor & 308-375 Seal Remover Input & Output, see below)



JSI.3560

308-375 Hook Seal Remover Input & Output

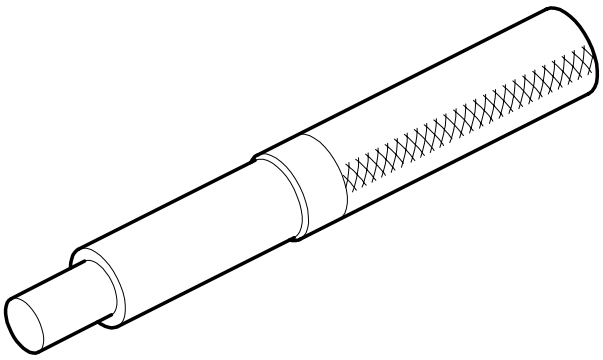
Hook tool behind seal and using slide hammer 100-012 and adapter 100-012-01, extract seal.



JSI.3593

308-246 Front Seal Installer
Used for the correct installation of the transmission torque converter seal.

CLUTCH (SECTION 308-01)



JSI.3533

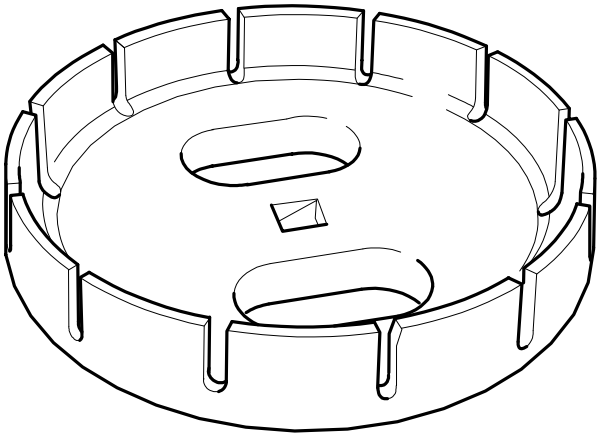
308-419 Clutch Alignment Tool
Used during manual transmission clutch assembly for correct alignment.

MANUAL TRANSMISSION (SECTION 308-03)

308-417 Manual Transmission Input Shaft Seal Replacer

308-418 Manual Transmission Input Seal Remover
Two lugs on end of tool are located with two windows on seal. Tool is driven through seal windows twisted and pulled to extract seal.

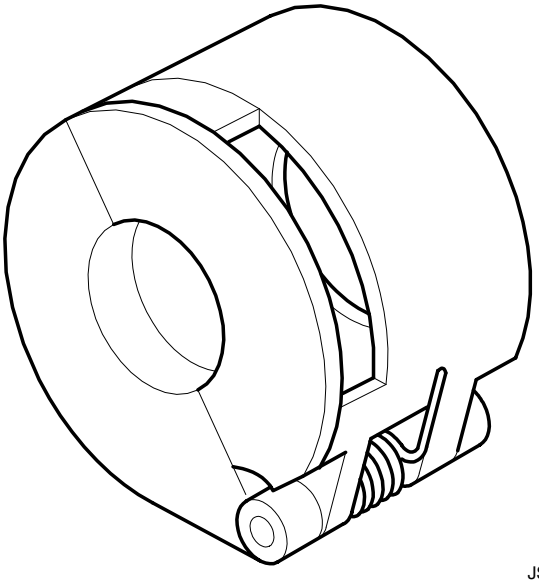
307-136 Output Oil Seal Replacer
XK8 & V8 XJ Sedan Tool



JSI.3559

FUEL SYSTEM (SECTION 310-00)

310-072 Remove/Refit Fuel Pump/Sender Locking Nut

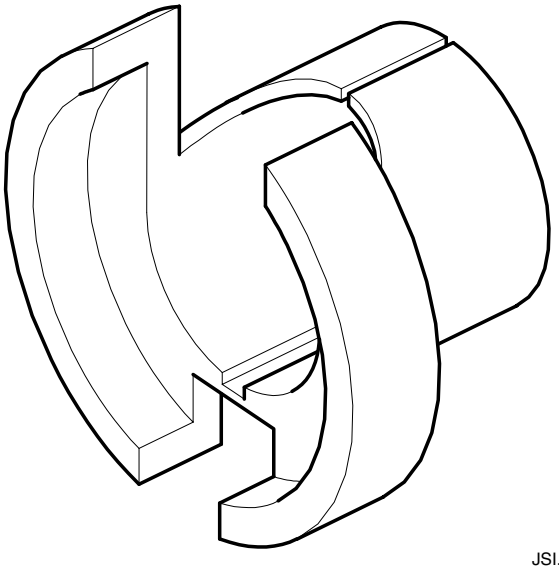


JSI.3554

310-D005 Fuel Pipe Quick Fit Connect Release Tool

Used to separate any spring lock coupling in the fuel system.

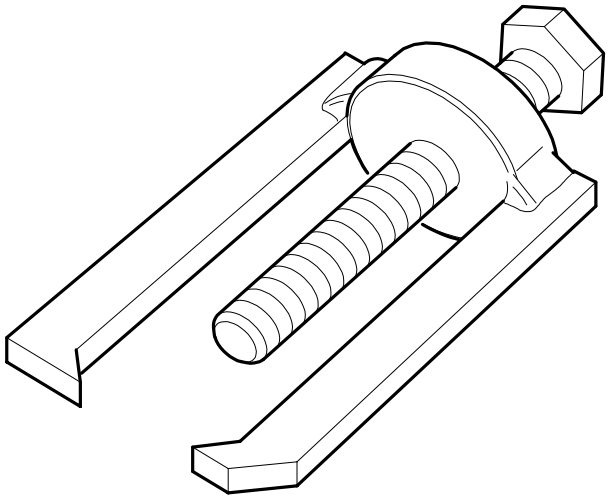
310-077 Fuel Temperature Sensor Disconnect Tool



JSI.3613

GLASS (GLAZING) FRAMES & MECHANISMS (SECTION 501-11)

501-050 Betagun Tool — XK8 & V8 XJ Sedan



JSI.3547

WIPER & WASHER (SECTION 501-16)

501-065 Wiper Arm Removal Tool

310-076	**Air Conditioning Pipe Quick Fit Connector Release Tool**	
418-141	**PDI Link Lead** Allows vehicle to be prepped with the transit isolation device in place.	
501-F006	**Crossbeam/Drive Line To Body Alignment Equipment. Refer to instructions supplied with kit.**	
100-012	Impulse Extractor	XK8 & V8 XJ Sedan Tool
100-013	Driver Handle	XK8 & V8 XJ Sedan Tool
100-019	Multi Purpose Hand Press	XK8 & V8 XJ Sedan Tool
307-010	Hydraulic Pressure Test Equipment	XK8 & V8 XJ Sedan Tool