

## Digital Engine dynamometer "MAPPING"

Develop procedure for obtaining optimum specific fuel consumption & engine out exhaust emissions - present "horsepower" and "torque" curves explain engine power conditions - now optimum fuel economy/emission values should be "mapped".

Example shown, dynamometer engine set to run @ (4) ambient conditions and @ (5) engine speeds [normal load]. Regulate "top hose" between 80°C & 140°C to obtain optimum fuel economy/emission values (via sampling) at all points, and record as illustrated.

Record engine oil temperatures at all points. Note: Recommend oil pan temperature when volume < 4 Liters or a lower block oil gallery temperature if volume > 5 Liters. Once this mapping is complete - the by- pass water temperature will "vary" to maintain the "constant" oil temperature (see function graph).

Naturally, actual vehicle empirical development testing will modify the initial dynamometer values. Future effective digital engine thermal management systems will always be "selectively trending" toward providing the optimum engine functional temperature conditions.

