CRITERIA FOR SELECTING THE NUMBER OF "CO" DETECTION POINTS & THEIR LOCATIONS IN A GARAGE OR SIMILAR AREA

One of the most common questions is how many square feet can be covered with one detector. There is no straight-forward answer to this question. The area covered by one detector can vary between 2,000 and 7,500 sq. ft. depending on the way the garage is ventilated and the location of the sensors. It is the way the garage is swept and the time involved for the air to travel from the supply to the exhaust points which determines the number of CO detection points used. In addition, the physical layout of the garage dictates whether there are many dead zones where CO detectors should be located.

Below are a few sketches of common shapes of underground garages with suggested locations of CO points for these garages.

Figure 1 is typical for a usual rectangular or square floor with air flowing evenly across the garage from the supply side to the exhaust side. The number of CO detectors spaced evenly across the garage is in line with the maximum area which can be covered by each detector.

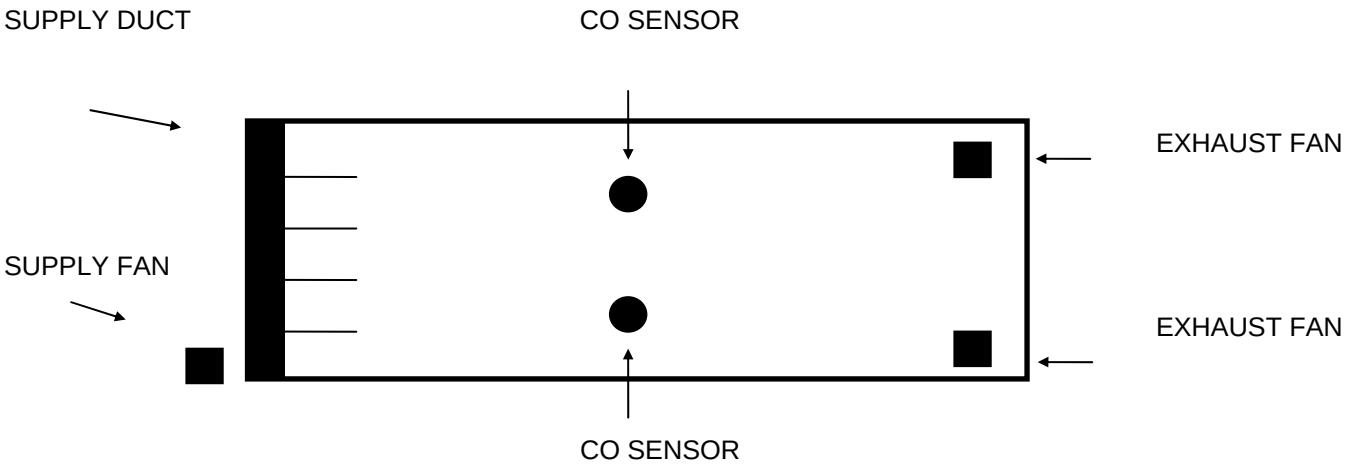

FIGURE 1

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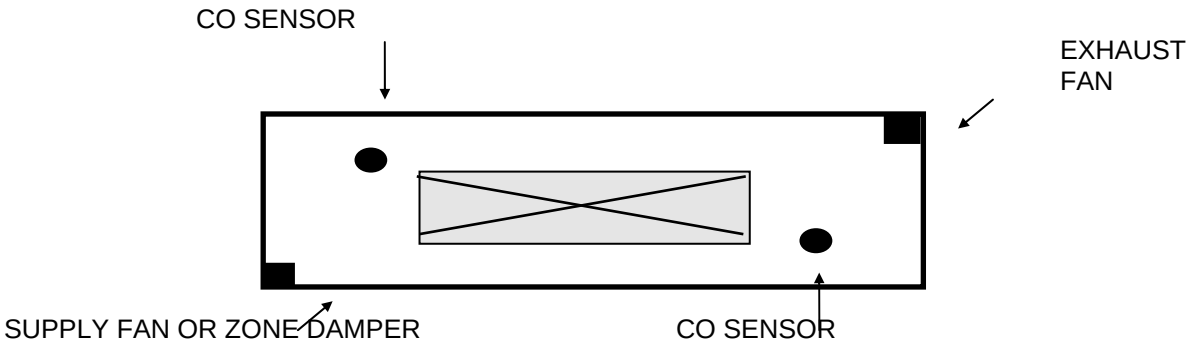

FIGURE 2

Figure 2 shows a similar square or rectangular garage with a core in the center as usually encountered in apartment buildings. Please notice that there are two distinctive paths for the ventilating air and the number of CO detectors is now a minimum of two and possibly more depending on the total area of the garage.

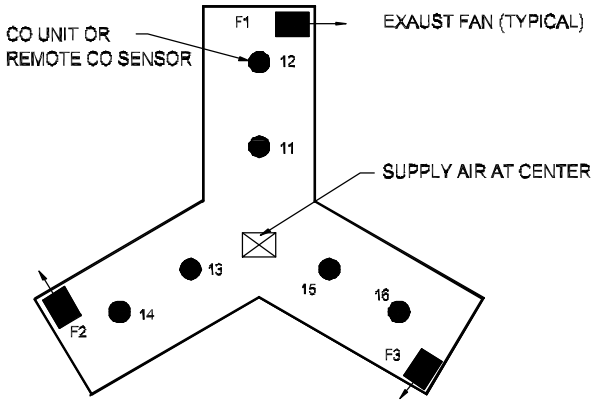

FIGURE 3

Figure 3 shows a typical apartment or office tower garage level; each leg of the "Y" has its own exhaust fan with air supplied at the center. Volume of supply air can be matched to volume exhausted at any particular time. The number of CO detection points per leg depends on the area of the garage and also whether there are any dividing walls which break up the open space in each leg. A reasoning similar to the above applies when garages are "L" shaped with air supplies at the corner of the "L".

Special attention must be given to ramps where there is danger of traffic jams or delays at exits when car motors are running. In many applications, ramp CO detectors must be provided in addition to the CO detectors distributed across the area. There should always be a CO detector located near the Pay Booth (where applicable).

The specific gravity of carbon monoxide is practically the same as the specific gravity of air. The height above the floor for locating the detector is therefore not a critical consideration. Heights between 4 ft. and 6 ft. are usual.

Locations where a parked car may exhaust directly into the sensor should be avoided.