

SOLIDWORKS > mass ? X

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Basic Assembly Tools Assembly Sketch Evaluate SOLIDWORKS Add-Ins

Trombone

Design Library

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Trombone Sensors Equations Front Plane Top Plane Right Plane Origin (-) Mouth Piece <1> (-) Slide <1> (f) Trombone Body Mates

Diameter: 0.83in Center: 0in,18in,-12in Under Defined Editing Assembly Simplified Interface IPS

SOLIDWORKS > mass

Trombone

Basic Assembly Tools Assembly Sketch Evaluate SOLIDWORKS Add-Ins

Configurations

- Trombone Configuration
  - Default [Trombone]
    - Exploded View1
    - 3DExplode1
    - Chain1
    - Chain2

Mass Properties

Trombone

Override Mass Properties... Recalculate Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of Trombone  
Configuration: Default  
Coordinate system: -- default --

Mass = 1.34 pounds

Volume = 37.15 cubic inches

Surface area = 1233.94 square inches

Center of mass: (inches)  
X = 51.77  
Y = 21.44  
Z = 41.03

Principal axes of inertia and principal moments of inertia: ( pounds \* square inches )  
Taken at the center of mass.  
Ix = (0.00, 0.99, -0.11) Px = 21.43  
Iy = (0.00, 0.11, 0.99) Py = 505.18  
Iz = (1.00, 0.00, 0.00) Pz = 525.74

Moments of inertia: ( pounds \* square inches )  
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)  
Lxx = 525.74 Lxy = 0.00 Lxz = 0.00  
Lyx = 0.00 Lyy = 26.86 Lyz = -50.94  
Lzx = 0.00 Lzy = -50.94 Lzz = 499.75

Moments of inertia: ( pounds \* square inches )  
Taken at the output coordinate system. (Using positive tensor notation.)  
Ix = 3402.71 Ixy = 1489.89 Ixz = 2850.97  
Iyx = 1489.89 Iyy = 5883.43 Iyz = 1130.02  
Izx = 2850.97 Izx = 1130.02 Izz = 4713.66

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Display States

Display State-1

Model Motion Study 1

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SOLIDWORKS > Home > Sketch > Surfaces > Basic Modeling Tools > Mass Properties

**Trombone Body**

Search: mass

Design Library

Mass Properties

Trombone Body

Override Mass Properties... Recalculate Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of Trombone Body  
Configuration: Default  
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.77 pounds

Volume = 21.30 cubic inches

Surface area = 711.58 square inches

Center of mass: ( inches )  
X = 0.00  
Y = -2.81  
Z = -4.87

Principal axes of inertia and principal moments of inertia: ( pounds \* square inches )  
Taken at the center of mass.

$I_x = (0.00, 0.99, -0.15)$	$P_x = 13.79$
$I_y = (0.00, 0.15, 0.99)$	$P_y = 102.10$
$I_z = (1.00, 0.00, 0.00)$	$P_z = 115.16$

Moments of inertia: ( pounds \* square inches )  
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)

$I_{xx} = 115.16$	$I_{xy} = 0.00$	$I_{xz} = 0.00$
$I_{yx} = 0.00$	$I_{yy} = 15.78$	$I_{yz} = -13.12$
$I_{zx} = 0.00$	$I_{zy} = -13.12$	$I_{zz} = 100.11$

Moments of inertia: ( pounds \* square inches )  
Taken at the output coordinate system. (Using positive tensor notation.)

$I_{xx} = 139.45$	$I_{xy} = 0.00$	$I_{xz} = 0.00$
$I_{yx} = 0.00$	$I_{yy} = 34.01$	$I_{yz} = -2.61$
$I_{zx} = 0.00$	$I_{zy} = -2.61$	$I_{zz} = 106.16$

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SOLIDWORKS > Home > Sketch > Surfaces > Basic Modeling Tools

Mass Properties

Slide

Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of Slide

Configuration: Default  
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.53 pounds

Volume = 14.75 cubic inches

Surface area = 492.31 square inches

Center of mass: ( inches )  
X = 0.00  
Y = -14.54  
Z = 0.00

Principal axes of inertia and principal moments of inertia: ( pounds \* square inches )  
Taken at the center of mass.

I<sub>x</sub> = ( 0.00, 1.00, 0.00 ) P<sub>x</sub> = 4.54  
I<sub>y</sub> = ( 0.00, 0.00, 1.00 ) P<sub>y</sub> = 62.90  
I<sub>z</sub> = ( 1.00, 0.00, 0.00 ) P<sub>z</sub> = 67.31

Moments of inertia: ( pounds \* square inches )  
Taken at the center of mass and aligned with the output coordinate system. (Using posit)

L<sub>xx</sub> = 67.31 L<sub>xy</sub> = 0.00 L<sub>xz</sub> = 0.00  
L<sub>yx</sub> = 0.00 L<sub>yy</sub> = 4.54 L<sub>yz</sub> = 0.00  
L<sub>zx</sub> = 0.00 L<sub>zy</sub> = 0.00 L<sub>zz</sub> = 62.90

Moments of inertia: ( pounds \* square inches )  
Taken at the output coordinate system. (Using positive tensor notation.)

I<sub>xx</sub> = 180.03 I<sub>xy</sub> = 0.00 I<sub>xz</sub> = 0.00  
I<sub>yx</sub> = 0.00 I<sub>yy</sub> = 4.54 I<sub>yz</sub> = 0.00  
I<sub>zx</sub> = 0.00 I<sub>zy</sub> = 0.00 I<sub>zz</sub> = 175.63

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Basic Modeling Tools Sketch Surfaces

Mouth Piece

Mass

Design Library

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SOLIDWORKS Content

3D Components - Part

**Mouth Piece**

Override Mass Properties... Recalculate Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of Mouth Piece  
Configuration: Default  
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.04 pounds

Volume = 1.10 cubic inches

Surface area = 30.05 square inches

Center of mass: ( inches )  
X = 0.00  
Y = -3.26  
Z = 0.00

Principal axes of inertia and principal moments of inertia: ( pounds \* square inches )  
Taken at the center of mass.  
Ix = ( 0.00, 1.00, 0.00 ) Px = 0.01  
Iy = ( 0.00, 0.00, 1.00 ) Py = 0.11  
Iz = ( 1.00, 0.00, 0.00 ) Pz = 0.11

Moments of inertia: ( pounds \* square inches )  
Taken at the center of mass and aligned with the output coordinate system. (Using posit)  
Lxx = 0.11 Lxy = 0.00 Lxz = 0.00  
Lyx = 0.00 Lyy = 0.01 Lyz = 0.00  
Lzx = 0.00 Lzy = 0.00 Lzz = 0.11

Moments of inertia: ( pounds \* square inches )  
Taken at the output coordinate system. (Using positive tensor notation.)  
lxx = 0.53 lyx = 0.00 lzx = 0.00  
lyx = 0.00 lyy = 0.01 lyz = 0.00  
lzx = 0.00 lzy = 0.00 lzz = 0.53

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