

COOLING & HEATING GROUP XI

GENERAL

COOLING SYSTEM

The cooling system in the Checker is of the pressure type. This means that the water is under pressure when operating with a pressure cap on the radiator. The pressure cap is designed with a spring pressure of approximately four pounds to hold the sealing portion of the cap tight against the top of the filler neck. Under this pressure, created by the cap, water is prevented from boiling at its normal boiling point.

As you know, water boils at 212 degrees Fahrenheit at normal atmospheric pressure. You also know that under low atmospheric pressures, as found in high altitudes, water will boil at less than 212 degrees. On the other hand, if more pressure is applied, water will boil at higher than 212 degrees temperature. This is the principal used in a pressure cooling system. The cooling system is sealed by the pressure cap, causing pressure to be developed, raising the boiling point of the water.

The boiling point of the water in the system is increased 3 degrees for every pound increase of pressure. The Checker cooling system has a four pound pressure cap, thus, the boiling point of the water is 224 degrees.

We have learned, from records of innumerable tests, that an engine operates more efficiently at high temperatures. Gasoline economy is better and sludge formation is minimized. The Checker is equipped with thermostatically operated shutters, which are used to help maintain these higher temperatures for winter driving, and to furnish additional heat to the car heater in extremely cold outside temperatures. The thermostat is set to start opening at 170 degrees. Depending on outside temperatures, the normal water temperatures will be from 170 to 200 degrees and with a pressure cap, temperatures can go over 212 degrees without affecting the efficiency of the engine or without any danger of overheating.

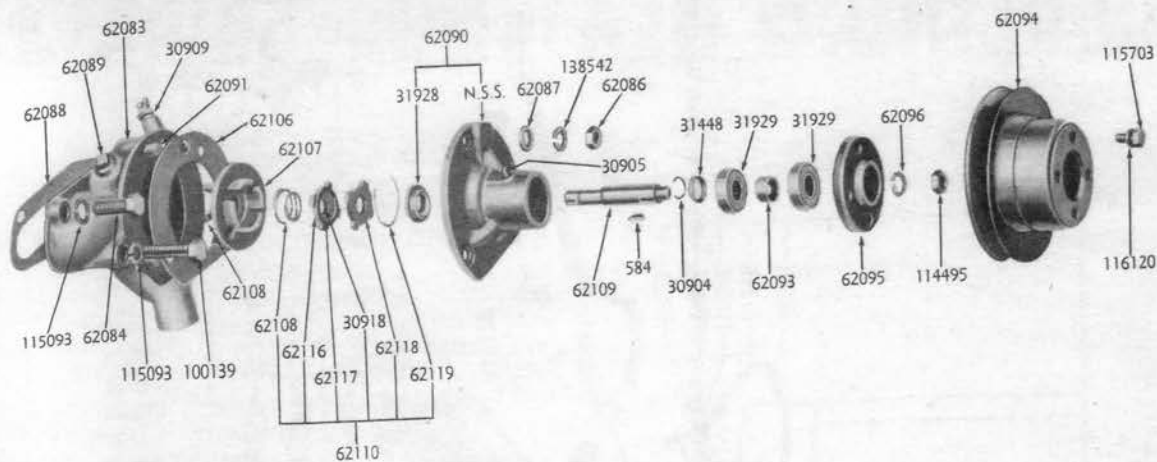
Real overheating will be indicated by the continued loss of water boiling out of the radiator, and unless this happens the system is working in a normal and satisfactory manner. However, if the radiator is over filled, some water will be lost through the over flow pipe when the engine is warmed up the first time. This loss, however, will not continue and additional water should not be added.

The radiator cap should not be removed when the engine is hot, as the removal will release the pressure in the cooling system and cause the hot water to overflow the filler neck. When the cap is removed and pressure is lost, pressure cannot be again built up until engine has cooled.

Be guided, therefore, by the heat indicator. As long as it stays within the operating range, marked on the dial, the cooling system is functioning properly; and you should instruct filling station attendants to leave the radiator cap alone. The cooling system then will retain its maximum temperature control and the engine will continue to operate at its greatest efficiency.

HEATING SYSTEM

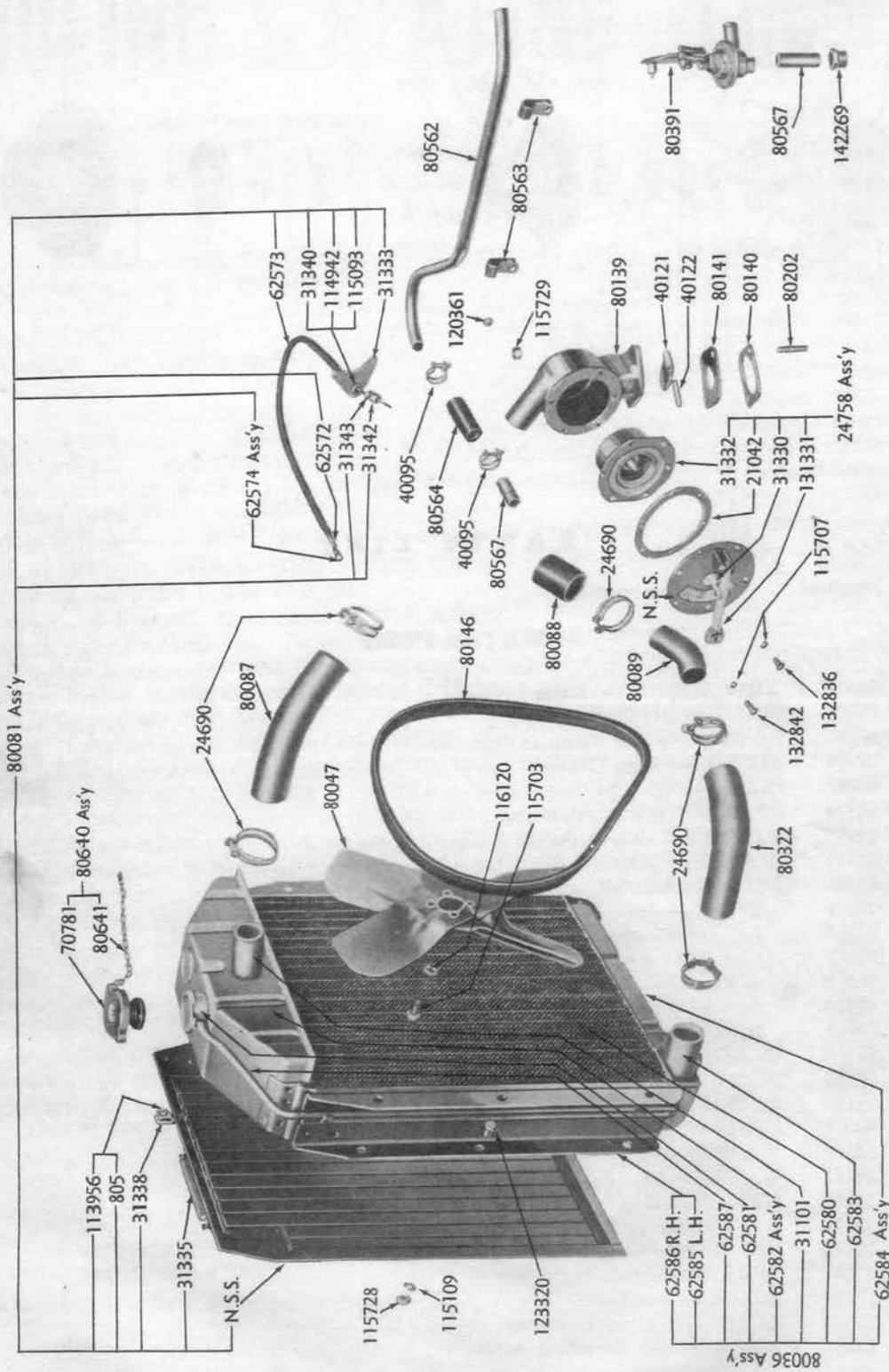
The Checker is equipped with a centrally located heater on all cars with driver's partition. On cars equipped with full front seat, heater is located under dash. All models have defrosters, but in cabs with partitions, defroster blower is a separate unit, while in those cars with full front seat, defroster is part of the heater.

GROUP 11**COOLING AND HEATING**

WATER PUMP

PARTS LIST

No. Req'd.	Part Number	Description
WATER PUMP		
1	62082	PUMP ASSEMBLY—Water
1	62083	BODY—Water Pump
1	62088	GASKET—Water Pump to Cylinder
1	30909	FITTING—Pump Grease
1	62089	PLUG—Pump Pipe
1	62109	SHAFT—Water Pump Drive
1	62107	IMPELLER—Water Pump
1	62108	SCREW—Impeller to Shaft Set
1	62110	SEAL ASSEMBLY
1	30917	SPRING—Seal
1	62117	BELLOWS—Seal
1	62118	CARBON—Seal
1	30918	RING—Seal Reinforcing Small
1	62116	RING—Seal Reinforcing Large
1	62119	RING—Seal Snap
1	62106	GASKET—Support to Body
1	62090	SUPPORT ASSEMBLY—Pump Drive Shaft
1	31928	BUSHING—Support Drive Shaft
2	62091	STUD—Support Body
1	62087	WASHER—Water Pump to Cylinder Stud Copper
3	138542	WASHER—Stud Lock
3	62086	NUT—Stud Hex
1	30904	RING—Bearing Retaining Snap
1	31448	RETAINER—Snap Ring to Shaft
2	31929	BEARING—Shaft
1	62093	SPACER—Bearing
1	30905	SCREW—Bearing Retaining
1	62092	NUT—Bearing Retaining Screw
1	62095	HUB—Fan Blade
1	584	KEY—Hub to Shaft
1	62096	WASHER—Hub to Shaft Lock
1	114495	NUT—Hub to Shaft
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1	62084	SCREW—Body to Cylinder Hex Hd.
1	100139	SCREW—Body to Cylinder Hex Hd.
1	62085	STUD—Water Pump to Cylinder
2	115093	WASHER—Body to Cylinder Screw Lock



COOLING AND HEATING SYSTEM

GROUP 11**COOLING AND HEATING****PARTS LIST**

No. Req'd.	Part Number	Description
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RADIATOR

1	80036	RADIATOR ASSEMBLY
1	62580	CORE—Radiator
1	62582	TANK ASSEMBLY—Top
1	31101	CONNECTION—Top Hose
1	62581	NECK—Filler
1	62587	TUBE—Overflow
1	62584	TANK ASSEMBLY—Bottom
1	62583	CONNECTION—Bottom Hose
1	62586	STRIP ASSEMBLY—R. H. Side Bolt
1	62585	STRIP ASSEMBLY—L. H. Side Bolt
1	80640	CAP & CHAIN ASSEMBLY—Radiator
1	70781	CAP—Radiator
1	80641	CHAIN ASSEMBLY
1	80642	CLAMP—Radiator Filler Neck Chain
1	129028	SCREW—Radiator Filler Neck Chain Clamp Rd. Hd.
1	198473	WASHER—Radiator Filler Neck Chain Clamp Screw Lock
1	134532	NUT—Radiator Filler Neck Chain Clamp Screw
2	80088	HOSE—Radiator Outlet (1 req'd. before Chassis #4000)
1	80089	TUBE—Radiator Outlet (Before Chassis #4000)
1	80697	TUBE—Radiator Outlet (After Chassis #4000)
1	80322	ELBOW—Radiator Outlet (Before Chassis #4000)
1	80087	HOSE—Radiator Inlet (With Winterfront)
1	80372	HOSE—Radiator Inlet (Without Winterfront)
6	24690	CLAMP—Hose
1	23305	COCK—Radiator—1/4 I. P. Drain
6	119860	BOLT—Radiator Mounting Hex Hd.
6	115109	WASHER—Radiator Mounting Bolt Lock
6	118613	NUT—Radiator Mounting Bolt Hex (For Service Only)

WINTERFRONT

1	80081	WINTERFRONT ASSEMBLY
1	62574	CABLE & FERRULE ASSEMBLY
1	62572	CASING—Flexible
1	62573	LOOM—Auto
2	62570	WASHER—Return Spring Post
1	107761	PIN—Return Spring Post Cotter
1	31335	SPRING—Return
1	31338	CLAMP—Flexible Casing
1	113956	SCREW—Flexible Casing Clamp Rd. Hd.
1	805	NUT—Flexible Casing Clamp Screw
1	31333	BRACKET—Cover
1	31340	FITTING—Male
1	115093	WASHER—Male Fitting Lock
1	114942	NUT—Male Fitting Hex
1	31342	COLLET
1	31343	NUT—Collet
6	123320	BOLT—Winterfront to Radiator Mounting Hex Hd.
6	115109	WASHER—Winterfront to Radiator Mounting Bolt Lock
6	115728	NUT—Winterfront to Radiator Mounting Bolt Hex

WINTERFRONT CONTROLS

1	24758	THERMOSTAT ASSEMBLY—(For use with Winterfront)
1	31332	THERMOSTAT UNIT
1	21042	GASKET—Thermostat
1	31330	YOKE
1	31331	ARM & SWIVEL ASSEMBLY—Crank
1	21046	PIN—Arm and Swivel Assm. to Yoke

COOLING AND HEATING**GROUP 11****PARTS LIST**

No. Req'd.	Part Number	Description
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WINTERFRONT CONTROLS (CONT.)

1	20590	PIN—Arm and Swivel Assm. to Thermostat Cover
2	112526	PIN—Cotter
4	132836	SCREW—Cover Fastening Rd. Hd. (For use with Winterfront)
2	132842	SCREW—Cover Fastening Rd. Hd. (For use with Winterfront)
6	115707	WASHER—Cover Fastening Screw Lock (For use with Winterfront)
2	120361	NUT—Cover Fastening Screw Hex (For use with Winterfront)

CYLINDER WATER CONNECTIONS

1	80139	OUTLET—Engine Water (For use with Winterfront)
2	80202	STUD—Water Outlet (For use with Winterfront)
1	80362	ELBOW—Engine Water Outlet (For use without Winterfront)
2	62101	STUD—Water Outlet Elbow (For use without Winterfront)
2	116120	WASHER—Water Outlet Stud Lock
2	115729	NUT—Water Outlet Stud Hex
2	80140	GASKET—Water Outlet
1	80141	PLATE—Water Outlet Reducing
1	40121	DOOR—Water Outlet Check Valve
1	40122	PIN—Valve Door
1	80374	GASKET—Elbow to Head
1	40042	COCK—Cylinder Water Drain
1	80375	THERMOSTAT—Engine
1	80373	RING—Thermostat Adapter

HEATER CONTROL AND HOSES

1	80391	VALVE ASSEMBLY—Water Control
1	80567	NIPPLE—Valve to Bushing
1	142269	BUSHING—Valve to Cylinder Head Reducing
1	80342	CONTROL ASSEMBLY—Water Valve
1	62652	PLUNGER & WIRE ASSEMBLY
2	80430	TEE—Heater Drain Valve Coupling
2	23305	VALVE—Heater Drain
3	80564	HOSE—Heater to Tee and Water Pump
1	80566	HOSE—Engine to Rear of Heater
1	80565	HOSE—Front of Heater to Engine Tube
1	80562	TUBE—Heater Engine
2	80563	CLIP—Heater Engine Tube
10	40095	CLAMP—Hose
1	80558	CLIP—Heater Hose to Transmission Support
1	118772	BOLT—Clip Hex Hd.
1	118774	WASHER—Clip Bolt Flat
1	116120	WASHER—Clip Bolt Lock
1	115729	NUT—Clip Bolt Hex
2	80727	CLIP—80566 to 80565 Banding

FAN AND PULLEY

1	62094	PULLEY ASSEMBLY—Fan
1	80146	BELT—Fan and Generator
1	80047	BLADE ASSEMBLY—Fan
4	115703	BOLT—Fan Blade Mounting Hex Hd.
4	116120	WASHER—Fan Blade Mounting Bolt Lock