Motion Porter ver.1.0

<div align="right">Masa: http://masatoshisoh.sitemix.jp/ 2016/2/28</div>

Motion Porter are plug-ins that export the motion data of the joints to the file, and import from the exported filse to the scene.

Motion Porter are used the same purpose as the **Pose** Exporter/Importer and Save/Load in **Motion window** of **Shade**. However the file   of **Motion Porter** is simple text file, and have no structured, so those are able to use to little modified scene.below are the list fo its features.

- You can save the both of **Motion** for animation, and **Pose** of current time.
- It export joints by it's name, and add order number to duplicate names.
- Rotation/Offset of the bone/ball joints can also be stored in the values in terms of the world coordinate system in addition to actual Rotation/Offset values of **Shade**. Therefore, you can modify the transformation matrix(such as changing the axis of the bone joints) after export Motion/Pose, and can set the same Motion/Pose to the scene by imported the file.
- When export, you can clear a minute rotation and offset before export.
- You can export without no Rotation and no Offset joints when **Pose** export.

1. How to install

When Windows environment you launch the Shade 3D, after copying motion_porter.dll(motion_porter64.dll for 64bit version) to **My Documents\Shade name**\pluings folder.

My Documents: the folder of the user's My Documents.

When the Mac environment, you launch the Shade 3D, after coping the motion_porter.shdplugin to **Documents**/**Shade name**/pluings folder.

Documents: a folder of name of Documents in the user of the Finder.

Shade name: a folder name, including up to Shade of the version, it will be created automatically at start up of Shade 3D.

If you find a menu of **Motion Save** and **Motion Load** in the Tools menu->Plugins the installation is successful.
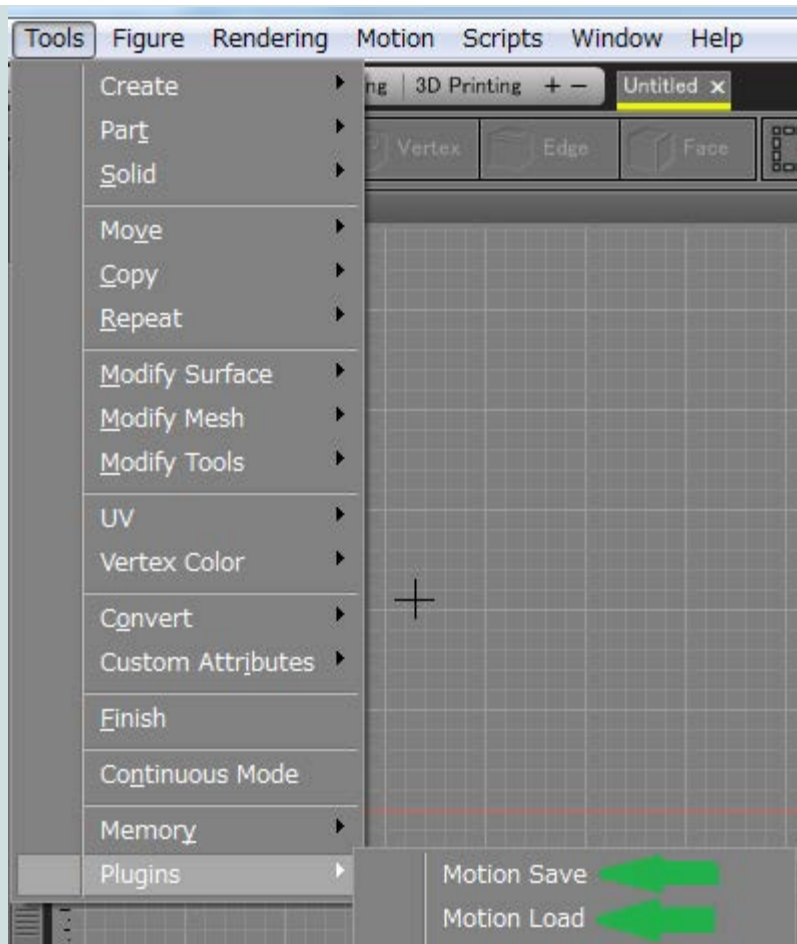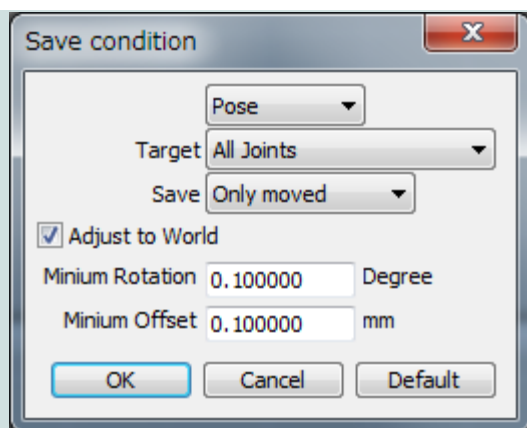
2. Operating environment

-
    Windows: 7/8/8.1
    Mac: OSX 10.8/10.9/10.10
- **Shade**
  after
    Shade 3D Standard/Professional ver.13
    ※ Can not use in Shade 3D Basic.

3. How to use

3.1. Export Motion file

Click Tools menu ->Plugins->**Motion Save**, then the following dialog will appeared.

The meaning of each items are described below.

- **Pose/Motion**
  Pose: Exports the current settings of joints in the scene.
  Motion: Exports the all motion settings of joints in the scene.
- Target **All Joints/Only selected Joints**
  All Joints: Exports All joints setting.
  Only selected Joints: Exports only selected joints.
- Save **Only moved/All**(This setting is valid only Pose choosed.)
  Only moved: Exports only moved joints.
  All: Exports without check moved joints.
- **Adjust to World**
  When checked, Export Rotation/Offset values(of the Ball/Bone Joints) that converted on the world coordinate system. If you export with this setting, you can get same posing to after modified scene by Import of this file.
- **Minium Rotation**(This setting is valid only to the Ball/Bone Joints)
  Under Minium Rotation of joinsts are converted to 0, and export it. All so default rotation are converted.
- **Minium Offset**(This setting is valid only to the Ball/Bone Joints)
  Under Minium Offset of joinsts are converted to 0, and export it. All so default Offset are converted.

After you press **OK**, then file specification dialog will appear. You set the export file name and press **OK**, then Motion file will exported with file extension **smo**.

3.2. Import Motion file

Click Tools menu -> Plugins->**Motion Load** after select the load range of the scene, then set import file in the file specification dialog. Press **OK**, then start import. Decision of **Motion** or **Pose** files are automatically. When **Motion**, Replase motion of the joints from Motion file. Motion points are appended automatically. When **Pose**, case of **Still** mode, Pose data are setted to the joints directly, case of **Sequence** mode Pose data are setted to the selected motion points.

3.3. Structure of Motion files

A example of a **Motion file** is shown below.

```
# Shade motion file
# Ver.=1.0
# motion
# adjust
"Torso" 0 2 13 1
0 off 0 0 1 0 0 0 0 0 0
5 off 0 0 1 0 0 0 0 0 218.4
12 off 0 0 0.999879 0.00696489 -0.000372784 0.0139 -6.10352e-005 -124.8 608.4
```

```
17 off 0 0 1 0 0 0 0 0 -20.7999 1300
23 off 0 0 0.999879 -0.00696489 0.000372784 -0.0139 0 -93.6 1887.6
29 off 0 0 1 0 0 0 0 0 2301
35 off 0 0 0.999879 0.00696489 -0.000372784 0.0139 -6.10352e-005 -101.4 2683.2
41 off 0 0 1 0 0 0 0 0 3400.8
47 off 0 0 0.999879 -0.00696489 0.000372784 -0.0139 0 -85.7999 4017
52 off 0 0 1 0 0 0 0 0 4438.2
58 off 0 0 0.999879 0.00696489 -0.000372784 0.0139 0 -93.6 4836
64 off 0 0 1 0 0 0 0 0 5522.4
70 off 0 0 0.999879 -0.00696489 0.000372784 -0.0139 0 -93.5998 6130.8
"UpperTorso" 0 2 13 1
0 off 0 0 1 0 0 0 0 0
5 off 0 0 0.987835 -0.126375 0.0885716 -0.0191673 0 0 0
12 off 0 0 0.986761 -0.129068 0.0845985 -0.0498796 0 0 0
17 off 0 0 0.99227 -0.124099 2.01127e-008 7.89963e-009 0 0 0
23 off 0 0 0.99119 -0.123964 0.00578804 0.0462798 0 0 0
29 off 0 0 0.987835 -0.126375 0.0885716 -0.0191673 0 0 0
35 off 0 0 0.986761 -0.129068 0.0845985 -0.0498796 0 0 0
41 off 0 0 0.99227 -0.124099 2.01127e-008 7.89963e-009 0 0 0
47 off 0 0 0.99119 -0.123964 0.00578804 0.0462799 0 0 0
52 off 0 0 0.987835 -0.126375 0.0885716 -0.0191673 0 0 0
58 off 0 0 0.986761 -0.129068 0.0845985 -0.0498796 0 0 0
64 off 0 0 0.99227 -0.124099 2.01127e-008 7.89963e-009 0 0 0
70 off 0 0 0.99119 -0.123964 0.00578804 0.0462799 0 0 0
"Belly" 0 2 13 1
0 off 0 0 1 0 0 0 0 0
5 off 0 0 0.999879 0.0155475 -0.000220578 0.000294333 0 0 0
12 off 0 0 0.999879 0.0155475 -0.000220578 0.000294333 0 0 0
17 off 0 0 0.999879 -0.0155475 0.000220578 -0.000294333 0 0 0
.....
```

The 1st line is the header.

The 2nd line is the version information for future compatibility.

The 3rd line is the information of Motion(motion) or Pose(psoe).

The 4th line is the information of adjustment to the world coordinate system. adust means convert to world, then direct means real **Shade**'s value.

After that, the datas of the joints.

When Motion, there are joint name(which is enclosed in ""),order number(of the same name), **Joint Type**, number of motion points, last is the number of repetitions of motion, in the first line

Followed each line is the information of 1 motion point. There are the sequence value, corner flag, throw-in value, throw out value, and the amount of deformation of the joints.

In the case of bone joints and ball joints, number of values are 7.The first of four value are quoternion of the joint rotation, and next three value are Offset value.

In the case of other joints, number of values is 1.

A example of a **Pose file** is shown below.

```
# Shade motion file
# Ver.=1.0
# pose
# adjust
"Torso" 0 2 1 0 0 0 0 0 218.4
"UpperTorso" 0 2 0.987835 -0.126375 0.0885716 -0.0191673 0 0 0
"Belly" 0 2 0.999879 0.0155475 -0.000220578 0.000294333 0 0 0
"Breast" 0 2 0.995893 0.0774519 0.00166411 0.0468553 0 0 0
"RUpArm" 0 2 0.892855 -0.216669 0.390176 -0.0602256 0 0 0
"RLowArm" 0 2 0.62001 0.306583 -0.572681 -0.440036 0 0 0
"RHand" 0 2 0.979631 -0.0309121 -0.0308866 0.195995 0 0 0
"RFinger_0" 0 2 0.850594 0.308877 -0.216009 0.36664 0 0 0
"RFinger_1" 0 2 0.819139 0.148043 0.169192 0.5277 0 0 0
.....
```

In the case of **Pose file**, 1 line per 1 joint, Joint name, joint order number, **Joint type**, and the deformation of the joint directly.

Under are descriptions of the **Joint type**
    1:ball joint
    2:bone joint
    3:uniscale joint
    4:scacle joint

5:rotator joint
6:slider joint
7:custom joint
8:path joint
9:light joint
10:morph joint
11:switch joint

4. Revision history

- 2016/2/28 V1.0.0
  - New releases