UNDER CONCENTRATED

FREEZE POINT ADJUSTMENT CHART FOR UNDERCONCENTRATED SYSTEMS

(Use this chart to adjust your freeze point down to -35°F)

For use with ethylene glycol based fluids.

TESTED FREEZE PROTECTION(°F)	%AF IN COOLANT	TOTAL COOLANT SYSTEM VOLUME								
		7-GAL	8-GAL	9-GAL	10-GAL	11-GAL	12-GAL	13-GAL	14-GAL	15-GAL
		VOLUME TO DRAIN AND REPLACE WITH COOLANT CONCENTRATE								
25	10	3	3-1/2	4	4-1/2	5	5-1/4	5-3/4	6-1/4	6-3/4
20	16	2-3/4	3-1/4	3-3/4	4	4-1/2	4-3/4	5-1/4	5-3/4	6
15	21	2-1/2	3	3-1/4	3-3/4	4	4-1/2	4-3/4	5-1/4	5-1/2
10	25	2-1/4	2-3/4	3	3-1/4	3-3/4	4	4-1/4	4-3/4	5
5	29	2	2-1/4	2-3/4	3	3-1/4	3-1/2	3-3/4	4-1/4	4-1/2
0	33	1-3/4	2	2-1/4	2-1/2	2-3/4	3	3-1/4	3-1/2	3-3/4
-5	36	1-1/2	1-3/4	2	2-1/4	2-1/2	2-3/4	2-3/4	3	3-1/4
-10	39	1-1/4	1-1/2	1-1/2	1-3/4	2	2-1/4	2-1/4	2-1/2	2-3/4
-15	42	1	1	1-1/4	1-1/2	1-1/2	1-3/4	1-3/4	2	2
-20	44	3/4	3/4	1	1	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2
-25	46	1/2	1/2	3/4	3/4	3/4	1	1	1	1
-30	48	1/4	1/4	1/4	1/2	1/2	1/2	1/2	1/2	1/2
-35	50	0	0	0	0	0	0	0	0	0

Using a refractometer, measure freeze point of coolant, match reading with a value under the "Tested Freeze Protection" column. Determine cooling system volume; and using chart, determine volume of coolant to drain from cooling system. Replace drained volume with coolant concentrate.

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USE REFRACTOMETER TO CHECK FREEZE PROTECTION

FREEZE POINT ADJUSTMENT CHART FOR OVERCONCENTRATED SYSTEMS

(Use this chart to adjust your freeze point up to -35°F)

OVER CONCENTRATED

FREEZE PROTECTION OF SAMPLE MIXED 50/50 WITH WATER(°F)	%AF IN COOLANT	TOTAL COOLANT SYSTEM VOLUME								
		7-GAL	8-GAL	9-GAL	10-GAL	11-GAL	12-GAL	13-GAL	14-GAL	15-GAL
		VOLUME TO DRAIN AND REPLACE WITH DEIONIZED WATER								
+10	50	0	0	0	0	0	0	0	0	0
+7	55	3/4	3/4	3/4	1	1	1-1/4	1-1/4	1-1/4	1-1/2
+5	60	1-1/4	1-1/4	1-1/2	1-3/4	1-3/4	2	2-1/4	2-1/4	2-1/2
0	65	1-3/4	1-3/4	2-1/4	2-1/4	2-1/2	2-3/4	3	3-1/4	3-1/2
-5	70	2	2-1/4	2-3/4	2-3/4	3-1/4	3-1/2	3-3/4	4	4-1/4
-6	75	2-1/4	2-3/4	3	3-1/4	3-3/4	4	4-1/4	4-3/4	5
-12	80	2-3/4	3	3-1/2	3-3/4	4-1/4	4-1/2	5	5-1/4	5-3/4
-18	85	3	3-1/4	3-3/4	4-1/4	4-1/2	5	5-1/2	5-3/4	6-1/4
-23	90	3	3-1/2	4	4-1/2	5	5-1/4	5-3/4	6-1/4	6-3/4
-29	95	3-1/4	3-3/4	4-3/4	4-3/4	5-1/4	5-3/4	6-1/4	6-3/4	7-1/4
-35	100	3-1/2	4	4-1/2	5	5-1/2	6	6-1/2	7	7-3/4

If refractometer reading is off scale or shows a freeze point for the sample lower than -62°F, use the chart above to adjust the freeze point to -35°F. To do this, take the coolant sample and dilute it 50/50 with water. Take a new refractometer reading, and match this value to the reading under the "Freeze protection of sample mixed 50/50 with water" column. Determine your cooling system volume, and based on the chart above, drain the recommended amount of coolant and replace that volume with water. Recheck freeze point.

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USE REFRACTOMETER TO CHECK FREEZE PROTECTION