

SOLIDWORKS > Search Commands > ? > X

Sketch Line Corner Circle Polygon 3 Point Spline Smart Dimension Relation Sketch Trim Linear Sketch Offset Convert Mirror Extruded Boss/Base Extruded Cut Fillet Linear Pattern Mirror Draft Shell Reference Geometry Measure Mass Properties

Mass Properties back plate

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back plate

Options... Override Mass Properties... Recalculate

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of back plate
Configuration: Default
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 8.35 pounds

Volume = 231.16 cubic inches

Surface area = 674.26 square inches

Center of mass: (inches)
X = 0.00
Y = 0.00
Z = 0.58

Principal axes of inertia and principal moments of inertia: (pounds * square inches)
Taken at the center of mass.
Ix = (1.00, 0.00, 0.00) Px = 65.33
Iy = (0.00, 1.00, 0.00) Py = 624.08
Iz = (0.00, 0.00, 1.00) Pz = 681.98

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)
Lxx = 65.33 Lxy = 0.00 Lxz = 0.00
Lyx = 0.00 Lyy = 624.08 Lyz = 0.00
Lzx = 0.00 Lzy = 0.00 Lzz = 681.98

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)
Ix = 68.16 Iy = 0.00 Iz = 0.00
Iy = 0.00 Iy = 626.90 Iz = 0.00
Izx = 0.00 Iz = 0.00 Izz = 681.98

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10:35:57 AM 10/11/2025

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center axle

Search Commands

Mass Properties

center axle

Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of center axle
Configuration: Default
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 2.22 pounds

Volume = 61.58 cubic inches

Surface area = 185.00 square inches

Center of mass: (inches)
X = 0.66
Y = 0.00
Z = 0.00

Principal axes of inertia and principal moments of inertia: (pounds * square inches)
Taken at the center of mass.
Ix = (1.00, 0.00, 0.00) Px = 11.85
Iy = (0.00, 0.00, -1.00) Py = 12.75
Iz = (0.00, 1.00, 0.00) Pz = 13.38

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)
Lxx = 11.85 Lxy = 0.00 Lzx = 0.00
Lyx = 0.00 Lyy = 13.38 Lyz = 0.00
Lzx = 0.00 Lzy = 0.00 Lzz = 12.75

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)
Ix = 11.85 Iy = 0.00 Iz = 0.00
Iy = 0.00 Iy = 14.36 Iz = 0.00
Izx = 0.00 Iz = 0.00 Izz = 13.73

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SOLIDWORKS > Home Sketch Trim Entities Convert Mirror Reference Geometry Measure Mass Properties

Mass Properties lever Options... Override Mass Properties... Recalculate

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

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

Density = 0.04 pounds per cubic inch

Mass = 0.37 pounds

Volume = 10.20 cubic inches

Surface area = 47.00 square inches

Center of mass: (inches)
X = 0.38
Y = 0.00
Z = -4.35

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 = 0.22
Iy = (0.00, 0.00, 1.00) Py = 2.26
Iz = (1.00, 0.00, 0.00) Pz = 2.45

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)
Lxx = 2.45 Lxy = 0.00 Lxz = 0.00
Lyx = 0.00 Lyy = 0.22 Lyz = 0.00
Lzx = 0.00 Lzy = 0.00 Lzz = 2.26

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)
Ixx = 9.42 Iyy = 0.00 Iz = -0.60
Iyx = 0.00 Iyy = 7.24 Iz = 0.00
Izx = -0.60 Izy = 0.00 Iz = 2.32

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10:35:15 AM 10/11/2025

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Mass Properties

throw bolt

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SOLIDWORKS Content

3D Components - Part

Mass Properties

throw bolt

Options...

Override Mass Properties... Recalculate

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of throw bolt
Configuration: Default
Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.45 pounds

Volume = 12.45 cubic inches

Surface area = 39.43 square inches

Center of mass: (inches)
X = -0.02
Y = 0.00
Z = 3.56

Principal axes of inertia and principal moments of inertia: (pounds * square inches)
Taken at the center of mass.
Ix = (-0.01, 0.00, 1.00) Px = 0.12
Iy = (1.00, 0.00, 0.01) Py = 2.02
Iz = (0.00, 1.00, 0.00) Pz = 2.02

Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate system. (Using positive tensor notation.)
Lxx = 2.02 Lxy = 0.00 Lxz = -0.02
Lyx = 0.00 Lyy = 2.02 Lyz = 0.00
Lzx = -0.02 Lzy = 0.00 Lzz = 0.13

Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation.)
Ix = 7.70 Iy = 0.00 Iz = -0.05
Iy = 0.00 Iy = 7.71 Iz = 0.00
Izx = -0.05 Izy = 0.00 Izz = 0.13

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Sketch Line Corner Circle Polygon 3 Point Spline Smart Dimension Relation Extruded Boss/Base Extruded Cut Fillet Linear Pattern Reference Geometry Measure Mass Properties

Mass Properties

handle

Search Commands

Design Library

Mass Properties

handle

Options...

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of handle

Configuration: Default

Coordinate system: -- default --

Density = 0.04 pounds per cubic inch

Mass = 0.11 pounds

Volume = 3.00 cubic inches

Surface area = 16.95 square inches

Center of mass: (inches)

X = 0.00
Y = 0.84
Z = 0.00

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

I_x = (0.00, 1.00, 0.00) I_y = (0.00, 0.00, 1.00) I_z = (1.00, 0.00, 0.00) P_x = 0.02
P_y = 0.55
P_z = 0.55

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} = 0.55 L_{xy} = 0.00 L_{xz} = 0.00
L_{yx} = 0.00 L_{yy} = 0.02 L_{yz} = 0.00
L_{zx} = 0.00 L_{zy} = 0.00 L_{zz} = 0.55

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

I_{xx} = 0.63 b_y = 0.00 I_{zz} = 0.00
l_{yx} = 0.00 l_{yy} = 0.02 l_{yz} = 0.00
l_{zx} = 0.00 l_{zy} = 0.00 l_{zz} = 0.63

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10:34:37 AM 10/11/2025

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Basic Assembly Tools Assembly Sketch Evaluate Simulation

Sensors Equations Front Plane Top Plane Right Plane Origin back plate<1> center axle<1> handle<1> lever<1> lever<2> handle<2> handle<3> handle<4> throw bolt<1> throw bolt<2> Mates

Mass Properties

asm

Override Mass Properties... Recalculate

Include hidden bodies/components

Create Center of Mass feature

Show weld bead mass

Report coordinate values relative to: -- default --

Mass properties of asm
Configuration: Default
Coordinate system: -- default --
Mass = 12.65 pounds
Volume = 350.03 cubic inches
Surface area = 1099.91 square inches
Center of mass: (inches)
X = 63.48
Y = 18.28
Z = 45.79
Principal axes of inertia and principal moments of inertia: (pounds)
Taken at the center of mass.
Ix = (1.00, 0.01, 0.00) Px = 112.39
ly = (-0.01, 1.00, 0.00) Py = 878.53
lz = (0.00, 0.00, 1.00) Pz = 927.58
Moments of inertia: (pounds * square inches)
Taken at the center of mass and aligned with the output coordinate
Lxx = 112.46 Lyx = 7.32 Lzx =
Lyx = 7.32 Lyy = 878.46 Lyz =
Lzx = 0.00 Lzy = 0.00 Lzz =
Moments of inertia: (pounds * square inches)
Taken at the output coordinate system. (Using positive tensor notation)
lx = 30854.83 ly = 14680.42 lz =
ly = 14680.42 ly = 78354.33 lz =
lz = 36759.84 ly = 10584.71 lz =

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Under Defined Editing Assembly Simplified Interface IPS

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New Study Apply Fixtures External Loads Connections Shell Diagnostic Run This Study Results Deformed Compare Plot Tools Report Include Image for Report

Basic Assembly Tools Assembly Sketch Evaluate Simulation

Configurations

asm Configuration(s)

- Default [asm]
- Exploded View1
 - 3DExplode1
 - Explode Step1
 - Explode Step2
 - Explode Step3
 - Explode Step4
 - Explode Step5
 - Explode Step6
 - Explode Step7
 - Explode Step8

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Display States

Display State-1

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