SECTION 12
SPECIFICATIONS

500, 700 AND 900 SERIES

(Specification 3)

GENERAL

FRONT SUSPENSION

Type: Independent, combining long and short control arms, with spherical joints, coil springs, and anti-dive control. Front suspension, steering linkage and front crossmember unitized as sub-assembly.

WHEEL TRAVEL

Vertical, Loaded Conditions:
- Metal to Metal: Jounce 4.00; Rebound 3.12
- Wheel to Spring Ratio: 1.63:1

SHOCK ABSORBERS

Type: Direct, double acting hydraulic
Make: Delco

Piston Diameter and Travel: 1.00; 4.75
Mounting Location: Mounted vertically within coil spring, between control arm and suspension crossmember.

CONTROL ARMS

Mounting:
- Upper: Stamped "A" frame with pivot shafts bolted to front suspension crossmember. Pivot shafts rubber bushed at control arms.
- Lower: Two piece, beam and strut with pivot points at front suspension crossmember. Pivot points rubber bushed.

SPHERICAL JOINTS

Type: Ball stud and socket
Number: 1 each, upper and lower at left and right hand

Ball Stud:
- Material: Hot rolled steel
- Upper spherical diameter: 1.000-.996
- Lower spherical diameter: 1.000-.996

Seals:
- Seals—Upper and Lower: Rubber

Socket:
- Upper: Two-piece, bonded by grease-tight weld with non-metallic bearing liner
- Lower: Two-piece, bonded by grease tight weld with sintered iron bearing

SPRINGS

Type: Right hand helix
Material: High alloy steel

Number of Coils: Active—5.85; Total—7.45
Wire Diameter: .460
Outside Diameter (pitch dia. + wire dia.): 4.373
Pitch Diameter: 3.913
Height:
- Free: 11.00
- Working: 6.17 @ 815 lbs.
Height Under Curb Weight: 6.96
Deflection Rate (at spring): 168 lb./in.
(at wheel): .86 lb./in.

REAR SUSPENSION

GENERAL

Type: Independent swing-type, combining hollow box section type control arms, coil springs and shock absorbers.

WHEEL TRAVEL

Vertical, Loaded Conditions:
- Metal to Metal: Jounce 3.62; Rebound 4.64
- Wheel to Spring Ratio: 1.72:1

CONTROL ARMS

Mounting: Control arm pivot shafts bolted to rear crossmember. Pivot shafts rubber bushed at control arms.

SHOCK ABSORBERS

Type: Direct, double acting hydraulic
Make: Delco

Piston Diameter and Travel: 1.00; 5.00
Mounting Location: Mounted vertically within coil spring, between control arm and suspension crossmember.

SPRINGS

Type: Right hand helix
Material: High alloy steel

Number of Coils: Active—6.5; Total—7.95
Wire Diameter: .660
Outside Diameter (pitch dia. + wire dia.): .4.773
Pitch Diameter: 4.113
Height:
- Free: 8.11 @ 1600 lbs.
- Working: 550 lb./in.
Height Under Curb Weight: 8.03
Capacity at Ground: 1019
Deflection Rate (at spring): 192 lb./in.
(at wheel): .86 lb./in.
## WHEEL BEARINGS
Type ......................... Double row spherangular roller bearing lubricated for life.

## TIRES
Type .......................... Tubeless
Inflation ........................ COLD HOT
Front .................................. 15 18
Rear .................................. 26 30
Spare Tire ......................... Inflate to 26 lbs.—Deflate to 15 lbs. when using as front wheel.

## SUSPENSION ALIGNMENT
Caster at Curb .................. $2^\circ + 0^\circ - \frac{1}{2}^\circ$
Camber at Curb .................. $\frac{1}{2}^\circ \pm \frac{1}{2}^\circ$
Steering Axis Inclination .. $7^\circ \pm \frac{1}{2}^\circ$
Toe-in
Front Wheels ...................... $\frac{3}{16}^\circ + 0^\circ$
Rear Wheels ...................... $0^\circ - \frac{1}{4}^\circ$ (total)

## GENERAL
Type .................. Independent front suspension, incorporating Anti-Drive geometry ball joints and coil springs. Mounted on a removable cross member.

## FRONT SUSPENSION GEOMETRY
Type ........... Independent swing type, using hat section type
Mounting .......... Control arm pivot shafts bolted to rear crossmember.

### SPHERICAL JOINTS
Type ................... Serrated, Pressed Fit
Material ................. Forged, Heat treated steel
Spindle Diameter .......... ID .670-.677 OD 1.276-1.281
Upper Control Arm Shaft Material ............ Case Hardened, Carbo-nitride Steel
Type .................... Serrated, Pressed Fit
Material ................. Case Hardened, Carbo-nitride Steel

## REAR SUSPENSION
Type .................. Independent swing type, using hat section type lower control arms, coil springs and shock absorbers.

### CONTROL ARMS
Material ................ H. R. Steel Stamping
Upper Control Arm Shaft Material ............ Forged Steel
Type .................... ID .737-.744 OD 1.323-1.328
Diameter .................. .82
Length ......................... 14.36
Lower Control Arm Shaft Material ............ Case Hardened, Carbo-nitride Steel
Type .................... ID .670-.677 OD 1.276-1.281
Diameter .................. .88
Length ......................... 12.66

### WHEEL BEARINGS
Make and Type .................. Chevrolet; RH helix
Piston Diameter & Travel .... 1.375; 5.00
RPO 213 ......................... HD front shock absorbers
Make .................. Delco
Piston Diameter & Travel .... 1.375; 5.00
Mounting Location ............... Mounted vertically within coil spring, between control arm and suspension crossmember.

### SPRINGS
Model Application ............... All
Part Number .................... 3781332
Make and Type .................. Chevrolet, RH helix
Material ....................... High alloy steel
Number of Coils .................. Active 5.08; total 6.42
Wire Diameter .................. .677
Outer Diameter .................. 5.154
Pitch Diameter .................. 4.477
Free Overall Height ........... 12.43
Height at Normal load .... 7.86 @ 1860 lbs.
Height at maximum load .... 5.94 @ 3022 lbs.
Deflection rate at spring .. 605 lb./in.
Deflection rate at wheel .. 175 lb./in.
Sprung Capacity ................ 1040 lbs. each
Capacity at Ground ............ 1150 lbs. each

### WHEEL BEARINGS
Material .................. Tapered roller, #7450630
Inner ......................... Tapered roller, #7450627
Outer

### CONTROL ARMS
Mounting ................. Control arm pivot shafts bolted to rear crossmember. Control arm shafts rubber bushed at control arm.
Bushings

Material
Outer sleeve ..................... Stainless steel
Inner sleeve ..................... Carbo-nitrided case hardened steel. Rubber cushion between inner and outer sleeve.

Type ......................... Serrated, pressed fit
Diameter ................... ID, .737-.744; OD, 1.323-1.328

Control Arm Pivot Shafts
Type ......................... Rubber bushed at both ends
Attachment ............... Bolted to crossmember
Material ........................ Drop forged steel
Length ..................... 14.31
Diameter ................... .731-.736

SHOCK ABSORBERS
Type ......................... Direct, double acting hydraulic.
Make ............................... Delco
Piston Diameter & Travel ...... 1.000, 5.00
Mounting Location ........................ Mounted vertically within coil spring, between control arm and suspension cross-member.

SPRINGS
Make and Type ............. Chevrolet, RH helix coil
Material ........................ High alloy steel
Number of Coils .......... Active 6.5; total, 7.95
Wire Diameter ................ .664
Outside Diameter ............ 4.781
Pitch Diameter ................ 4.117
Overall Free Height ......... 12.520
Height at Normal Load ...... 7.42 @ 1922 lbs.
Deflection Rate at Spring .... 580 lb./in.
Deflection Rate at Wheel .... 177 lb./in.
Height at Maximum Load ... 5.90 @ 2943 lbs.

SHOCK ABSORBERS

Type ......................... Direct, double acting hydraulic.
Make ............................... Delco
Piston Diameter & Travel ...... 1.000, 5.00
Mounting Location ........................ Mounted vertically within coil spring, between control arm and suspension cross-member.

SPRINGS
Make and Type ............. Chevrolet, RH helix coil
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Height at Normal Load ...... 7.42 @ 1922 lbs.
Deflection Rate at Spring .... 580 lb./in.
Deflection Rate at Wheel .... 177 lb./in.
Height at Maximum Load ... 5.90 @ 2943 lbs.

WHEELS AND TIRES

WHEELS
Type .............................. Short spoke, disc
Attachment to Hub .......... 5 studs, 5/16-20
Offset ......................... .560
Rim Size ....................... 14x5J Mod

TIRES
Type .............................. Rayon tubeless blackwall
Size and Ply .............. 7.00-14-4 ply
Optional Tire .............. 7.00-14-6 ply

TUBELESS TIRE DATA
Size: 7.00-14-4
Loaded rolling radius ................ 12.16
Loaded revolutions per mile ...... 810
Tire section ..................... 7.18
Load & inflation ............... .975 lbs. @ 24 lb./sq. in.
Size: 7.00-14-6
Loaded rolling radius ................ 12.16
Loaded revolutions per mile ...... 810
Tire section ..................... 7.18
Inflation ......................... 24 lb./sq. in.

STEERING

(Section 4)

STEERING GEAR
Make .............................. Saginaw
Type .............................. Recirculating ball
Ratio ......................... 18:1
Overall Ratio ............... 23.5:1
Mainshaft Diameter ......... 750
Column Diameter ........... 1.490-1.510
Steering Wheel Diameter ...... 16.00

Turning Diameters:
Outside front—
Wall to wall—right 41.6 ft; left 41.3 ft.
Curb to curb—right 39.5 ft; left 39.0 ft.
Inside rear—right and left
Wall to wall—right 24.4 ft; left 24.2 ft.
Curb to curb—right 24.9 ft; left 24.6 ft.
Number of Wheel Turns (Right and Left Hand)
To steering gear stops—Right to left turn ...... 5.00
To wheel stops on control arm .......... 4.60

STEERING KNUCKLE
Type .............................. Forged steel
Spindle Diameters:
At inner bearing ................ .0618-1.0623
At outer bearing .......... .6868-6873
Spindle thread size ........... 1/8-24

STEERING LINKAGE
Type .............................. Parallel relay
Location .......................... Front of wheels
Number of Tie Rods .......... Two
Outside Wheel Angle with Inside Wheel @ 20° 18.03°

ADJUSTMENTS
Lash Adjustment (High Point) .... 7 to 12 in. lbs.
Lash Adjuster End Clearance ...... .002"
Worm Bearing Adjustment ........ 2 to 6 in. lbs.
CORVAIR 95 AND GREENBRIER—
1200 SERIES

STEERING GEAR
Make .................................... Saginaw Steering Gear
Type .................................. Semi-reversible, recirculating ball
Ratio ....................................... 20:1
Overall Steering Ratio ......................... 23:1
Main Shaft Diameter ................................ 750
Steering Column Diameter ..................... 1.995-2.0005
Steering Wheel ................................ 17 inch, 2 spoke
Number of Steering Shafts ................. 1
Pitman Shaft
Material ........... Carburized, heat treated Steel
Diameter .... Outer end—1.1205-1.1215
Inner end—1.1230-1.1240
Pitman Shaft Bushing (inner & outer)
Material ...................................... Cast Bronze
Outer Bushing ID .......... 1.1245-1.1255
Length .................................... 1.380
Inner Bushing ID .......... 1.1255-1.1260
Location ..................... Straddle mounted in steering gear housing
Worm and Steering Gear
Type ..................................... Worm welded to steering shaft
Shaft Diameter ......................... .750
Anti-Friction Sector Roller .............. #5666693

STEERING LINKAGE
Type ..................................... Parallel Relay
Number of Tie Rods ......................... Two
Tie Rod Type ................................ Dual Equal Length
Idler Arm .................................. Mounted RH Side Rail
Relay Rod . . . . One, with tie rods attached to relay rod
Connecting Rod ... Attached to pitman arm at one end and to a steering relay and connecting rod arm at other end

TURNING RADII
Radius Clearance at Curb Weight .......... 19.5 feet
Wall to Wall Clearance ................... 21.3 feet

500, 700 AND 900 SERIES

SERVICE BRAKES
Type ..................................... Servo, 4 wheel hydraulic
Brake Drum:
Type ..................................... Composite
Rim material ..................... Cast alloy iron
Web material ....................... Pressed steel
Diameter, front and rear .......... 9.0
Total effective area ................ 197.9 sq. in.
Distribution of Braking Effort (theoretical)
On front wheels .................... 46%
On rear wheels ...................... 54%
Brake Linings:
Material .................................. Full molded asbestos composition
Width, front and rear ............. 1.75
Thickness ................................ 0.160
Length per wheel .................... 17.27
Length, primary shoe ............. 7.85
Length, secondary shoe .......... 9.42
Method of attachment ........ Bonded
Total effective area ............. 120.8 sq. in.
Master Cylinder:
Filler location ........... On brace under dash, fill from luggage compartment through access hole.
Diameter ................................ 1.00
Piston travel ......................... 1.31
Wheel Cylinders:
Mounting ........... Front, on wheel spindles; rear, on backing plate.
Diameter ........ Front, .875; rear, .8375

1200 SERIES

SERVICE BRAKES
Type ..................................... Duo-servo, 4 wheel hydraulic
Brake Drum
Type ..................................... Composite
Rim material ..................... Cast alloy iron
Web material ....................... Pressed steel
Diameter, front and rear .......... 10.955
Total effective area ............. 275.33 sq. in.
Brake Linings
Material .................................. Full molded asbestos
Width, front and rear ........... 2.155
Thickness ................................ 0.168
Primary facing ...................... 0.164
Secondary facing .................... Bonded
Method of attachment ........ Bonded

Length ..................................... 840
Location ..................... Straddle mounted in steering gear housing

CORVAIR SHOP MANUAL
Shoe anchor .................. Peened fixed anchor
Total effective area ................... 167.10 sq. in.

Master Cylinder
Diameter .................................... 1.00
Make ......................................... Moraine
Push rod travel .......................... 1.329
Wheel Cylinder
Diameter ............................ Front, 1.125; Rear, 1.00
Brake Distribution ........................ Front 50% ± 2%
Rear 50% ± 2%

Braking Lever Ratios
Pedal ratio ................................... 6.8
Hydraulic .................................... 4.52
Overall .................................... 30.74

PARKING BRAKE
Type ................................................. Mechanical pull type, cables to rear service brakes
Total effective lining area ................ 83.40 sq. in.
Control ........................................... Lever under dash

POWER TRAIN
(Section 6)

DRIVE RATIO—CORVAIR 95—1200 SERIES

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500, 700 AND 900 SERIES

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GREENBRIER

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*Optional

ENGINE—500, 700, 900 SERIES
CORVAIR 95 AND GREENBRIER—1200 SERIES
(Section 6A)

GENERAL
Piston Displacement (cu. in.) .................. 145
Type ................................................. Horizontally opposed, OHV
Number of Cylinders .......................... 6
Bore and Stroke .................................. 3.4375 x 2.60
Compression Ratio ................................. 8.0:1
Turbo-Air
Advertised Gross Horsepower Rating ............ 80 @ 4400 rpm

Gross Torque Rating ....................... 128 ft. lb. @ 2300 rpm
Super Turbo-Air
Advertised Gross Horsepower Rating ............ 98 @ 4600 rpm
Gross Torque Rating ....................... 132 ft. lbs. @ 2800 rpm
Idling Speed (rpm)
Conventional .................. 500 rpm (in Neutral)
Automatic .................. 500 rpm (in Drive)
Dry Weight (lb) .................. 332
SPECIFICATIONS 12-6

Engine (Auto. trans.) .......................... 294
Lubrication ..................... Full pressure
Engine Location ........ Rear compartment
                     integral with differential and transmission

CYLINDER HEADS
Material .......................... Permanent mold cast aluminum
                     with integral cooling fins.
Number of Head Tightening Positions ............ 24
Valve Seat Insert Material
Inlet .................................... Cast nickel steel alloy
Exhaust .............................. Cast chromium steel alloy

CYLINDERS
Type ................................ Individually cast
                     with integral cooling fins.
Material .............................. Cast iron
Bore Diameter ................. 3.4370-3.4400

CRANKCASE
Type ................................ Split Half
Material .......................... Cast Aluminum

CRANKSHAFT
Material .......................... Drop forged steel
End Play .......................... .002-.006
Journal Diameters, Nos. 1 and 2 ........ 2.0978-2.0988
Journal Diameters, Nos. 3 and 4 ..... 2.0983-2.0993
Connecting Rod Journals
Width ................................ .8585-.8615
Diameter .......................... 1.799-1.800
Counterweights ................. None
Stroke ............................ 2.595-2.605
Pulley (PD) .......................... 6.64

MAIN BEARINGS
Material .......................... Extra-life steel backed babbitt
Type ................................ Precision, removable
End Thrust Against Bearing ................. No. 1
Clearance, Nos. 1 and 2 .................. .0012”-.0027”
Dimensions, Nos. 3 and 4 ............... .0007”-.0022”
Bearing Theo. ID Eff. Length Proj. Area
1 2.1008 .795 1.670
2, 3, 4 2.1008 .752 1.580

CAMSHAFT
Material .......................... Alloy cast iron
Drive ................................ Gear
Gear Material .............................. Steel
Crankshaft .................... Permanent mold, Cast aluminum
Camshafts .............. No inserts, camshaft is in
direct contact with crankcase

VALVE MECHANISM
Type .................. Stamped rocker arm, ball and
                     stud, push rod actuated
Lifters .......................... Hydraulic
Body Material
Foot Material .......................... Alloy cast iron
Sleeve .............................. Steel
Plunger and Push Rod Seat ................. Steel

Rocker Arm Ratio .................. 1.50
Valve Lash .......................... Zero

VALVE TIMING (Theoretical)
Turbo-Air
Inlet
Opens .................................. 43° BTC
Closes .................................. 93° ABC
Exhaust
Opens .................................. 87° BBC
Closes .................................. 69° ATC
Tappet Lift
Inlet .................................. .20926
Exhaust .................................. .22935
Valve Lift
Inlet .................................. .314
Exhaust .................................. .344
Ramp
Inlet and Exhaust
Opening ......................... .0056, 14° long
Closing .................................. .0070, 28° long
Super Turbo-Air
Inlet
Opens .................................. 54° BTC
Closes .................................. 118° ABC
Exhaust
Opens .................................. 95° BBC
Closes .................................. 78° ATC
Tappet Lift
Inlet and Exhaust .................. .252”
Valve Lift
Inlet and Exhaust .................. .380
Ramp
Inlet and Exhaust
Opening ......................... .0036, 9° long
Closing .................................. .0070, 28° long

CONNECTING RODS
Material .......................... Drop forged steel
Length (center to center) ................. 4.719-4.721
Bearings
Type ................................ Precision, removable
Material .......................... Extra-life steel backed babbitt
End play .......................... .005-.010
Clearance .................................. .0007-.0027
Effective length ................. .649
Theoretical ID .................. 1.8012
Projected area .................. 1.169

VALVES
Inlet
Material .......................... Alloy steel
Overall length ......................... 4.489-4.509
Overall head diameter ................. 1.335-1.345
Seat angle (in head) .................. 45°
Stem diameter .................... 3.415-3.422
Stem to Guide Clearance
New .................................. .0010-.0027
Worn .................................. .001-.004
Lift .................................. .314

CORVAIR SHOP MANUAL
Face angle .................................. 45°
Cutter diameter ................................ 1.508

Exhaust:
Material ........................................ High alloy steel
Overall length .................................. 4.494-4.514
Overall head diameter .......................... 1.235-1.245
Seat angle (in head) ............................ 45°
Stem diameter (.001” taper) ............ 3410-3417 (top)
............................................. 3400-3407 (bottom)
Stem to Guide Clearance
New ............................................. .0015-.0032
Worn ............................................. .002-.005
Lift ............................................. .344
Face angle ...................................... 44°
Cutter diameter .................................. 1.366

VALVE SPRINGS
Turbo Air:
Valves Closed:
Inlet and Exhaust @ 1.508 .................. 58-64 lbs.
Valves Opened:
Inlet and Exhaust @ 1.148 .................. 141-149 lbs.
Free Length:
Inlet and Exhaust ................................ 1.74
Super Turbo-Air:
Valves Closed:
Inlet and Exhaust @ 1.696 .................. 69-79 lbs.
Valves Opened:
Inlet and Exhaust @ 1.306 .................. 159-169 lbs.
Free Length:
Inlet and Exhaust ................................ 2.08

PISTONS
Type .............................................. Slipper skirt
Material ........................................ Cast alloy aluminum
Top Land Clearance ................................ .022-.031
Skirt Clearance .................................. .0011-.0015
Compression Ring Groove Depth ............. .193-.198
Compression Ring Groove Width ............. .0792-.0902
Oil Control Ring Groove Depth ............. .194-.199
Oil Control Ring Groove Width ............. .188-.189

PISTON PINS
Type .............................................. Pressed in rod
Material ........................................ Alloy steel
Length ........................................... 2.630-2.650
Diameter ......................................... 7.999-8.002
Clearance ......................................... .00015-.00025
Direction of Offset ................................ Major thrust side

COMPRESSION RINGS
Type .............................................. Inside Bevel Reverse Twist Taper Face
Material ........................................ Cast alloy iron
Coating ........................................... Wear resistant
Width ........................................... .0770-.0780
Wall Thickness ................................... .162-.172
Gap .............................................. .010-.020

OIL CONTROL RINGS
Type .............................................. One piece groove and slotted construction with slotted expander
Material ........................................ Cast alloy iron

Width ........................................... 1860-1865
Wall Thickness .................................. .143-.149
Gap .............................................. .010-.020

COOLING SYSTEM

GENERAL
Type .............................................. Air cooled by blower
Engine enclosed by sheet metal shrouding to direct cooling air over fins on outside of engine cylinders and cylinder head castings. Engine temperature regulated by bellows type thermostats in lower shrouds exhaust ducts which operates exhaust dampers. Exhaust damper doors close the blower air exhaust until engine has obtained the correct operating temperature.

ENGINE BLOWER
Type .............................................. Centrifugal
Location ......................................... Mounted horizontally on top center of engine between air cleaner and crankcase
Material ........................................ Steel
Diameter ......................................... 11.00
Number of Vanes ................................ 24
Driven By ......................................... “V” belt
Air Flow ......................................... 1800 cfm @ 4000 engine rpm
Engine Blower Pulley (PD) ..................... 4.1875
Ratio (blower to engine) ......................... 1.58:1
Belt Idler Pulley (PD) .......................... 3.32
Bearing Type ................................... Sealed, permanently lubricated ball bearing

BLOWER PULLEY BELT
Type .............................................. “V”
Length ............................................. 55.7
Width ............................................. .380 ± .005
Angle of “V” ...................................... 40°

ENGINE EXHAUST THERMOSTAT
Type .............................................. Bellows (seamless)
Make .............................................. Harrison
Bellows start to open @ .............. 200-210°F @ 1.20”
Bellows full open @ ....................... 215-225°F @ 1.70”

LUBRICATION SYSTEM

GENERAL
Type .............................................. Full pressure
Main Bearings .................................. Pressure
Connecting Rods ................................ Pressure
Piston Pins ..................................... Splash
Cylinder Walls .................................. Spray
Camshaft Bearings ............................ Pressure
Hydraulic Lifters ................................ Pressure
Timing Gears .................................... Splash

OIL PUMP
Type .............................................. Gear
Location ......................................... Mounted in engine rear cover
Driven By ......................................... Distributor
Intake Type ..................................... Fixed
Capacity (GPM @ rpm) ......................... 9 @ 4000

CRANKCASE CAPACITY (QH)
Dry ................................................. 5½
Refill .............................................. 4
OIL COOLER
Make: Harrison
Material: Aluminum
Location: Mounted on left bank of cylinders to rear
By-Pass Valve: Begins to open @ 10 P.S.I.

OIL FILTER
Type: Full flow
Capacity: 1.0 pt.

OIL FILLER
Corvair 500, 700 and 900 Series
Location: Oil filter and generator adapter

SPECIFICATIONS 12-8

ENGINE TORQUE SPECIFICATIONS

<table>
<thead>
<tr>
<th>SIZE</th>
<th>MATERIAL</th>
<th>USED TO ATTACH</th>
<th>TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼-20</td>
<td>S.A.E. 1010-1020</td>
<td>Oil Pan Attachment</td>
<td>40-60 in-lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 260-M</td>
<td>Oil Pump Cover</td>
<td>60-80 in-lbs.</td>
</tr>
<tr>
<td></td>
<td>S.A.E.-1018</td>
<td>Oil Cooler to Cyl. Head</td>
<td>60-80 in-lbs.</td>
</tr>
<tr>
<td>½-18</td>
<td>S.A.E. 1010-1020</td>
<td>Valve Rocker Cover</td>
<td>30-50 in-lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 260-M</td>
<td>Crankcase L.H. to R.H.</td>
<td>7-13 ft. lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 260-M</td>
<td>Crankcase Cover to Crankcase</td>
<td>7-13 ft. lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 260-M</td>
<td>Oil Cooler Adapter to Crankcase</td>
<td>7-13 ft. lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 260-M</td>
<td>Oil Filter and Generator Adapter</td>
<td>7-13 ft. lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 280-M</td>
<td>Clutch Cover and Pressure Plate Attachment</td>
<td>15-20 ft. lbs.</td>
</tr>
<tr>
<td></td>
<td>G.M. 280-M</td>
<td>Clutch Pressure Plate Driving Strap</td>
<td>15-20 ft. lbs.</td>
</tr>
<tr>
<td>⅜-24</td>
<td>G.M. 300-M</td>
<td>Flywheel or Drive Plate to Crankshaft Assembly</td>
<td>20-26 ft. lbs.</td>
</tr>
<tr>
<td>⅜-16</td>
<td>G.M. 280-M</td>
<td>Flywheel or Clutch Housing to Crankcase</td>
<td>20-30 ft. lbs.</td>
</tr>
<tr>
<td>⅜-16</td>
<td>G.M. 260-M</td>
<td>Oil Cooler Attachment</td>
<td>8-12 ft. lbs.</td>
</tr>
<tr>
<td>⅜-16</td>
<td>G.M. 260-M</td>
<td>Skid Plate to Rear Housing</td>
<td>20-30 ft. lbs.</td>
</tr>
<tr>
<td>⅝-20</td>
<td>G.M. 260-M</td>
<td>Oil Filter to Adapter</td>
<td>9-15 ft. lbs.</td>
</tr>
<tr>
<td>¾-24</td>
<td>AISI C-1137 or A-3135</td>
<td>Oil Pressure Switch</td>
<td>45-65 in-lbs.</td>
</tr>
<tr>
<td>¾-16</td>
<td>G.M. 286-M</td>
<td>Nut—Connecting Rod</td>
<td>20-26 ft. lbs.</td>
</tr>
<tr>
<td>¾-16</td>
<td>Steel</td>
<td>Nut—Distributor Clamp</td>
<td>10-20 ft. lbs.</td>
</tr>
<tr>
<td>¾-16</td>
<td>G.M. 286-M</td>
<td>Nut—Exhaust Manifold to Cylinder Head</td>
<td>12-27 ft. lbs.</td>
</tr>
<tr>
<td>¾-16</td>
<td>AISI C-1137 or A-3135</td>
<td>Stud—Rear Mounting</td>
<td>5 ft. lbs.</td>
</tr>
<tr>
<td>¾-24</td>
<td>AISI C-1137 or A-3135</td>
<td>Nut—Cylinder Head to Crankcase</td>
<td>27-33 ft. lbs.</td>
</tr>
<tr>
<td>¾-24</td>
<td>G.M. 300-M</td>
<td>Stud—Cylinder Head to Crankcase at Assembly to Crankcase</td>
<td>10-30 ft. lbs.</td>
</tr>
<tr>
<td>¾-24</td>
<td>G.M. 300-M</td>
<td>Stud—Cylinder Head to Crankcase</td>
<td>27-33 ft. lbs.</td>
</tr>
<tr>
<td>¾-24</td>
<td>AISI C-1137 or A-3135</td>
<td>Nut—Valve Rocker Arm Ball Stud</td>
<td>55-12S in-lbs.</td>
</tr>
<tr>
<td>½-14</td>
<td>AISI C-1137 or A-3135</td>
<td>Oil Temperature Switch</td>
<td>10-15 ft. lbs.</td>
</tr>
<tr>
<td>14 MM</td>
<td></td>
<td>Spark Plug</td>
<td>20-25 ft. lbs.</td>
</tr>
</tbody>
</table>

CLUTCH—500, 700, 900, 1200 SERIES

(Section 6B)

Type: Single plate dry disc
Disc Diameter: Models 500, 700, 900, 1205, 1206, 1244 and 1254: 9¾"; R.P.O. 649 and 651: 8";
Clutch Pressure Spring
Type: Diaphragm
Diameter: 9¾"


Cross-Shaft Outboard
"Lever to Front Engine Mount: ½"-¾"

Clutch Release Bearing
Type: Sealed Ball
Make: New Departure

Clutch Pilot Bearing
Type: Oil Impregnated Bushing

CORVAIR SHOP MANUAL
**GENERAL**

Differential integral with engine and transmission, driving rear wheels independently through U-joints.

Lubricant Capacity (Pints) 3.1

**AXLE SHAFT**

Forged and hardened steel with wheel drive flange forged integral with shaft.

Diameter 1.10

Hub Attachment Bolted to integrally forged wheel drive flange.

Drive Flange Diameter 6.16

**DIFFERENTIAL**

Type 2 pinion

Differential Pinion:
- Number of pinion teeth 10

**GEAR DATA**

Drive Ratio 3.89:1 3.27:1 3.27:1 3.55:1

Hypoid Gears:
- No. of Teeth
  - Ring Gear 35 36 36 32
  - Pinion 9 11 11 9

**SPEEDOMETER GEARS**

Tooth Pitch 30

Teeth, Drive
- 8
- Driven 24

---

**Manual Transmission—500, 700, 900 Series, Corvair 95 and Greenbrier—1200 Series**

**GENERAL DATA**

Make Chevrolet synchromesh, manual shift

Type 3-Speed, 4-Speed

Location In rear compartment-integral with engine and differential.

Transmission Case Material Cast aluminum alloy

**GEARSHIFT**

Control Remote

Type Lever

Location Floor mounted

**GEARS**

Type Helical

Material Forged steel, hardened

**LUBRICANT**

Type Recommended Multipurpose Gear Lubricant SAE 80.

Capacity (pt.) 1.9
GENERAL DATA
Make and Type ........ Chevrolet, hydraulic torque converter with automatic planetary gear system for reverse and low.
Transmission Case Material .... Cast aluminum alloy
Converter Maximum Torque Ratio (at stall) ... 2.6:1
Total Transmission Torque Multiplication (converter planetary gear ratio)
  Maximum overall transmission ratio .... 4.73:1
  Low gear drive or low range ...... 4.73:1 to 1.82:1
  Reverse range .................. 4.73:1 to 1.82:1
Oil Type ...................... “A,” suffix “A”
Oil Capacity (pt.)
Dry .......................... Approx. 13
Refill .......................... Approx. 6
Oil Cooled By ................. Air
Selector Lever
  Location ...................... At right of steering column on instrument panel.
  Operation ................. Actuates manual valve in hydraulic control system.
  Positions (indicated on quadrant on instrument panel) . Four (top to bottom)–L-Low, D-Drive, N-Neutral, R-Reverse.

HYDRAULIC TORQUE CONVERTER
Type ..................... Three element
Driving Member (pump) ........ Sheet metal, multi-vane type, spot welded to torque converter housing. Housing cover is bolted to flywheel.
Driven Member (turbine) ......... Sheet metal, multi-vane type, supported by torque converter housing cover. Turns independently of housing. Splined to input shaft.
Reaction Member (stator) ......... Aluminum air foil type supported on stationary sleeve by an over-running clutch of cam and roller design.

CLUTCHES
Type ..................... Multiple disc
High
  Discs, Driving
    Number and type ........ Two, non-metallic faced
  Discs, Driven
    Number and type ........ Three, steel
Reverse
  Discs, Driving
    Number and type ........ Four, non-metallic faced
  Discs, Driven
    Number and type ........ Four, steel plates and one cast iron pressure plate.

PLANETARY GEAR UNIT
Type ..................... Compound planetary
Gear Ratios
  Cruising range ............... 1:1 (direct drive)
  Low range ......................... 1.82:1
  Reverse .......................... 1.82:1
Low brake band ........ Double-wrap design
Low band servo
  Type ...................... Piston, one release spring

HYDRAULIC CONTROLS
Manual Valve
  Type ..................... Spool
Pressure Regulator Valve
  Type ..................... Spool
Governor
  Type ...................... Centrifugal
Drive ................ From transmission output shaft

ENGINE TUNE-UP
(Section 7)

ELECTRICAL SYSTEMS—500, 700 AND 900 SERIES
CORVAIR 95 AND GREENBRIER—1200 SERIES
(Section 8)

ENGINE ELECTRICAL

BATTERY
Make .................... Delco-Remy
Standard Optional
Delco-Remy
Plates per cell ........ 7 9
Ampere hour capacity
(at 20 hour rate) .... 35 40*
Voltage ................. 12 12

Maximum permissible specific gravity variation between cells with specific gravity over 1.215 .................... 0.025
*Identified by daub of green paint on negative terminal.

GENERATOR
Make .................... Delco-Remy
Brush Spring Tension .......... 28 oz.  
(20 oz. for 45 amp. generator)  
Hot output ....... 30 amps. @ 14 volts and 2900 rpm  
Field current draw ........ 1.50-1.62 amps @ 12 volts, 80°F  
Current draw when run as motor ... Average 4.8 amps,  
Max. 5.5 amps. @ 12 volts and 840-1040 rpm.  
Current draw at stall ........ Average 70 amps,  
Max. 80 amps. @ 12 volts and 0 rpm.  

REGULATOR  
Make .................................. Delco-Remy  
Voltage regulator armature air gap .............. 0.075  
Voltage regulator setting ........ 13.8-14.8 volts @ 125°F  
Current regulator armature air gap .............. 0.075  
Current regulator setting ........ 27-33 amps.  
Cut-Out relay closing voltage setting ........ 11.8-13.5 volts  
Cut-Out relay points open  
(reverse flow) .............. 1-4 amps. @ 12 volts  
Cut-Out relay armature air gap .............. 0.020  
Cut-Out relay point opening .............. 0.020  

STARTING MOTOR  
Make .................................. Delco-Remy  
Brush spring tension .......... 35 oz. min.  

DISTRIBUTOR  
ENGINE Turbo-Air Super Turbo-Air*  
TRANSMISSION Synchronesh Powerglide Synchronesh  
Make Delco-Remy Delco-Remy  
Breaker point gap .019" New, .016" Used  
Breaker arm spring tension 19-23 oz.  
Condenser capacity .18-.23 Microfarad  
Rotation Clockwise  
Firing order 1-4-5-2-3-6  
Cam angle (dwell) 33°  
Ignition timing @ idle 4° BTDC 13° BTDC 13° BTDC  
Centrifugal Advance  
Start 0°-2° @ 600 rpm 0°-2° @ 1400 rpm 0°-2° @ 700 rpm  
Intermediate 7°-9° @ 1050 rpm 6°-8° @ 1375 rpm  
Maximum 32° @ 3600 rpm 24° @ 3700 rpm 24° @ 4800 rpm  
Vacuum Advance  
Start 5"-7" 6"-8" 5"-7"  
Full Advance 14.5"-16" 15.5"-17" 14.5"-17"  
Max. Advance (Distributor Degrees) 23° 23° 23°  

*Not available on Corvair 95 and Greenbrier 1200 Series.
### BULB SPECIFICATIONS

<table>
<thead>
<tr>
<th>Bulb Description</th>
<th>Candle Power</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headlamp Unit—Outer: High Beam</td>
<td>37½ Watt</td>
<td>4002</td>
</tr>
<tr>
<td>Low Beam</td>
<td>50 Watt</td>
<td>Sealed Beam</td>
</tr>
<tr>
<td>Inner: High Beam</td>
<td>37½ Watt</td>
<td>4001</td>
</tr>
<tr>
<td>Parking Lamp and Direction Signal Lamps</td>
<td>4-32</td>
<td>1034</td>
</tr>
<tr>
<td>Tail, Stop and Direction Signal Lamps</td>
<td>4-32</td>
<td>1034</td>
</tr>
<tr>
<td>Back-up Lamps</td>
<td>32</td>
<td>1073</td>
</tr>
<tr>
<td>Instrument Lamps</td>
<td>3</td>
<td>GE 1816</td>
</tr>
<tr>
<td>Direction Signal Indicator Lamps</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Temperature-Pressure (Oil) Indicator Lamp</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Generator–Fan Indicator Lamp</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Headlamp High Beam Indicator Lamp</td>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>Glove Compartment Lamp</td>
<td>2</td>
<td>57</td>
</tr>
<tr>
<td>Dome Lamp (Cartridge Type)</td>
<td>15</td>
<td>211</td>
</tr>
<tr>
<td>Courtesy Lamp</td>
<td>6</td>
<td>89</td>
</tr>
<tr>
<td>License Plate Lamp</td>
<td>4</td>
<td>67</td>
</tr>
<tr>
<td>Radio Dial Lamp</td>
<td>2</td>
<td>GE 1891</td>
</tr>
<tr>
<td>Heater Control Panel Lamp</td>
<td>1</td>
<td>53</td>
</tr>
</tbody>
</table>

### FUSES AND CIRCUIT BREAKER

A circuit breaker in the light control switch protects the headlamp circuit, thus eliminating one fuse. Where current load is too heavy, the circuit breaker rapidly opens and closes, protecting the circuit until the cause is found and eliminated.

Fuses located in the junction block beneath the dash are:

- **Heater Blower**
  - Glove Compartment Lamp—3 AG AGC-10 AMP
- **Tail and Stop Lamps, Dome Lamp**
  - Cigarette Lighter—3AG/AGC 10 AMP
- **Heater (Total System)**
  - Back-Up Lamp—3 AG/AGC—20 AMP
- **Radio**—3 AG/AGC—4 AMP
- **Instrument Panel Lamp**
- **Radio Panel Lamp**
- **Heater Control Panel Lamp**—3 AG/AGC—3 AMP

### WIPER MOTOR

#### Single Speed

- **Type** Electric
- **Crank Arm Rotation** (looking at the crank arm) Counterclockwise
- **Crank Arm Speed** 35-45 rpm
- **Operating Voltage** 12 VDC
- **Current Draw (Free Speed)**
  - (Dry Windshield) 3.5-4.0 amp
  - Stall Draw 12 amp

#### Two Speed

- **Crank Arm Rotation** (looking at the crank arm) Counterclockwise
- **Crank Arm Speed**
  - Lo 35-45 rpm
  - Hi 65-80 rpm
- **Operating Voltage** 12 VDC
- **Current Draw (Free Speed)**
  - (Dry Windshield) 4.5-5.0 amp
  - Stall Current 13 amp
FUEL AND EXHAUST SYSTEMS
(Section 9)

FUEL TANK
Corvair 500, 700, 900
Location .................. Under front compartment floor
Capacity (gallons) .............. 14
Filler Location .............. Left front fender crown
Fuel Filter Type .............. Strainer

Corvair 95 and Greenbrier—1200 Series
Location .................. Over front cross-member
Capacity (gallons) .............. 18.6
Filler Location .............. Rear of left front door
Fuel Filter Type .............. Strainer

FUEL GAUGE (Tank Unit)
Make ........................ AC
Type ........................ Electric

FUEL PUMP
Make ........................ AC
Type ........................ Mechanical
Location .................. Mounted on engine rear housing
Driven Off .................. Rear end of crankshaft

AIR CLEANER
Type ........................ Oil wetted
Choke ........................ Manual
Element Material .............. Polyurethane

CARBURETOR
Number Used .................. Two (one/cyl. bank)
Make ........................ Rochester Model H
Type ........................ Single Barrel Downdraft

Fuel Filter
Location ........................ Fuel Inlet
Material ........................ Sintered Bronze
Carburetor No. .......... 7019100 7019101
Throttle Bore ........ 1¾” 1¾”
Main Venturi .............. 1”
Radial Venturi .......... 0.050 0.050
Idle Needle Orifice ...... 0.046 0.046
Idle Tube Rest .......... 0.031 0.032
Main Metering Jets ...... 0.048 0.049
Main Well Vents ........ 0.045 0.045
Cluster Top Bleed ...... 0.040 0.040
Cluster Side Bleed ...... 0.040 0.040
Pump Jets .............. 0.022 0.022
Siphon Bleed .............. 0.059 0.059

Adjustments
Float Level ............. 1¾¼” 1¾¼”
Float Drop .......... 1¾” 1¾”
Venting: Internal ........ 0.187”
External ............... 1/8”

INTAKE MANIFOLD
Type ........................ Cast integral with cylinder heads

EXHAUST MANIFOLD
Type ........................ Shrunk fitted steel pipes into cylinder head with manifold clamped over.
Material .................. Cast iron

EXHAUST
Type ........................ Single, diffusion and resonance
Muffler ........................ Reverse flow
Exhaust Pipe OD ............. 1.875

HEATER
(Section 11)

HEAT OUTPUT .......................... 20,000 btu/hr
THERMOSTAT TEMPERATURE RANGE ........ 65°F-145°F
SPARK PLUG
Type ........................ Single Electrode
Gap .......................... 0.070-0.085

BREAKER POINTS
Gap .......................... 0.020 (Nominal)
Condenser Rating .............. 0.15 mfd ± 25%

IGNITION COIL RATING
Primary ............................. 4 ohm
Secondary .......................... 4,000 ohm

SOLENOID COIL RATING ................. 50 ohm

FUEL PRESSURE .............. 4½-5½ lbs.