**BRUCE V1.4**

**05/07/2023**

**X. Zhang**

BODY:

Mass = 1.31688922 kilograms

Center of mass: ( meters )

X = 0.02259605

Y = -0.00011305

Z = 0.06140054

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.01335430 Ixy = -0.00000336 Ixz = 0.00182725

Iyx = -0.00000336 Iyy = 0.01023631 Iyz = -0.00001163

Izx = 0.00182725 Izy = -0.00001163 Izz = 0.00547100

hip\_yaw\_r

Mass = 0.63756264 kilograms

Center of mass: ( meters )

X = 0.00000271

Y = -0.00024824

Z = 0.00522427

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00048541 Ixy = 0.00000112 Ixz = 0.00000174

Iyx = 0.00000112 Iyy = 0.00161689 Iyz = -0.00000702

Izx = 0.00000174 Izy = -0.00000702 Izz = 0.00152129

hip\_roll\_r

Mass = 0.72848988 kilograms

Center of mass: ( meters )

X = 0.00167429

Y = 0.14071429

Z = -0.00868170

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.01819732 Ixy = 0.00019343 Ixz = 0.00000168

Iyx = 0.00019343 Iyy = 0.00050614 Iyz = -0.00065644

Izx = 0.00000168 Izy = -0.00065644 Izz = 0.01792426

hip\_pitch\_r

Mass = 0.72848988 kilograms

Center of mass: ( meters )

X = 0.14071429

Y = -0.00868170

Z = 0.00167429

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00050614 Ixy = -0.00065644 Ixz = 0.00019343

Iyx = -0.00065644 Iyy = 0.01792426 Iyz = 0.00000168

Izx = 0.00019343 Izy = 0.00000168 Izz = 0.01819732

knee\_pitch\_r

Mass = 0.09566544 kilograms

Center of mass: ( meters )

X = 0.07293079

Y = 0.01746447

Z = 0.00216432

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00010962 Ixy = 0.00005276 Ixz = 0.00001568

Iyx = 0.00005276 Iyy = 0.00101941 Iyz = -0.00000668

Izx = 0.00001568 Izy = -0.00000668 Izz = 0.00108317

ankle\_pitch\_r

Mass = 0.02762647 kilograms

Center of mass: ( meters )

X = 0.01207750

Y = 0.00197460

Z = 0.00029511

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00002043 Ixy = 0.00000287 Ixz = -0.00000003

Iyx = 0.00000287 Iyy = 0.00000620 Iyz = -0.00000024

Izx = -0.00000003 Izy = -0.00000024 Izz = 0.00002588

hip\_yaw\_l

Mass = 0.63738621 kilograms

Center of mass: ( meters )

X = 0.00000000

Y = -0.00020849

Z = 0.00528032

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00048520 Ixy = 0.00000000 Ixz = -0.00000016

Iyx = 0.00000000 Iyy = 0.00161810 Iyz = -0.00000750

Izx = -0.00000016 Izy = -0.00000750 Izz = 0.00152105

hip\_roll\_l

Mass = 0.72062828 kilograms

Center of mass: ( meters )

X = -0.00174716

Y = 0.14244670

Z = -0.00832054

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.01819268 Ixy = -0.00019320 Ixz = 0.00000032

Iyx = -0.00019320 Iyy = 0.00048935 Iyz = -0.00066556

Izx = 0.00000032 Izy = -0.00066556 Izz = 0.01792901

hip\_pitch\_l

Mass = 0.72062828 kilograms

Center of mass: ( meters )

X = 0.14244670

Y = -0.00832054

Z = -0.00174716

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00048935 Ixy = -0.00066556 Ixz = -0.00019320

Iyx = -0.00066556 Iyy = 0.01792901 Iyz = 0.00000032

Izx = -0.00019320 Izy = 0.00000032 Izz = 0.01819268

knee\_pitch\_l

Mass = 0.09526543 kilograms

Center of mass: ( meters )

X = 0.07309957

Y = 0.01781024

Z = -0.00219767

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00010799 Ixy = 0.00005259 Ixz = -0.00001742

Iyx = 0.00005259 Iyy = 0.00101705 Iyz = 0.00000607

Izx = -0.00001742 Izy = 0.00000607 Izz = 0.00107920

ankle\_pitch\_l

Mass = 0.02748291 kilograms

Center of mass: ( meters )

X = 0.01233982

Y = 0.00253004

Z = -0.00030441

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00002042 Ixy = 0.00000291 Ixz = 0.00000003

Iyx = 0.00000291 Iyy = 0.00000627 Iyz = 0.00000024

Izx = 0.00000003 Izy = 0.00000024 Izz = 0.00002602

shoulder\_pitch\_r

Mass = 0.04931686 kilograms

Center of mass: ( meters )

X = 0.00000000

Y = -0.00038323

Z = -0.01413682

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00002507 Ixy = 0.00000000 Ixz = 0.00000000

Iyx = 0.00000000 Iyy = 0.00002403 Iyz = 0.00000018

Izx = 0.00000000 Izy = 0.00000018 Izz = 0.00000832

shoulder\_roll\_r

Mass (user-overridden) = 0.02400000 kilograms

Center of mass: ( meters )

X = 0.05709386

Y = -0.00419463

Z = 0.00093738

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00000775 Ixy = -0.00000690 Ixz = 0.00000262

Iyx = -0.00000690 Iyy = 0.00012556 Iyz = -0.00000011

Izx = 0.00000262 Izy = -0.00000011 Izz = 0.00012619

elbow\_pitch\_r

Mass = 0.05244037 kilograms

Center of mass: ( meters )

X = 0.02178843

Y = 0.00000000

Z = 0.00036040

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00000753 Ixy = 0.00000000 Ixz = 0.00000018

Iyx = 0.00000000 Iyy = 0.00007261 Iyz = 0.00000000

Izx = 0.00000018 Izy = 0.00000000 Izz = 0.00007103

shoulder\_pitch\_l

Mass = 0.04931686 kilograms

Center of mass: ( meters )

X = 0.00000000

Y = 0.00038323

Z = -0.01413682

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00002507 Ixy = 0.00000000 Ixz = 0.00000000

Iyx = 0.00000000 Iyy = 0.00002403 Iyz = -0.00000018

Izx = 0.00000000 Izy = -0.00000018 Izz = 0.00000832

shoulder\_roll\_l

Mass = 0.03136525 kilograms

Center of mass: ( meters )

X = 0.05709387

Y = 0.00419463

Z = 0.00094155

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00001013 Ixy = 0.00000902 Ixz = 0.00000342

Iyx = 0.00000902 Iyy = 0.00016409 Iyz = 0.00000015

Izx = 0.00000342 Izy = 0.00000015 Izz = 0.00016491

elbow\_pitch\_l

Mass = 0.05244037 kilograms

Center of mass: ( meters )

X = 0.02178843

Y = 0.00000000

Z = 0.00036040

Moments of inertia: ( kilograms \* square meters )

Taken at the output coordinate system.

Ixx = 0.00000753 Ixy = 0.00000000 Ixz = 0.00000018

Iyx = 0.00000000 Iyy = 0.00007261 Iyz = 0.00000000

Izx = 0.00000018 Izy = 0.00000000 Izz = 0.00007103