Steering system makeup

By operating the steering wheel, the wheel direction is changed making the vehicle change direction. In other words, the steering system is a steering device. The fundamental mechanism allows the vehicle's direction to be changed when movement is transferred through the steering wheel gear box from the handle to the wheels.

There are many types of steering gear mechanisms available for steering systems. However, presently the main type is a combination of a rack and pinion gear. The rack gear connected at both ends by a tie rod is also known as the rack and pin method. However, because a large amount of power is required to change wheel direction, most vehicles now employ power steering mechanisms, which assist through hydraulics, and motorized mechanisms.

Wheel alignment

The wheels are fitted on a slight angle (not horizontal or square) to assist steering and drivability, and to keep the vehicle traveling in a straight line. This adjustment is called "wheel alignment" and is made up of 4 elements - caster, camber, toe, king-pin angle.

- **Castor angle**
  The front wheels are fitted off the axle on an angle, just as castors are fitted on the legs of chairs. These are known as castors, by being set on an angle, help keep the vehicle in a constant aligned state.

- **Camber angle**
  The angle seen from the front that is made from the perpendicular line opposed to the ground, and the wheel incline, is known as the camber angle. A negative camber is where the bottom is open, and a positive camber is where the top is open. This affects the vehicle's operation, stability and cornering when turning.

- **Toe-in and Toe-out**
  Looking at the wheel angle from above, toe-in is known as when the vehicle's tracking moves inwards, and toe-out is known as when the tracking moves outwards. When the camber is set to positive, the tendency for the wheels to head outwards will be eliminated and the vehicle's forward tracking will improve.

- **King-pin angle**
  When looking at the vehicle from the front, the king-pin axle faces towards the inside of the chassis leaning upwards. The angle that is perpendicular makes a line from the slant and the surface is known as the "king-pin angle". The angle that it is set to keeps the steering wheel in a straight position and also makes the steering return to the straight position after it has been turned.
**Tightening and loosening Tie-rod end lock nuts**

- **Usage**
  - Tightening and loosening Tie-rod end lock nuts in automobiles (light to normal automobiles)
  - Side slip work at times of inspection and tire replacement.
  - Rack boots replacement work

- **Application**
  - Hexagonal, 2-faced 17~24mm width lock nuts for tie-rod ends (covers most domestically made light~normal sized automobiles).

- **Characteristics**
  - The wrench is designed to grip the angles of the nut firmly and can loosen or tighten nuts without slipping.
  - Even when a large amount of force is applied, the user's hand will not slip and injuries will not occur thanks to the width of the grip.
  - The length of the tools means it does not become obstructed when the vehicle's steering wheels are at full rotate. (Photo 1)
  - As their measurements are provided, the size of the applicable nut can be selected in advance.

---

**Side slip board set**

- **No. ATG92**

- **Step Board AG902**
  - Main body × 1
  - Slope for side slip board × 2
  - Bolts with hexagonal holes (M5 × 10mm) × 2

- **Weight measure on one side. The weight is shown within the brackets.**

- **Wheel load tolerance**
  - 750kg (Weight 1500kg)

- **Display range**
  - Both IN · OUT measurements are 0 ~ 20(mm/m) (Minimum increments of 1mm/m)

- **Display method**
  - Analog, by needle (1)

- **Type**
  - Left/Right separate

---

**Example of use**

No. ATG92

*This product is not a vehicle tester for fitness certificate checks.*

Replacement parts are available

Check with your dealer for details.

---

**CAUTION**

- Make sure that all operators read the Owner's Operator Manual carefully before usage.
- Make sure that all operators are qualified to use this device. (A qualified vehicle maintenance technician or a holder of a special certificate applicable for work in this area.)
- Do not use for non-specified purposes.
- Do not disassemble or modify this product.

* The AG902 (Step board) version does not have a side-slip display function attached. Use the ATG92 (Side slip board set) or the AG901 (Side slip board) x2 in combination with this product.

---

**Vehicle fitness certificate inspections.**

- Easy checks before vehicle fitness certificate inspections.
- Fast check, Side slip
**AUTOMOTIVE SPECIAL TOOLS**

**STEERING SYSTEM**

- **Snap ring removal assy**
- **Tie-rod separation**
- **Disc caliper**
- **Hub nut removal**
- **Wheel removal**
- **Axle disassembling/assembling**

**Replacement parts:** Pointed claws

** Characteristics**

- The open range of the mouth of the snap ring pliers is min. 10mm~max. 36mm
- Installing and removing the snap ring used in the hubs of vehicles.
- Only the claw can be easily replaced.
- The lock can be released easily from the handle.

**Usage**

- All models, except the hole fitted snap ring type, can deal with notched type rings
- Designed for certain models (Toyota).

**Usage**

- Mainly used for the axles of light to normal FF vehicles
- Applicable for steering wheels, diff-companion flanges, and assembled with this set.
- All axles can be disassembled
- Is possible for use on the removal of other bearings and gears
- Is applicable to FR and 4WD rear vehicles, as well as FF axles.

**Application**

- Removing various types of bearings and gears
- Removing the companion flange
- Removing the steering wheel
- Removing the companion flange mission bearing & gear removal, and also a range of bearing & gear removal.
- Removing the steering wheel diff-assembling/disassembling, steering wheel diff-removing various types of bearings and gears
- Removing the companion flange
- Removing the companion flange
- Removing the companion flange

**Other Tools**

- **SNAP RING PLIERS**
- **FOR HUBS**
- **MULTI PULLER**
- **PLASTIC HAMMER**
- **FOR IMPACT WRENCH**
- **WRENCH**
- **SPEED WRENCH**
- **OFFSET WRENCH**
- **HANDLE**
- **WRENCH**
- **ALUMINUM WHEEL CENTER CAP WRENCH**
- **WHEEL NUT SOCKET**
- **FOR IMPACT WRENCH**
- **SOCKET**
- **LOCK NUT CHISEL**
- **IMPACT**
- **BALL JOINT SEPARATOR**
- **RIM WRENCH**
- **OFFSET WRENCH**
- **CROSS RIM WRENCH**
- **HANDLE**
- **MULTI PULLER**
- **SOCKET**
- **HANDLE**

**Check with your dealer for details.**
### 1. Hub removal/installation, Inner race removal/installation, Bearing removal/installation

**Steering wheel (Inner race)**
- Center bolt assy. No. AS301-1
- Hub holder 2 assy. No. AS301-6
- Hub holder 1 assy. No. AS301-5
- Hub plate No. AS301-4
- Arm M No. AS301-3
- Slide arm No. AS301-2

**Steering knuckle (Inner race)**

#### (Toyota, Mitsubishi, Subaru, Nissan types)
- Snap-rings fitted to the inner side of the steering knuckle

**Development chart**

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center bolt</td>
<td>1</td>
</tr>
<tr>
<td>Wing bolt M6</td>
<td>1</td>
</tr>
<tr>
<td>Hub holder 2</td>
<td>1</td>
</tr>
<tr>
<td>Hub holder 1</td>
<td>1</td>
</tr>
<tr>
<td>Hub plate</td>
<td>1</td>
</tr>
<tr>
<td>Arm M</td>
<td>1</td>
</tr>
<tr>
<td>Slide arm</td>
<td>1</td>
</tr>
</tbody>
</table>

**Tools and Accessories**

- IMPACT WRENCH
- Offset wrench 22cm
- STEERING SYSTEM

### 2. Other operating example: The following operations are possible with the multi puller.

**Ex. Multi puller operation**
- The following operations are possible by the multi puller.

#### (Honda, Mazda, Nissan types)
- Snap-rings fitted to the outer side of the steering knuckle

**Development chart**

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center bolt</td>
<td>1</td>
</tr>
<tr>
<td>Wing bolt M6</td>
<td>1</td>
</tr>
<tr>
<td>Hub holder 2</td>
<td>1</td>
</tr>
<tr>
<td>Hub holder 1</td>
<td>1</td>
</tr>
<tr>
<td>Hub plate</td>
<td>1</td>
</tr>
<tr>
<td>Arm M</td>
<td>1</td>
</tr>
<tr>
<td>Slide arm</td>
<td>1</td>
</tr>
</tbody>
</table>

**Tools and Accessories**

- IMPACT WRENCH
- Offset wrench and 22cm

### 3. Removing the steering wheel

- **Center bolt**
- **Wing bolt M6** included

**Quantity**

- Center bolt: 1
- Wing bolt M6: 1

**Parts and Accessories**

- Hexagonal 2-faced width: 22mm
- Full length: 34mm

**Notations**

- 6pt. Sockets are shown in blue letters.
- *Please check the merchandise inventory for a product that is marked by before placing an order.

### 4. Removing the differential companion flange

- **Center bolt**
- **Wing bolt M6** included

**Quantity**

- Center bolt: 1
- Wing bolt M6: 1

**Parts and Accessories**

- Hexagonal 2-faced width: 22mm
- Full length: 34mm

**Notations**

- 6pt. Sockets are shown in blue letters.
- *Please check the merchandise inventory for a product that is marked by before placing an order.

### 5. Removing the transmission bearing

- **Center bolt**
- **Wing bolt M6** included

**Quantity**

- Center bolt: 1
- Wing bolt M6: 1

**Parts and Accessories**

- Hexagonal 2-faced width: 22mm
- Full length: 34mm

**Notations**

- 6pt. Sockets are shown in blue letters.
- *Please check the merchandise inventory for a product that is marked by before placing an order.

### 6. Attaching the wheel

- **Center bolt**
- **Wing bolt M6** included

**Quantity**

- Center bolt: 1
- Wing bolt M6: 1

**Parts and Accessories**

- Hexagonal 2-faced width: 22mm
- Full length: 34mm

**Notations**

- 6pt. Sockets are shown in blue letters.
- *Please check the merchandise inventory for a product that is marked by before placing an order.

### 7. Checking torque

- **Center bolt**
- **Wing bolt M6** included

**Quantity**

- Center bolt: 1
- Wing bolt M6: 1

**Parts and Accessories**

- Hexagonal 2-faced width: 22mm
- Full length: 34mm

**Notations**

- 6pt. Sockets are shown in blue letters.
- *Please check the merchandise inventory for a product that is marked by before placing an order.
AUTOMOTIVE SPECIAL TOOLS

STEERING SYSTEM

*Please check the merchandise inventory for a product that is marked by before placing an order.

Purpose

• Separating tie rod end.

Features

• Tough! Power increased!
  · Rated output power.15kN(1.5t), maximum power, 30kN(3t)
  · Applicable to larger output power compared with former model (BJU-1945).

• High Durability Design
  · Durability enhanced by offset shape.

• Fits various vehicle models
  · Range of opening: 16mm-50mm
  · Applicable tie rod end: from mini cars to large passenger cars (3L)

• Easy operation raises work efficiency.
  · Use of thrust bolt alone enables easy installation and removal of tie rod end.
  · Smooth job using with a drive tool.
  · Square drive (3/8"sq.) adopted. Can hold counterforce of driving tool.

<table>
<thead>
<tr>
<th>No.</th>
<th>L</th>
<th>W</th>
<th>H</th>
<th>Function</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS201</td>
<td>135</td>
<td>55</td>
<td>116</td>
<td>TIE ROD END SEPARATOR</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BALL JOINT SEPARATOR (OFFSET TYPE)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No. L W H

<table>
<thead>
<tr>
<th>AS202</th>
<th>165</th>
<th>70</th>
<th>160~200</th>
<th>3.0</th>
<th>1</th>
</tr>
</thead>
</table>

Purpose

• Separating ball joint.

Features

• Study design of the rated output, 2.5t
  • Use of thrust bolt alone permits removal and pulling out of rod end.
  • Smooth job using with a drive tool.
  • Square drive (3/8"sq.) used. Can hold counterforce of driving tool.

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS202-A24</td>
<td>Claw</td>
<td>0.7</td>
</tr>
<tr>
<td>AS202-J</td>
<td>Jaw</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Application Table

Object Models: Mini Cars, Compact Cars

<table>
<thead>
<tr>
<th>Tie Rod End</th>
<th>Susp. Upper</th>
<th>Susp. Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>●●</td>
<td>●</td>
<td>×</td>
</tr>
</tbody>
</table>

Width Across Flats (hexagon):24mm

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAU-3747</td>
<td>Mini &amp; Compact cars, trucks &amp; tractors</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Usage

• Pulls of pitman arm from center shaft quite easily.
  • Forged claws with proper heat-treatment.
  • A cord supplied for tying to prevent fall off.
  • Fastening and claws will contact deeply to inside.

Application

• Pitman outer diameter 37~47

1. Removing wheel
2. Removing tie rod
3. Removing pitman arm
4. Removing lock nut
5. Separating & removing drive shaft & hub
6. Disassembling/Installing drive shaft band
7. The attaching of the drive shaft to the chassis
8. Attaching the wheel

P.217

P.218

P.119

P.217
Combination SLIDE HAMMER PULLER

Purpose
• Body shop working.

Application
• For mini cars, passenger cars and pickup trucks.

Special features
• Safety-conscious design.
• Big and small hammers with weights 3.5 kg and 1.2 kg for wide application.

<table>
<thead>
<tr>
<th>No.</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>L</th>
<th>Shocker</th>
<th>Weight</th>
<th>Screw Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD3</td>
<td>60</td>
<td>68</td>
<td>30</td>
<td>14</td>
<td>580</td>
<td>1.2 kg</td>
<td>W9/16-12</td>
</tr>
<tr>
<td>AUD4</td>
<td>85</td>
<td>68</td>
<td>30</td>
<td>18</td>
<td>675</td>
<td>3.5 kg</td>
<td>M18 × 2.0</td>
</tr>
</tbody>
</table>

SLIDE HAMMER PULLER ATTACHMENT

Screw size conversion adapter set for slide hammer

<table>
<thead>
<tr>
<th>No.</th>
<th>ATUD302</th>
<th>ATUD402</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD3</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>AUD4</td>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

Screw size convertible adapter set for slide hammer puller

<table>
<thead>
<tr>
<th>No.</th>
<th>ATUD307</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD3</td>
<td>500</td>
</tr>
<tr>
<td>AUD4</td>
<td>500</td>
</tr>
</tbody>
</table>

SLIDE HAMMER PULLER ATTACHMENT

<table>
<thead>
<tr>
<th>No.</th>
<th>ATUD302</th>
<th>ATUD402</th>
</tr>
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<tbody>
<tr>
<td>AUD3</td>
<td>500</td>
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<td>AUD4</td>
<td>500</td>
<td>500</td>
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<tr>
<td>AUD3</td>
<td>500</td>
</tr>
<tr>
<td>AUD4</td>
<td>500</td>
</tr>
</tbody>
</table>

LOCK NUT CHISEL

Purpose
• Removal (Attachment) of sealed type lock nuts on drive shafts.

Application
• Most of sealed type lock nuts used on drive shafts.

Features
• Sealing and pulling up of sealed part lock nuts is possible with one single chisel.
• Ship-shaped tip facilitates pulling up of the caulked part by hitting the chisel head.
• Grip, made of rubber, is easy to handle and is provided with the flange for protection of your hand.
• Forged and strong!

<table>
<thead>
<tr>
<th>No.</th>
<th>a</th>
<th>b</th>
<th>D</th>
<th>L</th>
<th>Shocker</th>
<th>Weight</th>
<th>Screw Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS404</td>
<td>0.4</td>
<td>4.5</td>
<td>50</td>
<td>173</td>
<td>51</td>
<td>350</td>
<td>10</td>
</tr>
</tbody>
</table>

DRIVE SHAFT REMOVER FOR SLIDE HAMMER

Purpose
• Removing drive shaft from trans-axle (FF vehicle).
• Used exclusively with slide hammer puller (AUD3).

<table>
<thead>
<tr>
<th>No.</th>
<th>SIze</th>
<th>Screw Size (puller-side)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUD3-AD1</td>
<td>250</td>
<td>× 32 × 28 W9/16-12</td>
</tr>
</tbody>
</table>

When using the slide hammer, mind working posture and the position of hands. Improper position can result in injury.

1. Removing wheel
2. Removing tie rod
3. Removing pitman arm
4. Removing lock nut
5. Separating & removing drive shaft & hub
6. Disassembling/Installing drive shaft band
7. The attaching of the drive shaft to the chassis
8. Attaching the wheel
### HANDY BAR

- **Purpose**: Drawing axle shaft and brake drum.
- **Special feature**: Can be used for both 4 holes and 5 holes types.
  - Can hold reactive force from driving tool as square drive (3/8" sq.) used.
  - Open-end wrench usable as width across flats provided. Can hold counterforce.

### HUB PULLER FOR SLIDE HAMMER PULLER

- **Purpose**: Pulling out the axle shaft/brake drum and pushing out the drive shaft.
- **Application**: 6 hole type hub for vehicles.
- **Characteristics**:
  - Deep hole design is compatible with the front free wheel hubs on 4 wheel drive vehicles.
  - With a 12.7 sq drive, force application can be maintained by the drive tool.
  - The 27mm 2-faced width allows the application force to be maintained while using adjustable wrenches.

### BOOT BAND CUTTER

- **Usage**: Cutting the boot or boot band of the drive shaft.
- **Application**: Stainless boot band of the drive shaft on light weight vehicles to standard vehicles.
- **Characteristics**:
  - Cutting can be conducted while the boot band is attached.
  - The boot band can also be cut, increasing overall operation speed. (Fig. 1)
  - The same tool can be used to cut the boot after cutting the band. (Fig. 2)
  - The attached spring allows easy opening while the stopper allows storage in a compact form.
  - Pushing the stopper while holding the handle will fix the tool in a position where the handle is closed, reducing the total storage space occupied by the tool. (Fig. 3)
  - Springs are available as replacement parts. Check with your dealer for details.

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Product Name</th>
<th>L</th>
<th>2-Faced Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS30-1</td>
<td>Center Bolt (M18 × 2.0)</td>
<td>138</td>
<td>19</td>
</tr>
<tr>
<td>AS309</td>
<td>Center Bolt (M14 × 2.5)</td>
<td>408</td>
<td>19</td>
</tr>
</tbody>
</table>

**Center Bolt Size**: M18 × 2.0

**2-Faced Width**:
- 19mm
- 27mm
- 19mm

---

*Please check the merchandise inventory for a product that is marked by before placing an order.*
Disassembling/Installing drive shaft band

**CENTER PUNCH**

**BOOTS BAND TOOL WITH CUTTER**

**Usage**
- Fastening/cutting of the band fixing the joint boot of drive shaft.

**Application**
- Applicable to quality boot bands (all sizes) for mini cars to compact cars.

**Features**
- Ratchet mechanism ensures effective winding of the band.
- Only one action required for bending and cutting of the band.

**No. B T t L**

| AS401 | 26 | 43 | 8 | 160 | 180 | 1 |

**Method of use**
- Set the boot band tool.
- Insert the boot band attached to the boot of the drive shaft into the slit in the boot band tool.
- Twist away the boot band.
- Twist the boot band by turning the handle clockwise.
- Turn back the boot band and cut.
- Lower the boot band tool (in the direction of the arrow) until the boot band is cut.
- Sealing the boot band
  - Adjust and reshape the boot band after cutting using hammers and punches.

**BOOTS BAND TOOL WITH CUTTER PAT. P**

**EXTERNAL SNAP-RING PLIERS**

**No. Content of set**

| AS403A | AS403A Claws: 4 sets |
| AS403B | AS403B Claws: 4 sets |

**Usage**
- Useful in the removal and installation of snap-rings without grips that aid removal.

**Application**
- **<AS403A>**
  - Standard snap-ring without removal aid.
  - Working with narrow rings in openings is easier as the tip of the claw is of a thin design.
- **<AS403B>**
  - This is a special tool designed for Honda snap-rings that are fitted in narrow openings with their gripping areas placed on an angle.
  - Wear and tear is limited to the claw, and therefore only the claw needs replacing.

**Characteristics**
- **<AS403A>**
  - As the tip is of a step fitted shape, previous hard to work with snap-ring removal/installation is now easier.
  - Vertical and horizontal settings are possible depending on the position of the axle.
- **<AS403B>**
  - Suitable for snap-ring removal/installation in Honda vehicles that are traditionally hard to work with.
  - Spare parts are available for springs and claw type screws.

**PARTS FOR REPLACEMENT END CLAW**

| Ring type A | Ring type B |
| AS403A (Thin end type) | AS403B (Special tipped type) |

Exclusive to Honda vehicles

* Spare parts are available for springs and claw type screws.
Method of use
Apply molybdene grease over the specified area before operating. Do not grasp the boot with the tip of the claw.

Refer to the maintenance manual of the car manufacturer for each individual sealing dimension before carrying out operation.

Widen the claw by turning the center bolt and allow the sealing section of the boot band to enter.
Touch the sealing section of the boot band with the claw.
Tighten the bolt using a 14mm drive tool (offset wrench can be used).

Confirm end of operation.
Loosen the center bolt and remove the boot band tool.

CAUTION

Usage
• An exclusive tool used for sealing the boot band on the drive shaft of vehicles

Application
• The tool is compatible with light weight to passenger type vehicles using the sealing type boot band.(Can be used for imported vehicles)

Characteristics
• Sealing is made easy by a simple bolt screw-in operation.
• The operation is faster and easier when using wrenches, such as the ratchet type, etc.(Hexagonal 2-faced width 14mm)
• As the center bolt is fitted with a flange, an offset wrench can be used and the wrench will not slip off.
• A resin grip is employed for the handle to prevent slippage.
• A claw form has been employed to stop the sealing section from rising.
AUTOMOTIVE SPECIAL TOOLS

STEERING SYSTEM

*Please check the merchandise inventory for a product that is marked by before placing an order.

**Usage**

- Suitable for exchanging grease used in heavy-load bearings of large-sized vehicles.
- For exchanging grease in the hub bearings during inspection and servicing of vehicles for general use.
- Wide range of applications. For bearings of various sizes used in automobiles (from mini-cars to large-sized trucks) and construction machinery.
- Easy handing, improved work efficiency, keeps hands clean. Grease can be exchanged easily, requiring no skill. Operator's hands stay clean and free of grease, so he can proceed working immediately.
- Reduced grease consumption by eliminating waste. Only a minimal amount of grease is required, Grease can be used completely to the bottom of a can, so you can save more grease than is possible with manual exchange operation.
- Simple, highly reliable mechanism.

**GREASE EXCHANGER HIGHLOAD**

**Main body appearance**

View when the main body is attached

**Features**

- Work time can be reduced to about 1/7 compared to the previous method.
- Useful in wide range of application.
- Keeps your hands clean and raises work efficiency.
- Grease in the can can be used up completely so waste can be eliminated and grease can be saved.
- KTC® -original pumping unit exchanges grease easily by using fresh grease to push out old grease.

**No. Applicable Container Applicable Bearings**

<table>
<thead>
<tr>
<th>No.</th>
<th>Applicable Container</th>
<th>Applicable Bearings</th>
</tr>
</thead>
<tbody>
<tr>
<td>GZR18</td>
<td>16kg round cans</td>
<td>15~100 19 1</td>
</tr>
<tr>
<td>GZ18</td>
<td>16kg round cans</td>
<td>15~100 8.2 1</td>
</tr>
</tbody>
</table>

**Condition of Use**

CZR18 is the heavy-duty model of GZ18.

**ASSEMBLY PARTS FOR GREASE EXCHANGER**

<table>
<thead>
<tr>
<th>GREASE EXCHANGER HIGHLOAD ASSY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREASE EXCHANGER HIGHLOAD ASSY.</td>
</tr>
</tbody>
</table>

**Grease charging heavy load bearings of large automobiles.**

**Grease charging to hub bearing of various automobiles in inspection or service.**
**AIR GREASE FEEDER**

**Usage**
Dedicated equipment for feeding grease into tapered roller bearings during grease exchange or supply for medium-to large-sized trucks.

**Application**
Bearings with cone side bores of 15 to 100 mm, hose side bores of 45 to 90 mm and bearing pitches of 15 to 21 mm.

**Features**
- With the nozzle adapter, fresh grease pushes out old grease, without need to remove each bearing.
- Grease can also be fed into a removed bearing by installing it on the cone.
- Grease can be fed even at around-10°C by proper piston speed control operation.
- Foreign objects (such as moisture and dirt) in compressed air are filtered out by an air filter, preventing air regulator operation failure.
- The built-in air regulator ensures air supply at optimal pressure.
- Easy operation and setup reduces work time.
- The carrier is equipped with a can stopper band and plate that prevents the grease can from falling or being displaced.

**DO NOT PULL THE LEVER EVEN AFTER REMOVAL OF THE AIR HOSE. OTHERWISE, GREASE MAY SCATTER INTERNALLY DUE TO RESIDUAL PRESSURE.**

**STORE IN PLACES WHERE YOU CAN AVOID FREEZING.**

**USE CLEAN AIR FOR INPUT.**

**CAUTION**

<table>
<thead>
<tr>
<th>Cone side Bore 15 to 100 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose side Nozzle Adapter</td>
</tr>
<tr>
<td>Nozzle adapter Bore 45 to 90 mm</td>
</tr>
<tr>
<td>bearing pitch 15 to 21 mm, equivalent to front-rear tapered roller bearing for 4 to 10 t vehicles</td>
</tr>
</tbody>
</table>

**Applicable bearings**

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Name</th>
<th>Q'ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVG35-2</td>
<td>Locking upper cone</td>
<td>1</td>
</tr>
<tr>
<td>AVG35-4</td>
<td>Inner cover</td>
<td>1</td>
</tr>
<tr>
<td>AVG35-6</td>
<td>Nozzle adapter set</td>
<td>1</td>
</tr>
<tr>
<td>AVG35-7</td>
<td>Straight adapter</td>
<td>1</td>
</tr>
<tr>
<td>AVG35-7-7</td>
<td>Nozzle set (with 4 nozzles)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Name of parts and their applications**

- **Cone (upper, lower)**
  (Also applicable to heavy-load bearings.)
- **Cone side switch**
  Push to discharge.
  Release to stop.
- **Speed control**
  (Adjusts discharge at low temperatures.)
- **Main body removal handle**
- **Outer cover**
- **Can stopper band**
- **Hose (2.5 m)**
- **Dust cover**
- **Hose hook**
- **Carrier**
- **Inner cover removal handle**
  (For easy removal without staining hands.)
- **Straight adapter**
  (Enables easy charging between outer)
- **Grease catch pan**
  (size 200 × 95 × 140)
- **Adapter gun**
  (Grasp lever to discharge.)
- **Nozzle adapter**
  Slider-type pitch adjustment mechanism for 4 to 10t vehicle bearings.

**Supply parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>AVG35</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump type</td>
<td>Air-driven plunger pump</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>460 × 360 × 1,190</td>
<td></td>
</tr>
<tr>
<td>Discharge</td>
<td>500g/min. on nozzle side (No.3 grease, 29°C, no load)</td>
<td></td>
</tr>
<tr>
<td>Discharge pressure</td>
<td>75~80kg / cm²</td>
<td></td>
</tr>
<tr>
<td>Air pressure</td>
<td>6~9.8kg / cm²</td>
<td></td>
</tr>
<tr>
<td>Grease type</td>
<td>No.0~No.3</td>
<td></td>
</tr>
<tr>
<td>Can</td>
<td>16kg pail can</td>
<td></td>
</tr>
<tr>
<td>Temperature Condition</td>
<td>0~40°C</td>
<td></td>
</tr>
</tbody>
</table>

**These parts are also optionally available.**