

SECTION 12

SPECIFICATIONS

SUSPENSION

(Section 3)

500, 700 AND 900 SERIES

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 cross member. Pivot shafts rubber bushed at control arms.

Lower ..Two piece, beam and strut with pivot points at front suspension cross member. 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
Ball spherical diameter:
Upper1.000-.996
Lower1.000-.996

Seals:

Seals—Upper and LowerRubber

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 Diameter460
Outside Diameter (pitch dia. + wire dia.).....4.373
Pitch Diameter3.913
Height:
Free11.00
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 Diameter660
Outside Diameter (pitch dia. + wire dia.).....4.773
Pitch Diameter4.113
Height:
Free11.02
Working8.11 @ 1600 lbs.
Height Under Curb Weight.....8.03
Capacity at Ground.....1019
Deflection Rate (at spring).....550 lb./in.
(at wheel)192 lb./in.

SPECIFICATIONS 12-2

WHEEL BEARINGS

Type.....Double row spherangular roller bearing lubricated for life.

TIRES

Size.....6.50 x 13-4 Ply
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..... $\frac{3}{16}'' + 0''$
 $-\frac{1}{16}''$
(per wheel)
Rear Wheels..... $0'' - \frac{1}{4}''$ (total)

CORVAIR 95 AND GREENBRIER—1200 SERIES

FRONT SUSPENSION

GENERAL

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

SHOCK ABSORBERS

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

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

STEERING KNUCKLES

Material.....Forged, Heat treated steel Spindle
Diameters
At inner bearing.....1.2490-1.2495
At outer bearing......7490-.7495
Spindle Threads..... $\frac{3}{4}$ -20

WHEEL BEARINGS

Inner.....Tapered roller, #7450630
Outer.....Tapered roller, #7450627

FRONT SUSPENSION GEOMETRY

Caster at Curb..... $2\frac{1}{2}^{\circ} \pm \frac{1}{4}^{\circ}$
Camber at Curb..... $\frac{1}{4}^{\circ} \pm \frac{1}{4}^{\circ}$
Toe-in..... $\frac{1}{8}''$

CONTROL ARMS

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

SPHERICAL JOINTS

Type.....Ball stud and socket
Number.....One each, upper & lower
Ball Stud Material.....Hot rolled steel
Ball Spherical Diameter
Upper.....1.304-1.308
Lower.....1.246-1.250
Bearing Seat Surfaces
Upper and Lower.....Molded, phenolic impregnated fabric.
Socket:
Type and Material:
Upper.....Two Piece, bonded by grease tight weld with non-metallic bearing liner.
Lower.....Same as upper with non-metallic bearing liner.
Lubrication.....Chassis grease

REAR SUSPENSION

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

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.

Spring Capacity.....1050 lbs. each
Capacity at Ground.....1150 lbs. each

REAR SUSPENSION GEOMETRY

Caster at Design Load.....1° ± ½° neg.
Camber at Curb Load.....1½° ± ½° pos.
Toe-in at Design or Curb Load.....0 to ¼"

REAR WHEEL BEARINGS

Type.....Double row barrel
Make.....Hyatt ZCE 6635

WHEELS AND TIRES

WHEELS

Type.....Short spoke, disc
Attachment to Hub.....5 studs, 7/16-20
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)

500, 700 AND 900 SERIES

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.....1.0618-1.0623
 At outer bearing......6868-.6873
 Spindle thread size.....1 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.

SPECIFICATIONS 12-4

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

Length .....	.840
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

BRAKES

(Section 5)

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 .....	.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, .9375
Braking Ratio:	
Pedal	6.55:1
Hydraulic	3.29:1
Total overall	21.55:1

Foot Pedal:

Type	Pendant
Mounting.....	On brace under dash
Line pressure @ 100 lb. pedal load.....	.840 psi
Travel	5.75

PARKING BRAKE

Type	Mechanical pull rods, cables and pulleys operate rear service brakes.
Total Effective Lining Area	60 sq. in.
Application.....	Lever under dash

ADJUSTMENT

Obtain heavy uniform drag of shoes on drum, then back off ...	12 notches (Front) 15 notches (Rear)
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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	
Primary facing .....	.168
Secondary facing .....	.164
Method of attachment	Bonded

Shoe anchor Peened fixed anchor
 Total effective area.....167.10 sq. in.
 Master Cylinder
 Diameter1.00
 MakeMoraine
 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 ratio6.8
 Hydraulic4.52
 Overall30.74

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

TRANSMISSION TYPE	1st	2nd	3rd	4th	Low	Drive	Rev.	Axle	OVER-ALL—FINAL DRIVE						
									1st	2nd	3rd	4th	Low	Drive	Rev.
THREE-SPEED	3.50:1	1.99:1	1.00:1	—	—	—	3.97:1	3.89:1	13.6:1	7.74:1	3.89:1	—	—	—	15.42:1
FOUR-SPEED*	4.26:1	2.55:1	1.68:1	1.00:1	—	—	4.27:1	3.89:1	16.55:1	9.92:1	6.54:1	3.89:1	—	—	16.55:1
								3.27:1*	13.92:1	8.34:1	5.50:1	3.27:1	—	—	13.96:1
AUTOMATIC*	—	—	—	—	4.73:1	1.00:1	4.73:1	3.89:1	—	—	—	—	18.35:1	3.89:1	18.35:1

500, 700 AND 900 SERIES

THREE-SPEED	3.50:1	1.99:1	1.00:1	—	—	—	3.97:1	3.27:1	11.45:1	6.50:1	3.27:1	—	—	—	12.98:1
FOUR-SPEED*	3.65:1	2.35:1	1.44:1	1.00:1	—	—	3.66:1	3.27:1	11.93:1	7.70:1	4.72:1	3.27:1	—	—	11.95:1
								3.55:1*	12.95:1	8.34:1	5.11:1	3.55:1	—	—	12.98:1
AUTOMATIC*	—	—	—	—	4.73:1	1.00:1	4.73:1	3.27:1	—	—	—	—	15.45:1	3.27:1	15.45:1

GREENBRIER

THREE-SPEED	3.50:1	2.00:1	1.00:1	—	—	—	3.65:1	3.89:1	13.6:1	7.78:1	3.89:1	—	—	—	14.2:1
FOUR-SPEED*	4.27:1	2.55:1	1.55:1	1.00:1	—	—	4.27:1	3.27:1	13.95:1	8.34:1	5.07:1	3.27:1	—	—	13.96:1
AUTOMATIC*	—	—	—	—	4.73:1	1.00:1	4.73:1	3.89:1	—	—	—	—	18.35:1	3.89:1	18.35:1

*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 Rating98 @ 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)
 Engine (Conv. trans.)..... 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 Play002-.006
Journal Diameters, Nos. 1 and 2..... 2.0978-2.0988
Journal Diameters, Nos. 3 and 4..... 2.0983-2.0993
Connecting Rod Journals
Width8585-.8615
Diameter 1.799-1.800
Counterweights None
Stroke 2.595-2.605
Pulley (PD) 6.64

MAIN BEARINGS

Material..... Extra-life steel backed babbit
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
Crankshaft Steel
Camshaft Permanent mold, Cast aluminum
Bearings 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 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
Inlet20926
Exhaust22935
Valve Lift
Inlet314
Exhaust344
Ramp
Inlet and Exhaust
Opening0056, 14° long
Closing0070, 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
Opening0036, 9° long
Closing0070, 28° long

CONNECTING RODS

Material..... Drop forged steel
Length (center to center)..... 4.719-4.721
Bearings
Type Precision, removable
Material..... Extra-life steel back babbit
End play005-.010
Clearance0007-.0027
Effective length649
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 diameter3415-.3422
Stem to Guide Clearance
New0010-.0027
Worn001-.004
Lift314

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 .....	.7999-.8002
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 (Q1.)

Dry	5½
Refill	4

SPECIFICATIONS 12-8

OIL COOLER

MakeHarrison
 MaterialAluminum
 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

Corvaire 500, 700 and 900 Series
 Location.....Oil filter and generator adapter

Corvaire 95, Lakewood, Greenbrier
 LocationCrankcase right side

OIL PRESSURE GAUGE

TypeElectric

OIL PAN DRAIN SCREW

Type Hex head
 Location.....Rear center of oil pan
 Size:
 Hex head860-.875
 Thread 1/2-20 UNF-2A
 Length 0.81
 Diameter410-.430

ENGINE TORQUE SPECIFICATIONS

SIZE	MATERIAL	USED TO ATTACH	TORQUE
1/4-20	S.A.E. 1010-1020	Oil Pan Attachment.....	40-60 in.-lbs.
	G.M. 260-M	Oil Pump Cover.....	60-80 in.-lbs.
	S.A.E.—1018	Oil Cooler to Cyl. Head.....	60-80 in.-lbs.
	S.A.E.—1018	Rear Shroud L.H. & R.H. Attachment.....	60-80 in.-lbs.
	G.M. 260-M	Push Rod Guide.....	60-80 in.-lbs.
3/8-18	S.A.E. 1010-1020	Valve Rocker Cover.....	30-50 in.-lbs.
	G.M. 260-M	Crankcase L.H. to R.H.....	7-13 ft. lbs.
	G.M. 260-M	Crankcase Cover to Crankcase.....	7-13 ft. lbs.
	G.M. 260-M	Oil Cooler Adapter to Crankcase.....	7-13 ft. lbs.
	G.M. 260-M	Oil Filter and Generator Adapter.....	7-13 ft. lbs.
	G.M. 260-M	Rear Housing to Crankcase.....	7-13 ft. lbs.
	G.M. 280-M	Clutch Cover and Pressure Plate Attachment.....	15-20 ft. lbs.
1/2-24	G.M. 280-M	Clutch Pressure Plate Driving Strap.....	15-20 ft. lbs.
	G.M. 300-M	Flywheel or Drive Plate to Crankshaft Assembly.....	20-26 ft. lbs.
3/8-16	G.M. 280-M	Flywheel or Clutch Housing to Crankcase.....	20-30 ft. lbs.
	G.M. 260-M	Oil Cooler Attachment.....	8-12 ft. lbs.
3/4-20	G.M. 260-M	Skid Plate to Rear Housing.....	20-30 ft. lbs.
	G.M. 300-M	Crankcase L.H. to R.H.....	42-48 ft. lbs.
	G.M. 260-M	Oil Filter to Adapter.....	9-15 ft. lbs.
1/8-27		Oil Pressure Switch.....	45-65 in. lbs.
3/16-24	AISI C-1137 or A-3135	Nut—Connecting Rod.....	20-26 ft. lbs.
3/8-16	G.M. 286-M	Nut—Distributor Clamp.....	10-20 ft. lbs.
3/8-16	Steel	Nut—Exhaust Manifold to Cylinder Head.....	12-27 ft. lbs.
3/8-16	G.M. 286-M	Nut—Rear Mounting Bracket.....	20-30 ft. lbs.
3/8-16	--	Stud—Rear Mounting.....	5 ft. lbs.
3/8-24	AISI C-1137 or A-3135	Nut—Cylinder Head to Crankcase.....	27-33 ft. lbs.
3/8-16	G.M. 300-M	Stud—Cylinder Head to Crankcase at Assembly to Crankcase.....	10-30 ft. lbs.
3/8-24	G.M. 300-M	Stud—Valve Rocker Arm Ball.....	27-33 ft. lbs.
3/8-24	AISI C-1137 or AISI C-1035, C-1038	Nut—Valve Rocker Arm Ball Stud.....	55-125 in. lbs.
1/2-14		Oil Temperature Switch.....	10-15 ft. lbs.
14 MM		Spark Plug.....	20-25 ft. lbs.

CLUTCH—500, 700, 900, 1200 SERIES

(Section 6B)

Type.....Single plate dry disc
 Disc Diameter
 Models 500, 700, 900, 1205, 1206, 1244 and 1254... 9 1/8"
 R.P.O. 649 and 651..... 8"
 Clutch Pressure Spring
 TypeDiaphragm
 Diameter 9 1/8"
 Total Pressure
 Models 500, 700 and 900..... 900-1050 ft. lbs.

Models 1205, 1206, 1244 and 1254 1000-2000 ft. lbs.
 Cross-Shaft Outboard
 *Lever to Front Engine Mount..... 1/8"-3/8"
 Clutch Release Bearing
 TypeSealed Ball
 MakeNew Departure
 Clutch Pilot Bearing
 Type.....Oil Impregnated Bushing

*Clutch Pedal
Return Pressure 4 to 9 Pounds
To Start Pedal Movement
Clutch Housing Pilot Runout..... .015" T.I.R.

Flywheel Face Runout,
Installed on Flywheel..... .020" T.I.R.
Flywheel O.D. Runout..... .010" T.I.R.
*500, 700 and 900 Models

**REAR AXLE—500, 700 AND 900 SERIES,
CORVAIR 95 AND GREENBRIER—1200 SERIES
(Section 6C)**

GENERAL

Type.....Differential integral with engine and transmission, driving rear wheels independently through U-joints.
Lubricant Capacity (Pints)..... 3.1

AXLE SHAFT

Type.....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

Differential Pinion Shaft:

Length 3.890-3.900
Diameter6710-.6720

GEAR DATA

	Standard	Optional	
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
(Section 6D)**

GENERAL DATA

Make.....Chevrolet synchromesh, manual shift
Type3-Speed, 4-Speed
Location.....In rear compartment-integral with engine and differential.
Transmission Case Material.....Cast aluminum alloy

	3-Speed	4-Speed
Synchronization	2nd and 3rd	1st, 2nd, 3rd, 4th
Constant Mesh Gears		
Sliding Gears	2nd and 3rd	1st, 2nd, 3rd
Ratios	1st and reverse	Reverse

GEARSHIFT

ControlRemote
TypeLever
LocationFloor mounted

	500, 700, 900 Series		Greenbrier		Corvaire 95 1200 Series	
	3-Speed	4-Speed	3-Speed	4-Speed	3-Speed	4-Speed
First	3.50:1	3.65:1	3.50:1	4.27:1	3.50:1	4.26:1
Second	1.99:1	2.35:1	2.00:1	2.55:1	1.99:1	2.55:1
Third	1.00:1	1.44:1	1.00:1	1.55:1	1.00:1	1.68:1
Fourth		1.00:1		1.00:1		1.00:1
Reverse	3.97:1	3.66:1	3.65:1	4.27:1	3.97:1	4.27:1

GEARS

TypeHelical
MaterialForged steel, hardened

LUBRICANT

Type Recommended.....Multipurpose Gear Lubricant SAE 80.
Capacity (pt.) 1.9

AUTOMATIC TRANSMISSION—500, 700, 900 CORVAIR 95 AND GREENBRIER—1200 SERIES (Section 6E)

GENERAL DATA

Make and TypeChevrolet, 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.)
 DryApprox. 13
 RefillApprox. 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

TypeThree 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

TypeMultiple 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

TypeCompound planetary
 Gear Ratios
 Cruising range.....1:1 (direct drive)
 Low range1.82:1
 Reverse1.82:1
 Low brake band.....Double-wrap design
 Low band servo
 Type.....Piston, one release spring

HYDRAULIC CONTROLS

Manual Valve
 TypeSpool
 Pressure Regulator Valve
 TypeSpool
 Governor
 TypeCentrifugal
 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

	Standard	Optional
Make.....	Delco-Remy	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..... .025
 *Identified by daub of green paint on negative terminal.

GENERATOR

MakeDelco-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

MakeDelco-Remy
 Voltage regulator armature air gap..... .075
 Voltage regulator setting.... 13.8-14.8 volts @ 125°F
 Current regulator armature air gap..... .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..... .020
 Cut-Out relay point opening..... .020

STARTING MOTOR

MakeDelco-Remy
 Brush spring tension..... 35 oz. min.

DISTRIBUTOR

Free Speed
 Volts 10.6
 Amperes 58-80
 RPM 6750-8600
 Resistance Test (Armature Locked)
 Volts 4.0
 Amperes 280-320
 Solenoid
 Hold-in windings 10½-12½ amps. @ 10 volts
 Both windings 42-49 amps. @ 10 volts

IGNITION COIL

MakeDelco-Remy

IGNITION RESISTOR

Type.....Special Wire—Part of Harness
 Resistance1.8 ohms

SPARK PLUGS

Make AC
 Type (original equipment and service)..... AC-46FF
 Size 14mm
 Plug Gap035"
 Torque 20 to 25 ft. lbs.

ENGINE	Turbo-Air		Super Turbo-Air*
TRANSMISSION	Synchromesh	Powerglide	Synchromesh
Make		Delco-Remy	
Breaker point gap		.019" New, .016" Used	
Breaker arm spring tension		19-23 oz.	
Condensor 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° @ 700 rpm
	Intermediate	7°-9° @ 1050 rpm	6°-8° @ 1375 rpm
	Maximum	32° @ 3600 rpm	24° @ 4800 rpm
Vacuum Advance	Start	5"-7"	5"-7"
	Full Advance	14.5"-16"	14.5"-17"
	Max. Advance (Distributor Degrees)	23°	23°

*Not available on Corvair 95 and Greenbrier 1200 Series.

CHASSIS ELECTRICAL

BULB SPECIFICATIONS

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

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) 3.5-4.0 amp
(Dry Windshield) 4.5-6.0 amp
- Stall Current 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) 3-3.5 amp
(Dry Windshield) 4.5-5 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	1¼"	1¼"
Main Venturi	1"	1"
Radial Venturi .....	.050	.050
Idle Needle Orifice.....	.046	.046
Idle Tube Rest.....	.031	.032
Main Metering Jets.....	.048	.049
Main Well Vents.....	.045	.045
Cluster Top Bleed.....	.040	.040
Cluster Side Bleed.....	.040	.040
Pump Jets .....	.022	.022
Siphon Bleed.....	.059	.059

Adjustments

Float Level	1 ³ / ₆₄ "	1 ³ / ₆₄ "
Float Drop	1 ³ / ₄ "	1 ³ / ₄ "
Venting: Internal .....	.187"	
External	1/16"	

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......070-.085

BREAKER POINTS

Gap......020 (Nominal)
 Condenser Rating......15 mfd ± 25%

IGNITION COIL RATING

Primary.....4 ohm
 Secondary.....4,000 ohm

SOLENOID COIL RATING.....50 ohm

FUEL PRESSURE.....4½-5½ lbs.