

1950

# HUDSON



Specifications and Technical Data

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SPECIFICATIONS AND TECHNICAL DATA

FOR 500 SERIES HUDSONS

500 — 50A

501-502-503-504

Type	4 Wheel Bendix Hydraulic	4 Wheel Bendix Hydraulic
Drum Diameter	11"	11"
Front	Centrifuse	Centrifuse
Lining Type	Moulded	Moulded
Length and Widths, Front	20.108 - 1-3/4"	21.32 - 2-1/4"
Length and Widths Rear	20.108 - 1-3/4"	20.108 - 1-3/4"
Thickness	.177	.177
Wheel Cylinder Size		
Front	1 1/16"	1-1/8"
Rear	15/16"	15/16"
Adjustments	Anchor Pin Radially	Anchor Pin Radially
Front and Rear Shoe	Adjusting Screw	Adjusting Screw
Clearance		
Both Ends of Shoe	.010"	.0010"
Mechanical Follow	1-1/4"	1-1/4"
Pedal Free-Play	1/4"	1/4"
Total Fluid Capacity of:		
Brake System	1-1/2 U.S. Pints	1-1/2 U.S. Pints

CLUTCH

Driving Plate Diameter	9" Standard 10" With Overdrive Drivemaster or Super-Matic Drive	10" All Models
Type	Single Plate in Oil	Single Plate in Oil
Type Fluid	Hudsonite Compound	Hudsonite Compound
Quantity	1/3 Pint	1/3 Pint
Filler Plugs (2)	Front of Flywheel	Front of Flywheel
Plate Facing	Cork Inserts	Cork Inserts
Number of Corks	90	108
Pilot Bearing	Ball	Ball
Throwout Bearing	Ball	Ball
Engaging Fingers	3	3
Throwout Bearing		
Lubricant	Chassis Lube	Chassis Lube
Lube Fitting	Right Side of Clutch Hsg.	Right Side of Clutch Hsg.
Clutch Pedal Free Play Limit		
(Measured from underside of floor board to face of clutch pedal lever)	1-1/4" - 1-3/4"	1-1/4" - 1-3/4"
Engaging Springs		
Inner	6	3
Outer	9	12

CLUTCH - CONT'D

	<u>500 - 50A</u>	<u>501-502-503-504</u>
Engaging Spring Tension (Compressed to 1-5/8")		
Inner	75-85 Lbs.	75-85 Lbs.
Outer	130-140 Lbs.	130-140 Lbs.
Tightening Torque (both clutches):		
Throwout Finger Retainer Nuts		40-45 Ft. Pounds
Cover Cap Screws.		20-25 Ft. Pounds
Cover Driving Lug Nuts (10" only)		40-45 Ft. Pounds
Clutch housing Cap Screws		40-45 Ft. Pounds
Flywheel Bolt Nuts		20-25 Ft. Pounds

COOLING SYSTEM

	<u>500 - 50A</u>	501-502	503-504
Capacity	<u>20 QTS.</u>	20 QTS.	18 QTS.
With Heater	<u>19 QTS.</u>	19 QTS.	17 QTS.
Without Heater			
Circulation.		6 Vane Impeller Pump	
Temperature Control		Thermostat - By-pass	
Pump and Fan Drive		V-Belt	
Fan		4 Blade	
Fan Blade Pitch		1-1/2" - 1/32"	
Belt Adjustment		Generator Mounting	
Pump Bearing		2 Sealed Ball	
Lubrication		Pre-Lubricated	

ELECTRICAL SYSTEM  
GENERATOR

Make	Auto-Lite
Model	GDZ - 6001B
Type	Shunt
Volts	6
Control	Vibrating Type 3-unit Regulator
Controlled Output	35 Amperes
Poles	2
Brushes	2
Brush Spring Tension	35-53 Ounces (with new brushes)
Bearings	
Commutator End	Bronze
Drive End	Ball
Lubrication	
At Lube Periods	3 to 5 Drops Engine Oil at Each Oiler
At Overhaul	Pack Ball Bearings 1/2 full of high temperature, non fiber grease. Soak bronze bearing in engine oil and pack grease pocket with high temperature grease,

GENERATOR 500 SERIES  
CONT'D

Armature Shaft End Play	.003" to .010"
Ground Polarity	Positive
Field Coil Draw	1.6 to 1.8 Amperes at 6.0 Volts
Motorizing Draw	4.2 to 4.6 Amperes at 6.0 Volts
Output Test	
Cold	6.4 volts, 0 Amps. at 970 Max. R.P.M. 8.0 Volts, 35 Amps. at 2000 Max. R.P.M.
Hot	6.4 Volts, 0 Amps. at 1050 Max. R.P.M. 8.0 Volts, 35 Amps. at 2350 Max. R.P.M.

STARTER MOTOR

	<u>500</u>	<u>501-502-503-504</u>
Make	Auto-Lite	Auto-Lite
Model	MZ-4159	MCL-6006
Volts	4	6
Pole	4	4
Brushes	42-53 Oz.	4
Brush-Spring Tension	.005" to .0625"	42-53 oz.,
Armature Shaft End Play	5 Volts	.005" to .0625"
Cranking Voltage	160 Amps. at 120	5 Volts
Cranking Amperage (Approx.)	R.P.M.	160 Amps. at 120 R.P.M.
Free Running Test		
Volts	5.5	5.5
Amperes	70	58
R.P.M.	4300	5600
Stall Test:		
Volts	4.0	4.0
Amperes	540	880
Min. Ft. Lbs. Torque	1.3	25
Lubrication	None Required	3 to 5 drops engine oil in each oiler (2000 Miles)

VOLTAGE REGULATOR

500 SERIES

Make	Auto-Lite
Type	VRP-6002-A
Volts	6
Ground Polarity	Positive
Resistors	
R1	34.5 to 42 ohms (Marked 38)
R2	6.5 to 8.0 ohms (Marked 7)
Cutout Relays	
Armature Air Gap	.031" to .034"
Contact Point Gap	.015" Minimum
Contacts Close	6.4 to 7.0 Volts
Contacts Opens	
Volts	4.1 to 4.8 Volts After 15 Ampere Charge
Amperes Reverse Current	4 to 6 Amps <sup>o</sup>
Current Regulators	
Armature Air Gap	.48" to .052"
Operating Amperage	34.0 to 36.0 Amperes

VOLTAGE REGULATOR CONT'D

Operating voltage (at 10 Ampere charging rate:)

Temps. F	50°	60°	70°	80°	90°	100°	110°	120°
Volts	7.41	7.38	7.35	7.32	7.29	7.26	7.23	7.20

(allowable variation: plus or minus 0.15 volts)

Car speed for maximum charging rate	22 MPH
Winding Resistance:	
Two Shunt Coils in Parallel	7.9 to 8.8 ohms
Cutout Relay Voltage Winding	29.8 to 33.0 ohms
Voltage Regulator	10.4 to 12.0 ohms

DISTRIBUTOR

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Make	Auto-Lite	Auto-Lite	Auto-Lite
Model	IAT-4002	IGS-4213A-1	IGT-4204B-1
Rotation	Clockwise	Clockwise	Clockwise
Drive	Oil Pump	Oil Pump	Camshaft
Point Gap	.020"	.020"	.017"
Points Open	TDC	TDC	TDC
Cam Dwell	38°	38°	27°
Breaker Arm Spring Tension	17-20 Oz.	17-20 Oz.	17-20 Oz.
Condenser Capacity	020 - 025 mfd.	025 - 028 mfd.	.20 - .25 mfd,
Firing Order	1-5-3-6-2-4	1-5-3-6-2-4	1-6-2-5-8-3-7-4
Bearings			
Breaker Plate	None	Ball	Ball
Shaft	Bronze	Bronze	Bronze
Shaft Side Play, Max.	.005"	.005"	.005
Shaft End Play:			
Minimum	.003"	0003"	.003"
Maximum	.010"	0010"	.010"
Timing mark	Flywheel	Flywheel	Flywheel
Centrifugal Governor			
Advance (Distributor R.P.M.)	300 RPM 0° 335 RPM 1° 400 RPM 3° 1090 RPM 9° 1200 RPM 10°	500 RPM 0° 675 RPM 1° 1325 RPM 5° 1825 RPM 9° 2000 RPM 9°	300 RPM 0° 335 RPM 1° 400 RPM 3° 1575 RPM 16° 1700 RPM 17,5°

Advance must follow on a smooth curve within 1° of above at all points.

Vacuum Advance; (Distributer RPM)	9.2" Hg. 0° 10" Hg, 1° 10.5" Hg. 2° 11½" Hg. 4° 12" Hg. 5°	13-3/8" Hg. 0° 14" Hg, 1° 14-3/4" Hg. 2° 15-3/8" Hg. 3° 16" Hg. 3.5°	13-3/8" Hg. 0° 14" Hg, 1° 14-3/4" Hg. 2° 15-3/8" Hg. 3° 16" Hg. 3.5°
<u>COIL</u>			
Make	Auto-Lite	Auto-Lite	Auto-Lite
Model	CR-6012A	CR-6006A	CR-6006A
Amperage .Draw			
Engine Stopped	5.0 Amps. @ 6.3 V.	4.5 Amps. @ 6.3 V.	4.5 Amps. @ 6.3 V.
Engine Idling	1.5.2.0 Amps @ 6.3 V	2.5 Amps @ 6.3 V	2.5 Amps @ 6.3 V
Spark Plug	H-8 for Cast Iron or Alum. Hd.	H-8 for Cast Iron or Alum. Hd.	H-8 for Cast Iron or Alum. Hd.

ENGINE

	500 - 50A <u>6 CYLINDER</u>	501-502 <u>6 CYLINDER</u>	503-504 <u>8 CYLINDER</u>
Type	L-Head	L-Head	L-Head
Bore and Stroke	3-9/16" x 3-7/8"	3-9/16" x 4-3/80	3" x 461/2" 254 Cu. In. 128
Piston Displacement	232 Cu. In.	262 Cu. In.	@ 4200 RPM
Horsepower-Actual	112 @ 4000 RPM	123 @ 4000 RPM	28.8.
Taxable	30.4	30.4	
Compression Ratios			
Cast Iron Head (Std )	6.7:1	6.7:1	6.7:1
Aluminum Head (Opt.)	7.2:1	7.2:1	7.2:1
Compression Pressure	119 Lbs. @ 125 RPM	119 Lbs. @ 125 RPM	119 Lbs. @ 125 RPM
Firing Order	153624	1-5-3-6-2-4	1-6-2-5-8-3-7-1-4
Mounting	3 Points - Rubber	3 Points - Rubber	3 Points - Rubber
Number Location	Right Front	Right Front	Top of Block
Vibration Dampener	Yes (in rubber)	Yes (in rubber)	Yes (in rubber)
Maximum Torque	175 Ft. Lb 0@ 1600 RPM	200 Ft. Lb 0@ 1600 RPM	198 Ft. Lb. @ 1600 RPM

CAMSHAFT

	Cast Iron Alloy	Cast Iron Alloy	Cast Iron Alloy
Material	Cast Iron Alloy	Cast Iron Alloy	Cast Iron Alloy
Drive	Chain	Chain	Gears
Bearings			
Type	Steel-Back Babbit	Steel-Back Babbit	Steel-Back Babbit
Number	4	4	5
Diameter and Length			
No. 1	20375" x 1-3/16"	20375" x 1-3/16"	2.29" x 1-3/8"
No. 2	1.997" x 15/16"	1.997" x 15/16"	1.998" x 1-1/16"
No. 3	1.965" x 15/16"	1.965" x 15/16"	1.966" x 1-1/4"
No. 4	1497" x 1-5/16"	1497" x 1-5/16"	1.9355" x 1-1/16"
No. 5	None	None	1.498" x 1-5/16"
Radial Clearance	00015" to 0002"	00015" to 0002"	.001591 to .002"
End Play	0003" to 0005"	0003" to 0005"	Spring Loaded Thrust
Timing Marks	On sprockets and	On sprockets and	On gears
Timing Chain	chain	chain	
Timing Chain Width	60 Links 3/8" pitch 1-1/4"	60 Links 3/8" pitch 1-1/4"	None None

CRANKPINS

	Compensated	Compensated	Compensated
Type	Compensated	Compensated	Compensated
Journal Size	(Journals ;#1 thru #4)	(Journals ;#1 thru #4)	2.279 to 2.280
No. 1	2.4988 to 2.4998	2.4988 to 2.4998	2.311 to 2.312
No. 2			2.341 to 2.342
No. 3			2.373 to 2.374
No. 5	None	None	2.404 to 2.405
Crankpins	2.1244 to 2.1251	2.1244 to 2.1251	1.935 to 1.936
Main Bearing Size			
No. 1	(Journals #1 thru #4)	(Journals #1 thru #4)	2.2805 to 2.2815
No. 2	2.4993 to 205013	2.4993 to 205013	2.3125 to 2.3135
No. 3			2.3425 to 2.3435
No. 4			2.3745 to 2.3755
No. 5	None	None	2.4055 to 2.4065

ENGINE - CONT'D

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Radial Clearance	.0005" to .0015"	.0005" to .0015"	.001"
Adjusting Shims	None	None	None
End Play	.003" to 009"	.003" to 009"	.006" to 0012"
Thrust	On #3 Bearing	On #3 Bearing	On #3 Bearing

CONNECTING RODS:

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Material	Drop-Forged Steel	Drop-Forged Steel	Drop-Forged Steel
Weight	34.24 Oz. No Bearing	34.24 Oz. No Bearing	31.36 Oz. W/Babbitt
Length-Center to Center	8-1/8"	8-1/8"	8-3/16"
Bearing-Lower End	Replaceable Shells	Replaceable Shells	Integral
Type	Babbit Steel back	Babbit Steel back	Spun Babbit
Diameter and Length	2-1/8" x 1-5/8"	2-1/8" x 1-5/8"	1-15/16" x 1-3/8"
End Play	.007" to .013"	.007" to .013"	.007" to .013"
Diametral Clearance	.005" to .015"	.005" to .015"	.003" to .006"
Shims	None	None	None
Bushing-Upper End			
Material	Steel-back babbit	Steel-back babbit	Bronze
Diameter and Length	.96875 x 1-1/8"	.96875 x 1-1/8"	.750 x 29/32"
Diametral Clearance	0 to .0003 at 70°F	0 to .0003 at 70°F	0 to .0003" at 70°F

PISTON:

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Type	Cam Ground	Cam Ground	Cam Ground
Material	Aluminum alloy	Aluminum alloy	Aluminum alloy
Weight	18-3/8 Oz	18-1/8 Oz	10-1/4 to 11-1/4 Oz
Length	3-3/4"	3-3/4"	3-3/16"
Pin Center to Top	2.310" to 2.314"	2.060" to 2.064"	1.6875"
Clearance (Piston to bore)	.0015" to .0025"	.0015" to .0025"	.002" to .0025"
Ring Groove Depth	.0195"	.0195"	0.148"

PISTON PIN:

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Type	Floating	Floating	Floating
Length	2.9379"	2.9379"	2.4375"
Diameter	2.9684" to .9687"	2.9684" to .9687"	.7497" to .750"
Fit in Piston	0 to .0003"	0 to .0003"	0 to .0003"
	Tight at 70°F	Tight at 70°F	Tight at 70°F
Fit in Rod	Hand Push Fit at 70°F	Hand Push Fit at 70°F	Hand Push Fit at 70°F

PISTON RINGS:

	<u>500 - 50A</u>	<u>501-502</u>	<u>503-504</u>
Material	Cast Iron	Cast Iron	Cast Iron
Compression Rings	Two (Pinned)	Two (Pinned)	Two (Pinned)
Width	5/64"	5/64"	3/32"
Oil Rings	Two (Pinned)	Two (Pinned)	Two (Pinned)
	1-Below piston pin)	1-Below piston pin)	1-Below piston pin)
Width Upper	3/16"	3/16"	3/16"
Width Lower	5/32"	5/32"	5/32"
Gap Clearance	.006" to .014"	.006" to .014"	.004" to .009"
Ring Expanders	None	None	None



ENGINE - CONT'D

	<u>500 - 50A</u> <u>6 CYLINDER</u>	<u>501-502</u> <u>6 CYLINDER</u>	<u>503-504</u> <u>EIGHT CYLINDER</u>
<u>VALVES:</u>			
Intake			
Angle of seat	45°	45°	45°
Head Outside Diameter	1.831"	1.831"	1.500"
Port Diameter	1-11/16"	1-11/16"	1-3/8"
Lift	11/32"	11/32"	11/32"
Length	5.735"	5.735"	5.094"
Stem Diameter	.3412 to .3422	.3412 to .3422	.3407 to .3417
Stem to Guide:			
Clearance	.0015" to .003"	.0015" to .003"	.0015" to .003"
Operating Clearance			
Hot	.008"	.008"	.008"
Inserts	No	No	No
Exhaust:			
Angle of Seat	45°	45°	45°
Head Outside Diameter	1.556"	1.556"	1.375"
Port Diameter	1.375"	1.375"	1.223"
Lift	.346°	.346°	.343"
Length	5.730"	5.730"	5.094"
Stem Diameter	.3402" to .3412"	.3402" to .3412"	.3402" to .3412"
Stem to Guide			
Clearance	.002" to .004"	.002" to .004"	.003" to .005"
Operating Clearance:			
Hot	.010"	.010"	.010"
Valve Angle	7 Degrees	7 Degrees	Vertical
Inserts	No	No	No
<u>VALVE GUIDES:</u>			
Type	Removable	Removable	Removable
Length			
Intake	2-29/32"	2-29/32"	2-9/16"
Exhaust	3-5/32"	3-5/32"	3-15/16"
Inside Diameter	:3437"	:3437"	:3437"
<u>VALVE SPRINGS:</u>			
Free Length	2.500	2.500	2.343"
with Valve Closed	2.188"	2.188"	2.000" With
Valve Open	1.842"	1.842"	1.656"
Total Coils	9-1/2	9-1/2	9
Spring Pressure	77 Lbs. at 2-3/16"	77 Lbs. at 2-3/16"	40 Lbs. at 2"
<u>VALVE TAPPETS:</u>			
Type	Mushroom	Mushroom	Roller Cam
LGuides	Integral with block	Integral with block	Removable
Guide Size	.6245" to .6250"	.6245" to .6250"	.7495" to .7505"
Tappet Size	.62325" to .62375"	.62325" to .62375"	0749"
Fitting Clearance	.00075" to .0015"	.00075" to .0015"	.0005" to .0015"
Length	2.310	2.310	1.78125

ENGINE - CONT'D

500 - 50A  
6 CYLINDER

501-502  
6 CYLINDER

503-504  
EIGHT CYLINDER

VALVE TIMING:

Inlet Opens	7° 18' BUDC	7° 18' BUDC
Inlet Closes	53° -42' ALDC	53° -42' ALDC
Exhaust Opens	53° -18' BLDC	53° -18' BLDC
Exhaust Closes	7° -42' AUDC	7° -42' AUDC
Timing Marks	On Flywheel	On Flywheel

LUBRICATION:

Engine Lubricating Method	Pressure 40 lbs. at 30 MPH	Pressure 40 lbs. at 30 MPH	Duo-Flo 3 lbs.
Normal Pressure	Rotor	Rotor	Oscillating Plunger
Oil Pump Type	Worm on Camshaft	Worm on Camshaft	Worm on Camshaft
Oil Pump Drive	Dry, 7-1/2 Qts.	Dry, 7-1/2 Qts.	Dry, 8 Qts.
Oil Capacity	Refill, 7 Qts.	Refill, 7 Qts.	Refill, 7 Qts.

FRAME AND SHEET METAL

Wheel Base	119"	124"	124"
Overall Length Including Bumpers	201-1/2"	208"	208"
Height - Road to Roof	60-3/8"	60-3/8"	60-3/8"
Width - Fender to Feeder	77-1/16"	77-5/8"	77-5/8"
Road Clearance - Front and Rear	8-1/8"	8-1/8"	8-1/8"
Tread - Front	58-1/2"	58-1/2"	58-1/2"
Rear	55-1/2"	55-1/2"	55-1/2"

FRONT SUSPENSION

Type	Independent coil spring
Camber	1/2° to 1-1/2° Positive
Caster	1/2° to 1-1/2° Positive
Toe-in	0" to 1/16"
Spindle pin inclination	3° - 36'
Wheel bearing - Type	Adjustable tapered roller
End Play	.001 to .003
Tie Rod End Adjustment	
To Lengthen	Turn clockwise
To Shorten	Turn anti-clockwise

FRONT COIL SPRINGS:

<u>PART NO.</u>	<u>APPROX. FREE HEIGHT</u>	<u>HEIGHT PASS. LOAD</u>	<u>RATE</u>	<u>LOAD</u>
300442	15-1/16"	9-9/16"	386	2080
301621	1/-5/16"	9-9/16"	450	2010
303830	15-1/2"	9-9/16"	316	2300

NOTE! High Limit Springs identified by daub of red paint to be assembled on left side of car.

Low Limit Springs identified by daub of white paint to be assembled on right side of car.

FUEL SYSTEM  
CARBURETOR

	<u>500-50A</u> <u>6 CYLINDER</u>	<u>501-502</u> <u>6 CYLINDER</u>	<u>503-504</u> <u>8 CYLINDER</u>
Make	Carter	Carter	Carter
Model	WA1-749S	WGD 776-S	.CD 773-S
Type	Single throat 1-1/2" Dia.	Dual throat 1 1/4" Dia.	Dual throat 1-1/4" Dia.
Float level	1/2"	3/16"	3/16"
Idle adjustment	1/2 to 1-1/2 Turns open	1/2 to 1-1/2 Turns open	1/2 to 1-1/2 Turns open
Pump travel	16/64"	5/16"	5/16"
Metering rod	Vacumeter	Vacumeter	Vacumeter

ALL MODELS

Choke and Heat Control	Automatic-Thermostatic
Fuel Delivery	Pressure Pump
Pump Driven From	Camshaft
Air Cleaner and Silencer	Dry (Std.); oil bath (Optional)
Fuel Tank Capacity	20 U.S. Gallons

FUEL PUMP 6 OR 8 CYLINDER

	<u>STANDARD</u>	<u>OPTIONAL</u>
Make	Carter	AC
Model	M729SZ	AJ
Pressure	4 to 5 pounds	3 to 4 pounds
Vacuum @ 120 RPM	_____	8-1/2" Hg.
Vacuum @ 800 RPM	_____	12" Hg.

REAR AXLE  
500 SERIES

	<u>STANDARD</u>	<u>OPTIONAL</u>
Without Overdrive, Drivemaster or Supermatic	4.1 to 1	4.55 to 1
With HDM	4.1 to 1	4.55 to 1 or 3.82 to 1
With Overdrive	4.55 to 1	4.1 to 1
With Supermatic Drive	4.55 to 1	4.1 to 1

SPECIFICATIONS

TYPE	<u>SEMI-FLOATING</u>	<u>HYPOID</u>
<u>RATIO</u>	<u>GEAR</u>	<u>PINION</u>
4.1 TO 1	41-Teeth	10-Teeth
4.55 to 1	41-Teeth	9-Teeth
3.82 to 1	42-Teeth	11-Teeth
Drive Gear and Pinion Back-lash		.004 to .006
Pinion Bearings		Taper Roller
Adjustment		Shim
Differential Bearings		Taper Roller

REAR AXLE CONT'D

Adjustment	Adjusting Nut
Wheel Bearings	Taper Roller
Adjustment	Shim
Axle Shaft (Side-Play)	.001" to .004"
Lubrication	S. A. E. 90 Multi-Purpose (Gear Lubricant)
Quantity	3-1/2 Pints

REAR SPRINGS:

Type	Semi-elliptic Covered Uncovered
Covers	Metal
Length and Width	54" - 1-3/4"
No. Leaves	8
Shackles	Silent "U" Threaded
Lubricant - Shackles and Leaves	Viscous Chassis Lube.

STEERING GEAR

Type	Worm and 3 tooth roller
Ratio: Model 501-2-3-4	20.4 to 1
Model 500 - 50A	18.2 to 1
Steering Wheel: Model 500 - 50A	18" rubber wheel with horn button
501 - 503	18" plastic wheel with horn button
502 -504	Custom 18" plastic wheel with horn ring (Optional 50A-500, 501, 503)
Gear Shaft Bearings	Needle
Worm Shaft Bearings	Tapered roller
High Point	Notch on column straight down
Lubrication	S. A. E. 90 E.P.
Wheel Nut Torque	20 to 30 foot pounds
Gear Shaft Nut Torque	125 to 140 foot pounds
Gear to Frame Bolts	50 to 60 foot pounds

TRANSMISSION

GEAR RATIOS

SPEEDOMETER DRIVER GEAR

All Series with or without Drivemaster

			<u>AXLE RATIO</u>	<u>TIRE SIZES</u>	<u>NO. OF TEETH</u>
2.88 to 1	Low	Less Overdrive or	4-1/10	7.10-15	10
1.82 to 1	Second	Supermatic	4-1/10	7.60-15	11
1 to 1	High		4-5/9	All	11
3.5 to 1	Reverse		3-9/11	All	11
		With Overdrive or Supermatic	All	All	11

TRANSMISSION CONT'D

GEAR TEETH

SPEEDOMETER PINIONS

		AXLE RATIO	TIRE SIZES	NO. OF TEETH
Countershaft Cluster Gear		4-1/10	7.10-15	15
	Less Overdrive or Supermatic	4-1/10	7.60-15	16
Drive	26 Teeth	4-5/9	7.10-15	18
Second	21 Teeth	4-5/9	7.60-15	18
Low	17 Teeth	3-9/11	All	15
Reverse	14 Teeth	4-1/10	7.10-15	16
Main Drive Gear				
2.88 to 1 Ratio	17 Teeth			

GOVERNOR PINIONS

Mainshaft-Intermediate Gear				
Helical	25 Teeth			
Clutch.	30 Teeth	With Drivemaster	4-1/10	7.10-15
			4-1/10	7.60-15
Mainshaft-Low and Reverse Gear			4-5/9	7.60-15
			3-9/11	All
External	32 Teeth	With Overdrive or	4-1/10	7.10-15
Spline Internal	24 Teeth	Supermatic		
Reverse Idler gear	18 Teeth			

SPEEDOMETER CABLE

<u>END PLAY</u>			
Countershaft	.006" to .016"	Without Overdrive	58"
Mainshaft Intermediate Gear and Synchronizer	.003" to .010"	With Overdrive	64"
Reverse Idler Gear	.003" to .010"		

TORQUE SPECIFICATIONS

NAME	SIZE	FT. LBS
Axle (rear) Differential Case Cap Screw	7/16-14	40-45
Axle (rear) wheel bearing Adjusting	3/8-24	30-35
Axle (rear) Drive Gear Bolt	7/16-20	50-60
Axle (rear) Differential Carrier Bearing Cap Screw	1/2-13	55-65
Axle (rear) Drive Shaft Nuts	3/4-20	125-200
Battery Hold-Down Bolt Nut	5/16-24	2-3
Brake Anchor Pin Nut	5/8-18	80-90
Brake Control Tube Nut	3/8-24	8-9
Breather Tube and Valve Cover Bolt (8 Cyl.)	5/16-18	2-3/4-3-1/4
Clutch Throwout Finger Retainer	7/16-20	40-45
Clutch Cover Bolts	5/16-24	20-25
Clutch Cover Driving Lug	7/16-20	40-45
Clutch Housing Cap Screw	7/16-14	40-45
Connecting Rod Bolt	3/8-24	40-45
Camshaft Gear Bolt	3/8-16	20-30
Crankshaft Brg. Cap Stud (8 Cyl.)	1/2-20	70-80
Crankshaft Brg. Cap Screw (6 Cyl.)	1/2-13	75-80
Cylinder Head Cap Screws (6 Cyl.)	7/16-14	60-65
Cylinder Head Studs (8 Cyl.)	7/16-14	45-50
Cylinder Support Plate Bolt	3/8-16	20-30
Cylinder Head water Outlet Bolt	3/8-16	20-30
Diff. Carrier to Housing Bolt	3/8-24	35-40

TORQUE SPECIFICATIONS CONT'D

NAME	SIZE	FT. LBS
Engine Mounting Bolt (rear)	7/16-14	40-50
Engine Mounting Bolt (front)	7/16-20	40-45
Flywheel Bolts (8 Cyl.)	3/8-24	40-45
Front Frame Anchor Bracket Bolt	1/2-20	20-25
Manifold (intake) stud	5/16-18	12-15
Manifold (exhaust) stud	3/8-16	20-30
Overdrive to Trans. Case Bolt	3/8-16	20-30
Oil Pan Bolt	5/16-18	15-20
Prop. Shaft Companion Flange nut	3/4-16	90-100
Prop. Shaft " U" Bolts	5/16-24	20-25
Prop. Shaft Center Brg. Supt. Bolt (To #6 c/m)	5/16-24	20-25
Prop. Shaft Center Brg. Supt. C/M Bolt (To #5 C/M)	3/8-24	25-30
Pedal Rod Nut	7/16-20	25-30
Rear Spring Clips	1/2-20	70-80
Spark Plugs	14 M.M.	25-30
Speedometer Housing Screw	5/16-18	15-20
Strg. Arm (outer) Nut	3/4-16	110-116
Strg. Arm (center) Nut	5/8-18	50-60
Steering Gear Shaft Nut	7/8-114	125-140
Strg. Gear to Frame Bolt	7/16-20	50-60
Strg. Spindle to Backing Plate Bolt Nut	3/8-24	25-30
Strg. Spindle Nut	11/16-18	75
Strg. Spindle Support Clamp Bolt	3/8-24	40-45
Strg. Spindle Supt. Arm (Lower) Pivot to Frame Bolt	7/16-20	60-70
Strg. Spindle Supt. Arm (Upper) Pivot to Frame Bolt	1/2-20	60-70
Strg. Spindle Supt. Arm to Support Bolt Nut	13/16-11	100-120
Steering Wheel Nut	5/8-18	20-30
Tie Rod End Stud Nut	1/2-20	60-70
Timing Gear Cover Bolt	5/16-18	15-20
Transmission Comp. Flange Lock Nut	3/4-16	90-100
Vibration Dampener Screw	3/4-16	100-120
Water Pump to Cylinder Bolt	3/8-16	20-30
Water Pump Fan Blade Bolt	5/16-18	12-15
Wheel hub Bolts	1/2-20	60-65

SIX CYLINDER MAIN BEARING, CRANKSHAFT, AND BORE DIAMETERS

BEARING NUMBER	DIAMETRAL CLEARANCE	CRANKSHAFT DIAMETER	BORE DIAMETER
No. 1	* .001	* 2.280	* <u>2.6535</u> 2.6550
No. 2	.001	2.332	<u>2.6855</u> 2.6870
No. 3	.001	2.342	<u>2.7155</u> 2.7170
No. 4	.001	2.374	<u>2/7475</u> 2/7490

SIX CYLINDER CONNECTING ROD BEARING SIZES,  
CRANKPIN DIAMETERS & BORE

BEARING NUMBER	SHELL THICKNESS	CRANKPIN DIAMETER	BORE
Standard	<u>.0622</u> .0619	<u>2.1254</u> 2.1244	<u>2.2505</u> 2.2500
.0005 Undersize	<u>.0627</u> .0624	<u>2.1254</u> 2.1244	<u>2.2505</u> 2.2500
.002 Undersize	<u>.0632</u> .0629	<u>2.1234</u> 2.1229	<u>2.2505</u> 2.2500
.010 Undersize	<u>.0672</u> .0699	<u>2.1154</u> 2.1149	<u>2.2505</u> 2.2500
.012 Undersize	<u>.0682</u> .0679	<u>2.1134</u> 2.1129	<u>2.2505</u> 2.2500

EIGHT CYLINDER MAIN BEARING CLEARANCE  
CRANKSHAFT & BORE DIAMETERS

BEARING NUMBER	DIAMETRAL CLEARANCE	CRANKSHAFT DIAMETER	BORE DIAMETER
No. 1	* .001	* 2.280	* <u>2.6535</u> 2.6550
No. 2	.001	2.312	<u>2.6855</u> 2.6870
No. 3	.001	2.342	<u>2.7155</u> 2.7170
No. 4	.001	2.374	<u>2.7475</u> 2.7490
No. 5	.001	2.405	<u>2.7785</u> 2.7800

NOTE: To determine shell thickness proceed as follows:

1. Add the diametral clearance to the crankshaft diameter.
2. Subtract the total from the block bore diameter.
3. Divide the answer by two to determine the thickness of the bearing shell\*

\*EXAMPLE: 2.280 Crankshaft  
+ 0.001 Diametral Clearance  
2.281 TOTAL

2.6535 Bore Diameter  
- 2.2810  
2 0.3725  
0.18525 Thickness of Bearing Shell

EIGHT CYLINDER CONNECTING ROD BEARING CLEARANCE, CRANKPIN DIAMETER AND FINISHED BORE DIAMETER

BEARINGS	DIAMETRAL CLEARANCE	CRANKPIN DIAMETERS	FINISHED BEARING BORE
#1 thru #8	<u>.0003</u> .0006	<u>1.9350</u> 1.9353	<u>1.9353</u> 1.9359
CONNECTING ROD BEARINGS .010 Undersize			
#1 thru #8	<u>.0003</u> .0006	<u>1.9350</u> 1.9353	<u>1.9353</u> 1.9359



MAJOR  
OPTIONAL EQUIPMENT ITEMS

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<u>OPTION</u>	<u>NAME</u>	<u>LIST PRICE</u>	<u>DEALER NET</u>	<u>DEALER PROFIT</u>	<u>PROVISION FOR FEDERAL TAX</u>
Y	Radio	\$79.40	\$55.58	\$23.82	\$4.36
X	Weather Control	61.40	44.21	17.19	2.75
X	Weather Control (500 Only)	57.75	41.58	16.17	2.59
WW	White Side Walls	22.65	16.99	5.66	.69
C	Super-Matic Drive	189.50	147.81	41.69	9.81
L	Drive-Master	99.50	77.61	21.89	5.15
T	Overdrive	90.00	70.20	19.80	4.66
ZZ	Comm. Side Panel Strip (100% on 501-503)	25.00	18.75	6.25	1.23
R	Front Bumper Guards (100% on 500-501-503)	12.75	9.56	3.19	.63

OPTIONAL EQUIPMENT GROUPS AVAILABLE

<u>OPTION</u>	<u>NAME</u>	<u>DESCRIPTION</u>	<u>LIST PRICE</u>	<u>NET PRICE TO MASTER DEALER (Not incl. Tax)</u>	<u>DEALER PROFIT</u>	<u>PROVISION FOR FEDERAL TAX</u>
AP	APPEARANCE GROUP: Models 50A-501-503 Consisting of:	Commodore Steering Wheel Exhaust Deflector Front Fender Ornament Large Hub Caps Rear Window Reveal Mouldings	\$37.80	\$24.57	\$13.23	\$1.59
AP	APPEARANCE GROUP: Model 500	Commodore Steering Wheel Exhaust Deflector Front Fender Ornament Large Hub Caps Rear Window Reveal Mouldings	37.80	25.87	13.93	1.67
AP	APPEARANCE GROUP: Models 502-504	Wheel Trim Rings Exhaust Deflector	14.45	9.39	5.06	.61
SK	SAFETY GROUP: All models Consisting of:	Back-Up Lamp Direction Indicator Outside Rear View Mirror Windshield Washer Vacuum Booster Glare Proof Mirror	58.40	37.96	20.44	2.45

OPTIONAL EQUIPMENT GROUPS AVAILABLE

<u>OPTION</u>	<u>NAME</u>	<u>DESCRIPTION</u>	<u>LIST PRICE</u>	<u>NET PRICE TO MASTER DEALER (Not incl. Tax)</u>	<u>DEALER PROFIT</u>	<u>PROVISION FOR FEDERAL TAX</u>
OC	COMFORT & CONVENIENCE GROUP Models 50A-500-501-503) Consisting of	Air Foam Seat Cushions Window & Wing Vents Cigar Lighter Vanity Mirror Electric Clock Automatic Lights (In Glove Box-In Trunk-Under Hood) Spare Tire Air Extension	\$70.55	\$45.86	\$29.69	\$2.96
OC	COMFORT & CONVENIENCE GROUP Models 502-504	Window & Wing Vents Vanity Mirror Automatic Lights Spare Tire Air Extension	28.70	18.65	10.05	1.21
UK	UTILITY GROUP: All Models	Hydraulic Jack Magnalite (500-50A-501-503)	15.40	10.01	5.39	.65
PK	PROTECTION GROUP: Models 50A-500	Grille Guard Rear Deck Guard Oil Filter Oil Bath Air Cleaner	61.25	39.81	21.44	2.57
PK	PROTECTION GROUP Models 501-502	Grille Guard Oil Filter. Oil Bath Air Cleaner	39.80	25.87	13.93	1.67
PK	PROTECTION GROUP: Models 502-504	Grille Guard Oil Filter Oil Bath Air Cleaner	44.95	29.09	15.66	1.88

OPTIONAL EQUIPMENT GROUPS AVAILABLE

<u>OPTION</u>	<u>NAME</u>	<u>LIST PRICE</u>	<u>NET PRICE TO MASTER DEALER (Not incl. Tax)</u>	<u>DEALER PROFIT</u>	<u>PROVISION FOR FEDERAL TAX</u>
FL	Fog Lamps	\$17.50	\$11.38	\$ 6.12	\$.74
SL	Spotlight	22.25	14.46	7.79	.93
OV	Outside Visor & Traffic Light Viewer	29.45	19.14	10.31	1.24
WA	Windshield Washer	9.95	6.47	3.48	.42
UL	Automatic Utility Lights (Glove Box - Hood - Trunk)	7.75	5.81	1.94	.38
TL	Back-Up Light	10.75	8.06	2.69	.53
LI	Cigar Lighter	3.50	2.63	.87	.17
DE	Exhaust Deflector	1.75	1.31	.44	.09
FG	Grille Guard	21.45	16.08	5.37	1.05
GM	Glare Proof Mirror	4.25	3.19	1.06	.21
ZE	Hydraulic Jack	11.45	8.59	2.86	.56
OF	Oil Filter - 6 Cyl.	12.35	9.26	3.09	.61
OF	Oil Filter - 8 Cyl.	15.40	11,55	3.85	.75
TD	Outside Rear View Mirror	5.00	3.75	1.25	.25
RG	Rear Deck Guard	21.45	16.08	5.37	1.05
ST	Spare Tire Valve Extension	2.75	2.06	.69	.14
MV	Vanity Mirror	1.75	1.31	.44	.09
VP	Window & Wing Ventshades	16.45	12.34	4.11	.81
MA	Magnalite	3.95	2.96	.99	.19

OPTIONAL SEAT COVERS AVAILABLE  
WITH NEW CARS FROM FACTORY

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<u>OPTION</u>	<u>MODELS</u>	<u>DESCRIPTION</u>		<u>LIST PRICE</u>	<u>DEALER NET</u>	<u>DEALER PROFIT</u>	<u>PROVISION FOR FEDERAL TAX</u>
CA	50A-500-501-503 Sedan	Rayon Twill	HA-214625	\$41.95	\$25.17	\$16.78	\$1.47
CA	50A-500-501-503 Brough.	Rayon Twill	HA-214626	42.95	25.77	17.18	1.50
CA	50A-500-501-503 Club Cpe.	" "	HA-214622	44.75	26.85	17.90	1.57
CB	502-504 Sedan	" " - Tan Uph.	HA-214633	44.75	26.85	17.90	1.57
CD	502-504 Sedan	" " - Gray "	HA-214637	44.75	26.85	17.90	1.57
CB	502-504 Cl. Cpe.	" " - Tan "	HA-214634	48.75	29.25	19.50	1.71
CD	502-504 Cl. Cpe.	" " - Gray "	HA-214638	48.75	29.25	19.50	1.71
CE	50A-500-501-503 Sedan	Matting - Custom	HA-214629	24.95	14.97	9.98	.87
CE	50A-500-501-503 Brough.	" - "	HA-214630	26.75	16.05	10.70	.94
CE	50A-500-501-503 Cl. Cpe.	" " - "	HA-214623	25.80	15.48	10.32	.90
CH	502-504 Sedan	" Cust. -Tan Uph.	HA-214641	27.95	16.77	11.18	.98
CL	502-504 Sedan	" " - Gray "	HA-214645	27.95	16.77	11.18	.98
CH	502-504 Cl. Cpe.	" " - Tan "	HA-214642	28.50	17.10	11.40	1.00
CL	502-504 Cl. Cpe.	" " - Gray "	HA-214646	26.50	17.10	11.40	1.00
CO	50A-500-501-503 Sedan	" DeLuxe	HA-214775	19.95	11.97	7.98	.70
CO	50A-500-501-503 Brough.	" DeLuxe	HA-214776	21.50	12.90	8.60	.75
CO	50A-500-501-503 Cl. Cpe.	" DeLuxe	HA-214624	21.50	12.90	8.60	.75
CP	502-504 Sedan	" " - Tan Uph.	HA-214781	24.75	14.85	9.90	.87
CT	502-504 Sedan	" " - Gray "	HA-214785	24.75	14.85	9.90	.87
CP	502-504 Cl. Cpe.	" " - Tan "	HA-214782	25.75	15.45	10.30	.90
CT	502-504 Cl. Cpe.	" " - Gray "	HA-214786	25.75	15.45	10.30	.90



