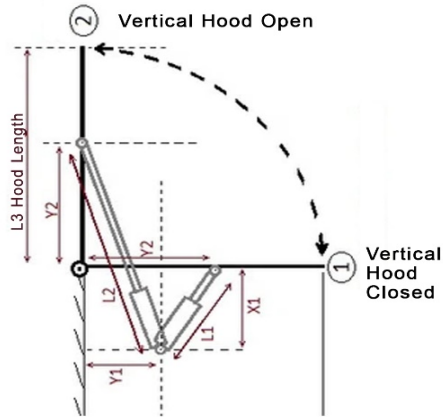


Hood Actuator Calculations

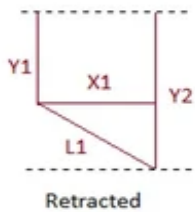
Calculate Force

Load = 55 # - Weight of Hood
 Sin 45 = 0.707
 Cos 60 = 0.500
 Angle = 60 Angle of the actuator - from horizontal
 F >= 110 # of Force

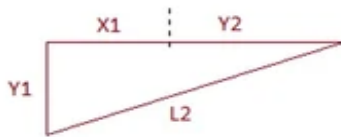
Calculate Stroke Length - ROTARY MOTION



L1 = 8.5 Length of the actuator when fully retracted
 L2 = 15 Length of the actuator when fully extended
 Y1 = 6 Y-axis distance between the rear-end mount of the actuator and axis of rotation for the hood (hood hinge).
 X1 = 14 X-axis distance between the rear-end mount of the actuator and axis of rotation for the door (door hinge) the actuator and the rear-end m
 Y2 = 6 Distance between the door axis of rotation (hood hinge) and the front-end mount of the actuator.
 S = 6.5 The **Actuator Stroke** - a distance that an actuator extends L2-L1
 L3 = 48 Distance from Hood hinge to Actuator Mount



Retracted



Extended

$$L1 = \sqrt{(Y2 - Y1)^2 + X1^2}$$

$$L2 = \sqrt{(X1 + Y2)^2 + Y1^2}$$

F Retracted = 14.00

F Extended = 10.00

Hood Actuator Calculations

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