

# 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 ALLEVIATE 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:

$$\frac{\text{Desired Ratio}}{\text{Container Volume (Gals)}} = \frac{128 \text{ Ounces (= 1 Gal)}}{X \text{ (Coolant Amount)}}$$

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

$$\frac{20}{30 \text{ Gallon Container}} = \frac{128 \text{ Ounces}}{X}$$
$$20X = 3840 \text{ Ounces} \quad X = 192 \text{ Ounces or 6 Quarts}$$

**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**

$$38 \frac{1}{2}'' \times 15'' \times 12'' = 6930 \text{ cubic inches}$$

$$6930 \times .0043290 = 30 \text{ gallons}$$

### Cylinder Tank

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

#### Example:

$$\text{Inside diameter} = 10'' \div 2 = 5''$$

$$\text{Inside height} = 14 \frac{3}{4}''$$

$$\text{Cylinder Volume} = 3.142 \times 5^2 \times 14 \frac{3}{4}$$

$$V = 3.142 \times 25 \times 14 \frac{3}{4}$$

$$V = 1158.6125 \text{ cubic inches}$$

$$1158.625 \times .0043290 = 5 \text{ gallons}$$

\*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.