

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

Design Library

Search in Toolbox

Design Library Analysis Library Toolbox SOLIDWORKS Content 3D Components - Part

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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Model Motion Study 1

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SOLIDWORKS > Home Sketch Trim Entities Convert Mirror Entities Extruded Boss/Base Extruded Cut Fillet Linear Pattern Reference Geometry Measure Mass Properties

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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Editing Part Simplified Interface IPS

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SOLIDWORKS

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<sub>x</sub> = ( 0.00, 1.00, 0.00 ) I<sub>y</sub> = ( 0.00, 0.00, 1.00 ) I<sub>z</sub> = ( 1.00, 0.00, 0.00 ) P<sub>x</sub> = 0.02  
P<sub>y</sub> = 0.55  
P<sub>z</sub> = 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<sub>xx</sub> = 0.55 L<sub>xy</sub> = 0.00 L<sub>xz</sub> = 0.00  
L<sub>yx</sub> = 0.00 L<sub>yy</sub> = 0.02 L<sub>yz</sub> = 0.00  
L<sub>zx</sub> = 0.00 L<sub>zy</sub> = 0.00 L<sub>zz</sub> = 0.55

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

I<sub>xx</sub> = 0.63 I<sub>yy</sub> = 0.00 I<sub>zz</sub> = 0.00  
I<sub>yx</sub> = 0.00 I<sub>yy</sub> = 0.02 I<sub>yz</sub> = 0.00  
I<sub>zx</sub> = 0.00 I<sub>zy</sub> = 0.00 I<sub>zz</sub> = 0.63

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The image shows a 3D model of a handle in SOLIDWORKS. The handle has a spherical head and a cylindrical neck. A coordinate system is centered at the neck. The SOLIDWORKS interface is visible, including the ribbon menu, toolbars, and various windows. The 'Mass Properties' window is open, showing detailed calculations for the handle's mass, volume, surface area, and moments of inertia. The 'Design Library' window is also visible on the right side of the interface.

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

Search Commands

Mass Properties

lever

Options...

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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Design Library

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Design Library

Analysis Library

Toolbox

SOLIDWORKS Content

3D Components - Part

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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

throw bolt

Design Library

Search in Toolbox

Design Library

Analysis Library

Toolbox

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

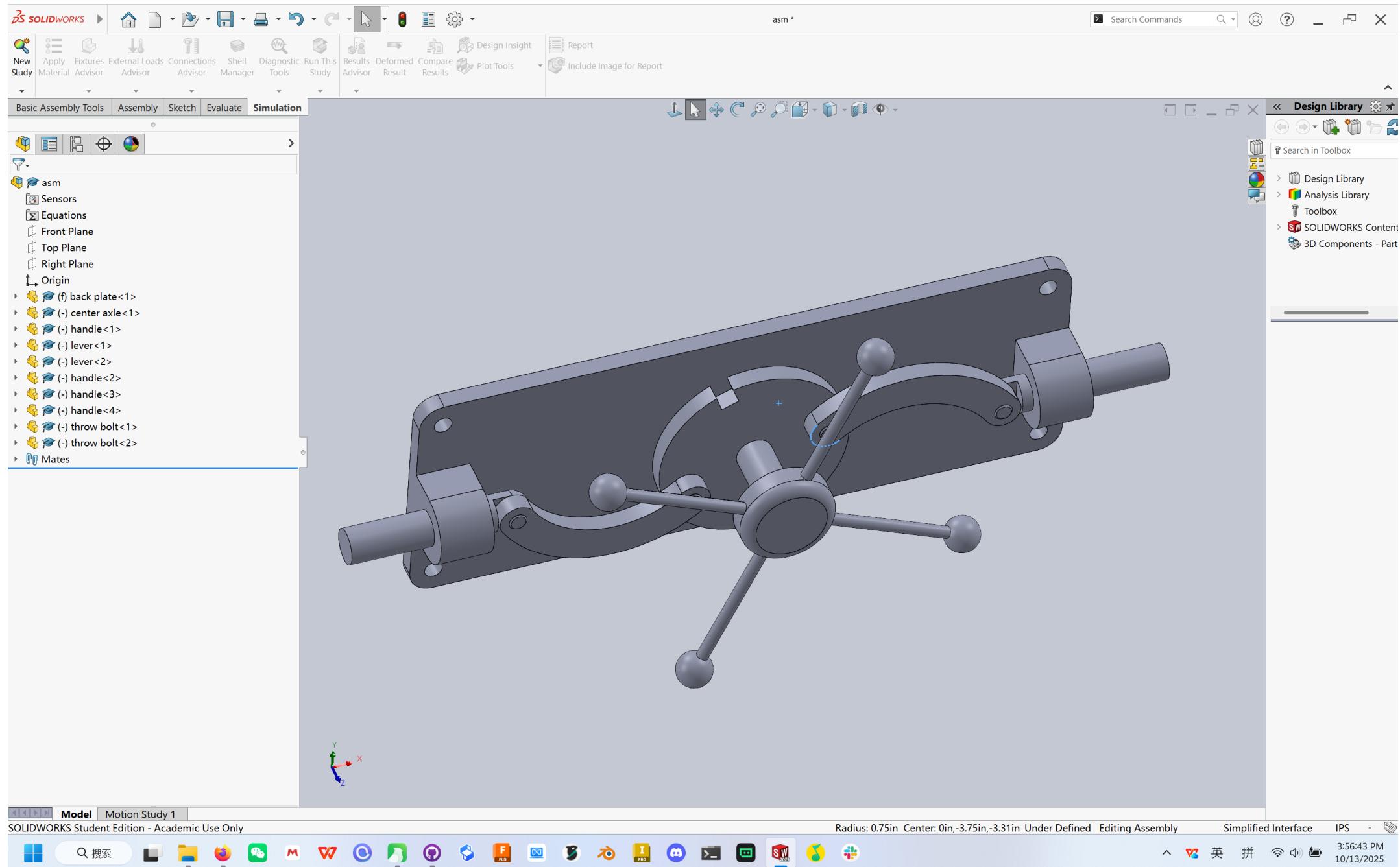
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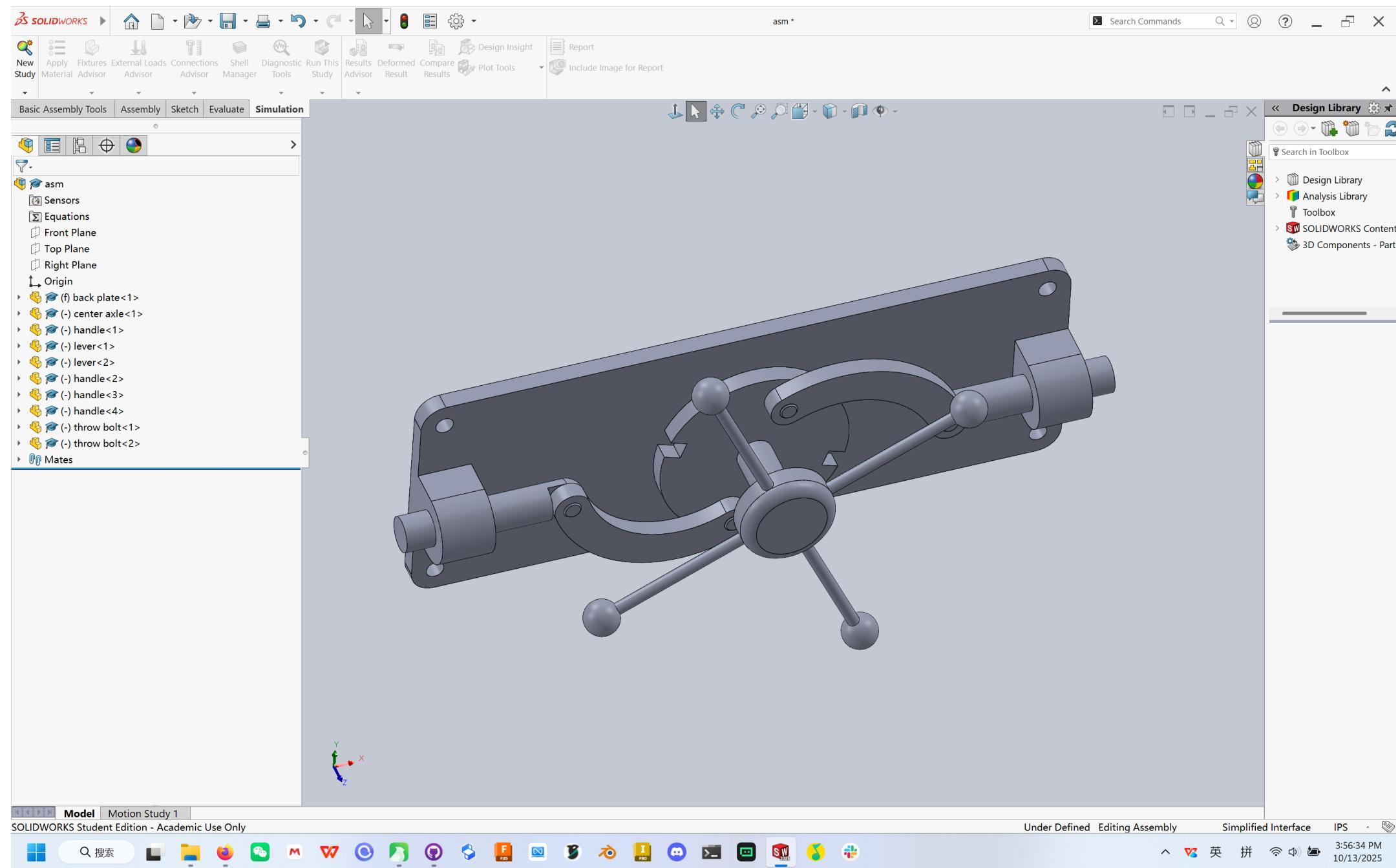
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SOLIDWORKS

File Home Insert Tools View Window Help

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

Design Library

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Display States

Display State-1

Model Motion Study 1

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Under Defined Editing Assembly Simplified Interface IPS

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