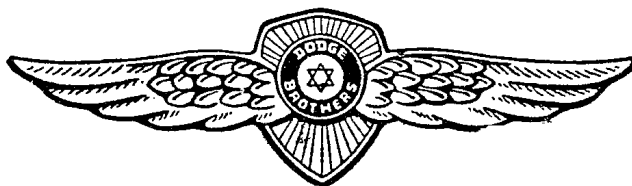


DODGE TRUCK SHOP MANUAL

1940 SERIES

VC VD, VF, VG, VH, VK, VL
VM, VKD, VLD



CHRYSLER CORPORATION

Dodge Division

DETROIT, MICHIGAN

DODGE TRUCK SHOP MANUAL

VC, VD, VF, VG, VH, VK, VL,
VM, VKD, VLD

FOREWORD

THIS manual is intended as both a guide and a reference book in the complete servicing of Dodge trucks.

It is complete in its operation detail, but brief and pointed in its instructions; essentials, properly organized, is its aim.

The book is divided into two major sections.

1. Servicing Methods.
2. Service Standards.

Servicing Methods have been grouped according to major assemblies of the truck. Under each major unit the operations have been carefully outlined and numerous action illustrations with proper tools in use have been introduced to clarify the text. Each subject has been treated in the following steps, in so far as it has been possible:

1. Removal and Installation.
2. Adjustments.
3. Maintenance.

Service Standards have been tabulated for the purpose of separating adjustments and standard sizes from the text and making them available for quick reference.

All service tools listed are obtainable from the Miller Tool and Mfg. Company, Detroit, Michigan. A complete catalog of such service tools will be supplied by the Miller Tool and Mfg. Company, on request.

A thorough understanding of the contents of this manual is necessary to every good service department. Study it carefully and frequently.

CHRYSLER CORPORATION

Dodge Division

DETROIT, MICHIGAN

Index	Page
Axle—Front	5
Axle—Rear	19
Brakes	51
Clutch	69
Cooling System	79
Electrical System	91
Engine—Carburetor type	107
Engine—Dodge Diesel type	209
Fuel and Exhaust	135
Frame, Springs and Shock Absorbers	149
Steering	159
Trans. and Univ. Joints	167
Wheels and Tires	187
Body	197
Lubrication	231
Service Standards	245

THE PROPER CARE OF NEW ENGINES

The life of a truck depends on the care it receives for the first 500 to 1500 miles of operation, and every owner should be carefully instructed along these lines when delivery is made to him.

New or reconditioned engines should never be driven in excess of 25 miles per hour in direct drive for the first 500 miles of operation. During the next 2000 miles of operation the speed may be gradually increased to complete the breaking-in process. The truck must not be driven at continued high speeds for the first 2500 miles. Be sure that the engine has been driven at least 4000 miles before attempting to make it produce maximum power. This mileage is necessary to make sure that all internal engine friction has been minimized.

Gradually burnishing the bearing surfaces, by careful initial use, will create a very hard and smooth glazed surface which is most desirable and has much to do with the length of the life of the parts before wear makes replacement necessary.

NOTE: Engine assemblies shipped from the factory or reconditioned engines built up in service stations, should be run several hours be-

fore driving the truck and then the truck should be driven with the same caution as when new.

In new or reconditioned engines the oil should be drained after the first 500 miles of operation and refilled with an oil as recommended in the "Lubrication" section of this shop manual the same as for new trucks.

COLD ENGINES

When starting cold engines (whether new or not) care should be exercised during the warming up period. The engine should always be allowed to run at idle speed for a few minutes before driving the truck and then the truck should be driven slowly until normal operating temperature is reached. It must be remembered that the cause of damage to new bearings and pistons, as well as cold engines is principally due to extremely high temperatures of the frictional surfaces. These high temperatures are the result of excessive speeds of the rotating or reciprocating parts. Some owners may drive their trucks within the recommended speed in low and second gear, yet the engine will be turning more R.P.M. than would be necessary to drive the truck 35 miles per hour in direct drive. Owners should be cautioned about this.

SEASONAL PREPARATION

Seasonal preparation service should be performed in the spring and fall each year to prepare trucks for the approaching extreme temperature season. Very warm weather comes soon after spring and very cold weather comes soon after fall. It is these extremes of temperature and road conditions which warrant preparing the trucks for the approaching season so as to avoid possible difficulties and to maintain maximum performance.

In the "Engine-Carburetor Type," section of this shop manual you will find complete procedures for engine tune up. The "Minor Tune Up" is recommended as being performed frequently to maintain top performance. Of course the "Major Tune Up" procedure together with the "Performance Inspections" have much to do with maintenance of top performance, but it should not be necessary to give an engine a major tune up more than about twice a year to forestall an approaching decline of engine performance. The "Minor Tune Up," "Performance Inspections" and "Major Tune Up" operations are recommended as good "Seasonal Preparation" (spring and fall).

Suitable anti-freeze solutions should be used (see "Cooling System") at the approach of freezing weather, and after the cold season is past the anti-freeze should be removed. Whenever anti-freeze solution replaces clear water or

whenever clear water replaces an anti-freeze solution it is recommended that the entire cooling system be flushed as described in the "Cooling System" section of this shop manual.

The lubrication chart and other text matter in the "Lubrication" section of this shop manual indicate different viscosities of lubricants for different temperatures of different major units of the trucks. While it is not imperative to make changes of lubricants at exact temperatures, it is good practice to make certain that lubricants are of low enough viscosity to permit proper lubrication and minimize cold lubricant resistance before the cold weather comes. This is especially true with engine oil. Thin oil permits easy starting of a cold engine and quicker distribution of oil after starting; both of which, in turn, lead to minimizing battery load and minimizing bearing and piston wear.

In addition to "Engine Tune Up," inspection of other parts of the truck at the time of "Seasonal Preparation" is good practice from the customer's viewpoint as well as the dealer's. It may indicate necessity for correction of wheel alignment, brake adjustment, brake lining replacement or lighting equipment replacement. Parts of the steering mechanism may need adjustment or replacement. All such items have much to do with the safety of driving during the approaching season.

SERVICE BULLETIN REFERENCE

[illegible]

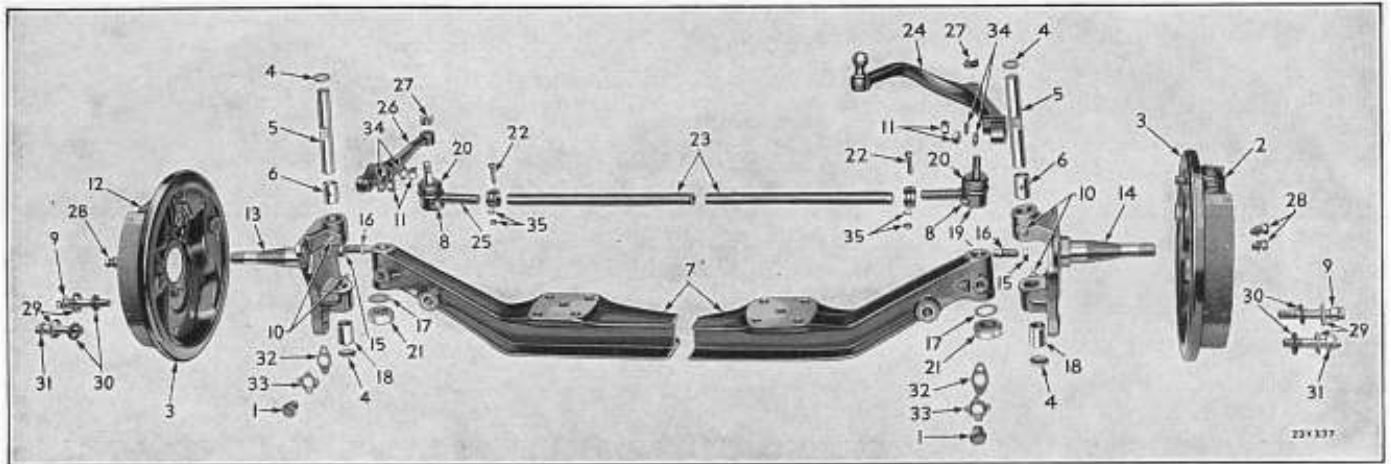


Fig. 1—Front Axle (VC, VD)

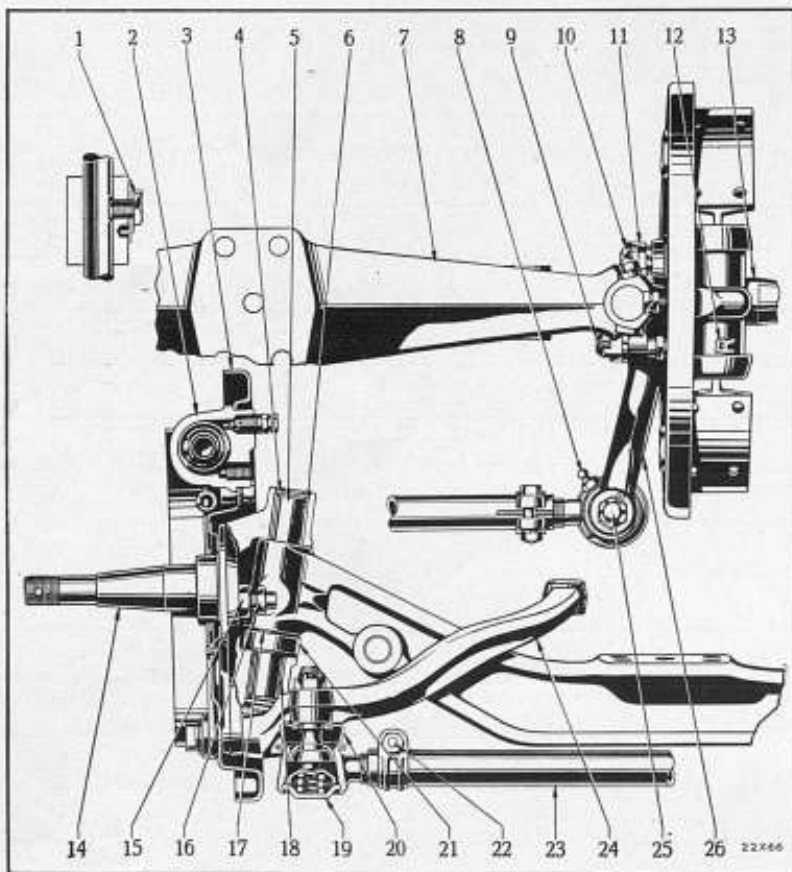


Fig. 2—Front Axle (VC, VD)

Figs. 1 and 2—Front Axle (VC, VD)

- 1—Steering knuckle king pin lock screw
- 2—Brake wheel cylinder assembly—front—left
- 3—Front wheel brake support
- 4—Steering knuckle king pin oil seal plug
- 5—Steering knuckle king pin
- 6—Steering knuckle king pin bushing
- 7—"I" beam
- 8—Steering knuckle tie rod end lubricant nipple
- 9—Front wheel brake shoe anchor bolt—long
- 10—Steering knuckle king pin lubricant nipple
- 11—Front wheel brake shoe anchor bolt nut and cotter pin
- 12—Brake wheel cylinder assembly—front—right
- 13—Steering knuckle—right
- 14—Steering knuckle—left
- 15—Steering knuckle stop screw lock nut
- 16—Steering knuckle stop screw
- 17—Steering knuckle thrust bearing shims
- 18—Steering knuckle king pin bushing
- 19—Steering knuckle tie rod end assembly—right hand thread
- 20—Steering knuckle tie rod end dust cover
- 21—Steering knuckle thrust bearing
- 22—Steering knuckle tie rod end clamp bolt
- 23—Steering knuckle tie rod tube
- 24—Steering knuckle steering arm—left
- 25—Steering knuckle tie rod end assembly—left hand thread
- 26—Steering knuckle steering arm—right
- 27—Steering knuckle tie rod end stud nut and cotter pin
- 28—Front wheel brake support screw and lockwasher
- 29—Front brake shoe anchor bolt oil washer retainers
- 30—Front wheel brake shoe anchor bolt—short
- 31—Front wheel brake shoe anchor bolt—short
- 32—Steering knuckle king pin set screw spring washer
- 33—Steering knuckle king pin set screw lock
- 34—Front wheel brake shoe anchor bolt nut lockwashers
- 35—Steering knuckle tie rod end clamp bolt nut and lockwasher

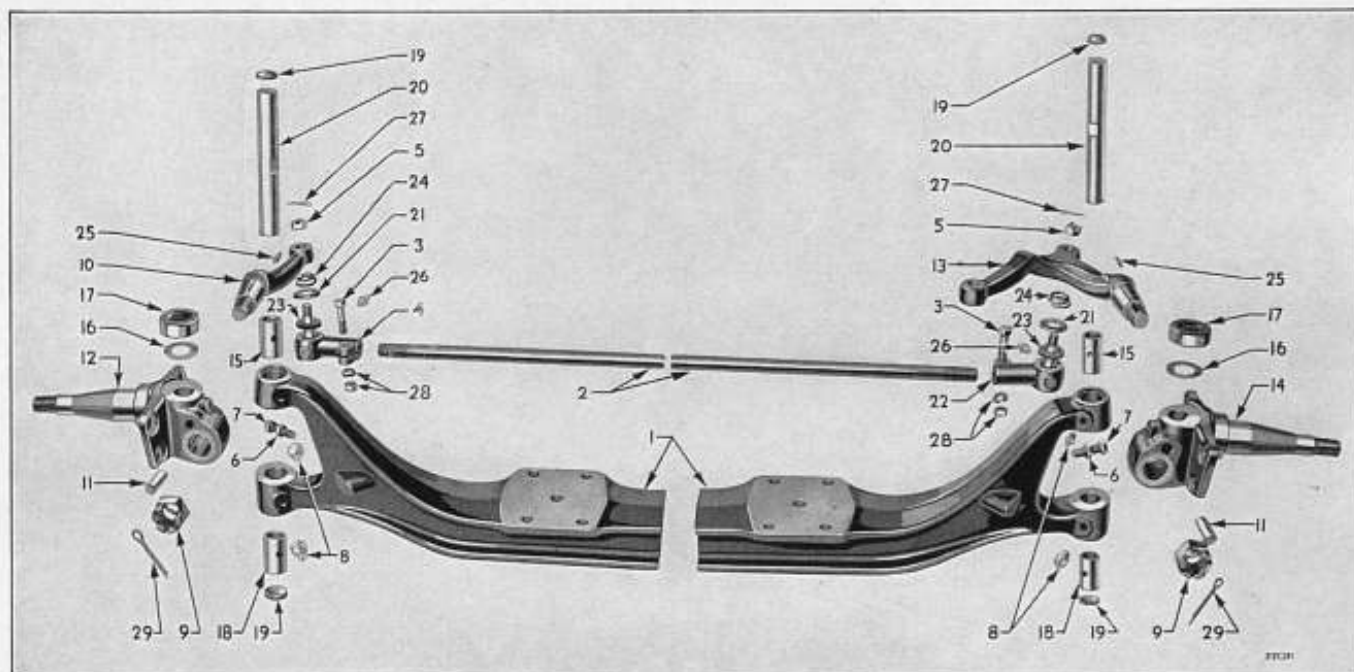


Fig. 3—Front Axle (VF)

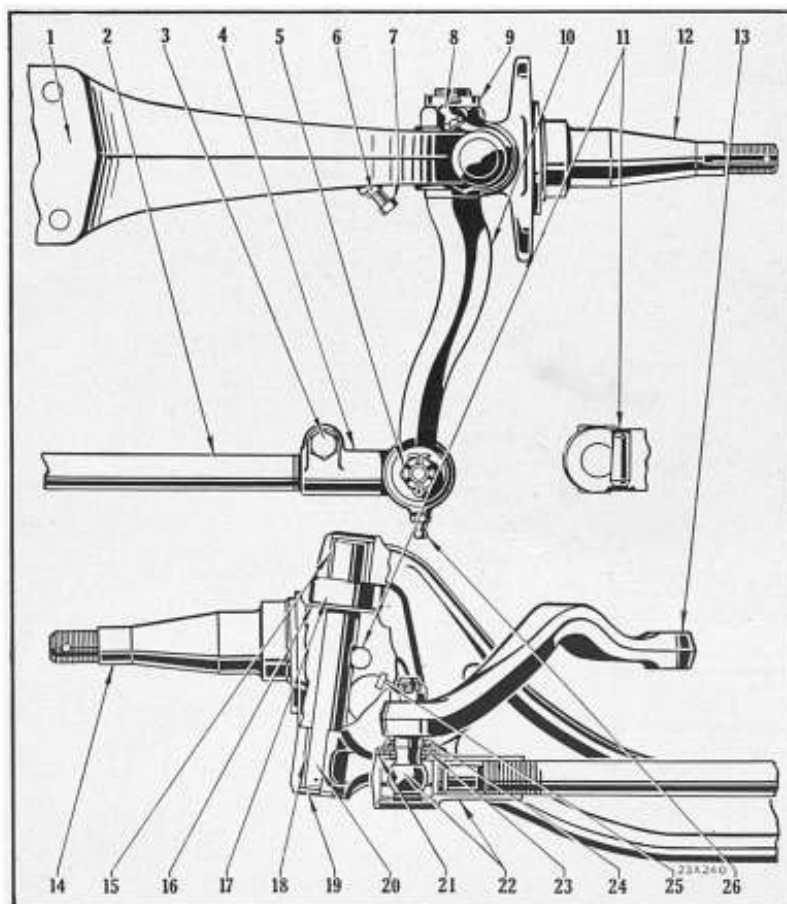


Fig. 4—Front Axle (VF)

Figs. 3 and 4—Front Axle (VF)

- 1—Front axle "I" beam
- 2—Steering knuckle tie rod
- 3—Steering knuckle tie rod end clamp bolt
- 4—Steering knuckle tie rod end assembly—right
- 5—Steering knuckle tie rod bolt nut
- 6—Steering knuckle stop screw lock nut
- 7—Steering knuckle stop screw
- 8—Steering knuckle pivot lubricant nipple
- 9—Steering knuckle arm nut
- 10—Steering knuckle arm—right
- 11—Steering knuckle pivot lock pin
- 12—Steering knuckle—right
- 13—Steering knuckle arm—left
- 14—Steering knuckle—left
- 15—Front axle "I" beam bushing—upper
- 16—Steering knuckle thrust bearing shims
- 17—Steering knuckle thrust bearing
- 18—Front axle "I" beam bushing—lower
- 19—Steering knuckle pivot oil seal plug
- 20—Steering knuckle king pin or pivot
- 21—Steering knuckle tie rod end dust cover
- 22—Steering knuckle tie rod end assembly—left
- 23—Steering knuckle tie rod end dust washer
- 24—Steering knuckle tie rod end dust cover spring
- 25—Steering knuckle arm key
- 26—Steering knuckle tie rod end lubricant nipple
- 27—Steering knuckle tie rod bolt nut cotter pin
- 28—Steering knuckle tie rod end clamp bolt nut and lockwasher
- 29—Steering knuckle arm nut cotter pin

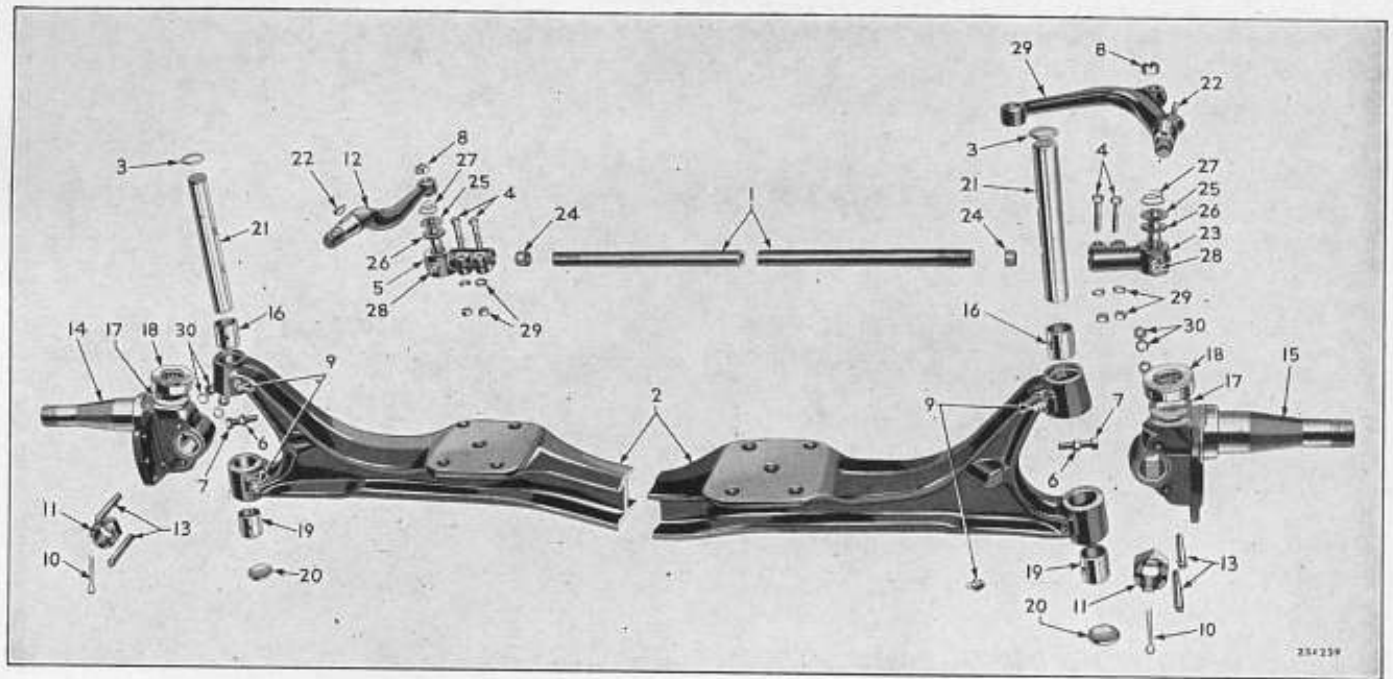


Fig. 5—Front Axle (VM, VG, VH)

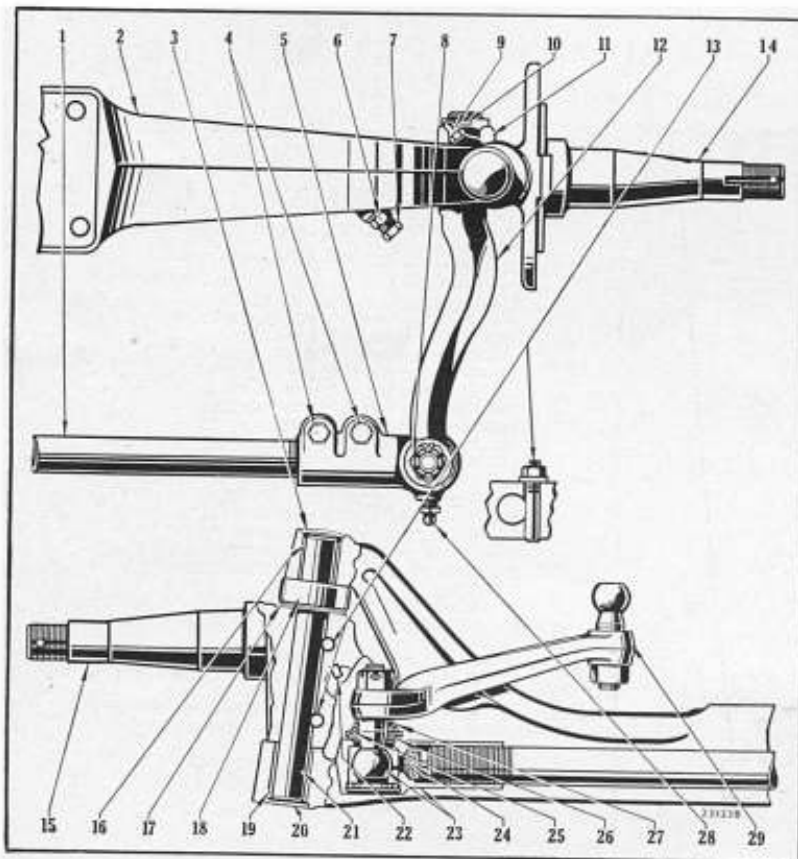
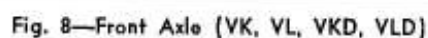
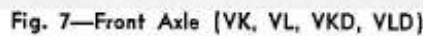


Fig. 6—Front Axle (VM, VG, VH)

Figs. 5 and 6—Front Axle (VM, VG, VH)

- 1—Steering knuckle tie rod
- 2—Front axle "I" beam
- 3—Steering knuckle pivot oil seal plug
- 4—Steering knuckle tie rod clamp bolts
- 5—Steering knuckle tie rod end and ball assembly—right
- 6—Steering knuckle stop screw lock nut
- 7—Steering knuckle stop screw
- 8—Steering knuckle tie rod end ball nut
- 9—Steering knuckle pivot lubricant nipple
- 10—Steering knuckle arm nut cotter pin
- 11—Steering knuckle arm nut
- 12—Steering knuckle arm—right
- 13—Steering knuckle pivot lock pins
- 14—Steering knuckle—right
- 15—Steering knuckle—left
- 16—Front axle "I" beam bushing—upper
- 17—Steering knuckle thrust bearing shims
- 18—Steering knuckle thrust bearing
- 19—Front axle "I" beam bushing—lower
- 20—Steering knuckle pivot oil seal plug
- 21—Steering knuckle king pin or pivot
- 22—Steering knuckle arm key
- 23—Steering knuckle tie rod end and ball assembly—left
- 24—Steering knuckle tie rod grease plug
- 25—Steering knuckle tie rod end dust cover
- 26—Steering knuckle tie rod end dust washer
- 27—Steering knuckle tie rod end dust cover spring
- 28—Steering knuckle tie rod end lubricant nipple
- 29—Steering knuckle arm—left
- 30—Steering knuckle tie rod end clamp bolt nuts and lockwashers
- 30—Steering knuckle pivot lock pin nuts and lockwashers



- 1—Steering knuckle—left
- 2—Steering knuckle pivot pin dust washer lock
- 3—Steering knuckle pivot pin
- 4—Steering knuckle stop screw
- 5—Steering knuckle stop screw check nut
- 6—Steering knuckle pivot pin lubricant nipples
- 7—Steering knuckle pivot lock pin
- 8—Front axle "I" beam
- 9—Steering knuckle thrust bearing shim
- 10—Steering knuckle arm—left
- 11—Steering knuckle pin dust washer retainer
- 12—Steering knuckle pivot pin dust washer
- 13—Steering knuckle bushings
- 14—Steering knuckle thrust bearing retainer
- 15—Steering knuckle plug
- 16—Steering knuckle thrust bearing
- 17—Steering knuckle tie rod end dust washer
- 18—Steering knuckle tie rod end dust washer retainer
- 19—Steering knuckle tie rod end assembly—left
- 20—Steering knuckle tie rod end dust cover spring
- 21—Steering knuckle tie rod end clamp bolt
- 22—Steering knuckle tie rod
- 23—Steering knuckle tie rod end stud nut and cotter pin
- 24—Steering knuckle arm key
- 25—Steering knuckle arm—right
- 26—Steering knuckle right
- 27—Steering knuckle arm nut and cotter pin
- 28—Steering knuckle tie rod end assembly—right
- 29—Steering knuckle tie rod end clamp bolt nut and lockwasher

FRONT AXLE REMOVAL AND INSTALLATION

FRONT WHEEL AND HUB

1. Raise front end of truck with jack so wheel clears the floor or ground.
2. Remove hub cap, VC and VD15 only, using special tool or by prying off with screw driver.
3. Remove wheel hub studs or nuts and lift off wheel. On all models except VD20, the wheel, hub and brake drum may be removed

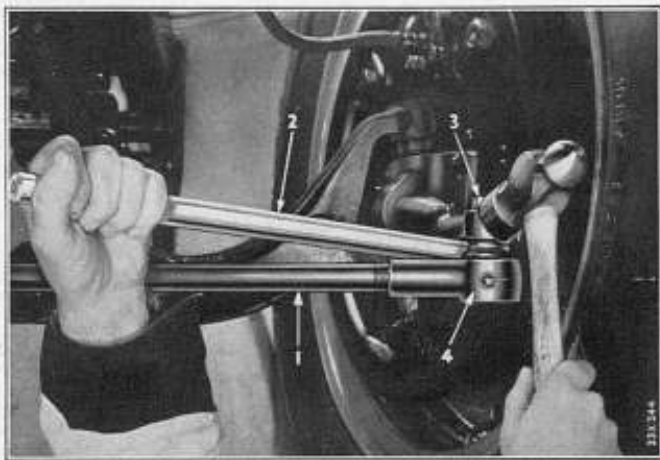


Fig. 9—Removing Tie Rod Ends from Steering Arms

- 1—Tie rod
- 2—Pry bar
- 3—Tie rod end ball stud nut
- 4—Tie rod end assembly

as an assembly. On the VD20 Model, however, the wheel must be removed before the hub can be removed.

4. Remove wheel hub grease cap. On series VC and VD, use special tool C-438 or pry off with screw driver and tap with a light hammer. On other models unscrew the grease cap.
5. Remove cotter pin and unscrew front wheel bearing adjusting nut.
6. Remove outer bearing and pull the hub and brake drum off steering knuckle.
7. Inspect grease seal and replace if necessary. See Oil Seal preparation under "MAINTENANCE."

To install, reverse the foregoing operations. See "Wheels and Tires" section of this manual for adjustment of front wheel bearings.

TIE ROD

1. Remove the cotter pin and loosen the nut on the upper end of tie rod ball.

2. Insert a pry bar between the tie rod and the steering knuckle arm and jar the tie rod ball loose by driving on the rear end of the steering knuckle arm (Fig. 9). Tie rod balls are not removable from the tie rod ends; if replacement of either is necessary, the complete tie rod end and ball assembly should be replaced.
3. Loosen clamping bolt nut (2 on VG, VH) on tie rod end.
4. Unscrew tie rod end assembly from the tie rod.

To assemble and install, reverse operations.

Always use new cotter pins and lockwashers when reassembling. Care must be taken when assembling to make certain that the tie rod is properly adjusted for length to obtain the correct toe-in of the front wheels. See "Front Wheel Alignment."

STEERING KNUCKLE AND BUSHINGS Wheel and Hub Removed

1. Block brake pedal so it cannot be depressed.

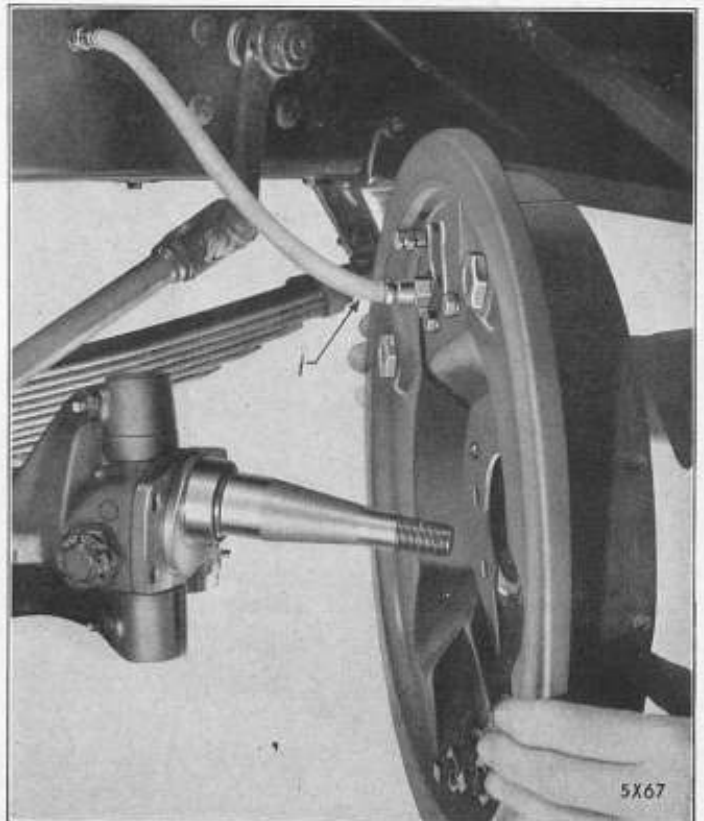


Fig. 10—Brake Support Assembly Removed

- 1—Brake flexible hose