COOLANT MANAGEMENT: ACCURATE MIXING

Many coolant problems result from improper mixing ratios of water or coolant due to:

- Not accurately measuring volume of the mixing container
- Judging the mix ratio of coolant to water by “color” or how “slippery the mixture feels”
- Measuring by “GLUBS” (the sound made when coolant is poured directly from its container into the water)

TO ALEVIATE PROBLEMS AND REDUCE COOLANT COST:

✓ Accurately measure mixing container volume and the amount of coolant
✓ Accurately measure amount of coolant
✓ Begin using manufacturer’s recommended ratio & with the next batch, adjust as needed*
✓ Change more often

CALCULATING COOLANT AMOUNT REQUIRED FOR DESIRED RATIO

1. Decide the ratio that you want to use, i.e. 20:1, 25:1
2. Apply Formula:

\[
\text{Desired Ratio} = \frac{128 \text{ Ounces (} = 1 \text{ Gal)} }{\text{Container Volume (Gals)}} \times \text{Coolant Amount}
\]

Example: for 30 gallon Rectangular Tank w/ mixture ratio of 20:1, Requires 6 quarts of Coolant

\[
\frac{20}{30 \text{ Gallon Container}} = \frac{128 \text{ Ounces}}{X} \Rightarrow 20X = 3840 \text{ Ounces} \Rightarrow X = 192 \text{ Ounces or } 6 \text{ Quarts}
\]

CALCULATING CONTAINER VOLUME: When measuring container height, allow room in the container for coolant to be added

Rectangular Tank
- Inside Dimensions L x W x H = Volume cubic inches
- Volume in cubic inches x .0043290 = Volume gallons

Example:
L x W x H
38 ½” x 15” x 12” = 6930 cubic inches
6930 x .0043290 = 30 gallons

Cylinder Tank
- Opening inside diameter ÷ 2 = Radius = R
- Cylinder inside height = E
- Volume of cylinder = \( \pi \times R^2 \times E \), \( \pi = 3.142 \)

Example:
Inside diameter = 10” ÷ 2 = 5”
Inside height = 14 ¾”
Cylinder Volume = 3.142 × 5² × 14 ¾
V = 3.142 × 25 × 14 ¾
V = 1158.6125 cubic inches
1158.625 x .0043290 = 5 gallons

*Example: Manufacturer recommends 20:1. For second batch, try a 25:1 mix. Continue procedure until performance is reduced. Then return to last ratio that met desired specifications.