RealToon

V 5.0.8

MJ
STUDIO WORKS

User Guide

(V14)

(RealToon Shader)

It's an AAA Anime - Toon Shader/Cel Shading Shader for Unity3D.
The goal/aim of this shader is to achieve real Anime/Toon look in RealTime 3D.

You can also achieve any style/stylized you want, more than Anime/Toon look.

All Real time lights can be use, from real time Directional Light, Spot, Point to real time Area Light.

It is possible to use RealToon in HDRP's DXR/Ray tracing mode.
Realistic + NPR/Non-Photorealistic are possible with the combination use of Unity's Shaders + RealToon Shaders.

You can use RealToon and other shaders, together.

Use RealToon Shader for games, animations/film, illustrations/art, VTuber, Virtual Chat Avatar Shader and any projects.

RealToon shader can also be use on projects made,
Mobile (Android/iOS) and Game Console (Xbox, PlayStation and Switch).

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[Table of Contents]

[Getting Started]

- Before you start, you'll need to unpack the shader package that corresponds to your project render pipeline, before that there are some things you need to know about Unity's Render Pipeline.
If you already know it, just skip to the **Unpacking the Shaders** section.

- Firstly there are 2 types of Unity Render Pipeline, **Unity Built-In/3D Render Pipeline** and **Unity SRP/Scriptable Render Pipeline (URP - HDRP)**.
Under **SRP** there are 2 Unity made SRP, **URP/Universal Render Pipeline** and **HDRP/High Definition Render Pipeline.**

Unity Built-In/3D Render Pipeline is the old unity render pipeline.

*Unity SRP/Scriptable Render Pipeline (URP - HDRP), is the new and modern render pipeline.
        *URP/Universal Render Pipeline – Formerly named **LWRP** and It is universal and focuses on low and high quality visuals that can be deploy to all devices.
        *HDRP/High Definition Render Pipeline – Focuses on advance high quality visuals and can be deploy to modern devices that supports compute and modern advance features and visuals.

- Now you know what those unity render pipelines are, so we can start unpacking the shader you need.
All the shader packages are in the folder **RealToon Shader Packages**.

[Unpacking the Shaders]

*Recommended Unity versions for Built-In RP/3D:
        From **Unity 5** to current latest unity version.

*Recommended Unity and SRP Versions:
        [RealToon LWRP] - **Unity 2018** and **LWRP V4.0.0** or latest version.
        [RealToon URP] - **Unity 2019.3.0** to newer versions and **URP V7.1.1** or latest version.
        [RealToon HDRP] - **Unity 2019** to newer versions and **HDRP V7.2.0** or latest version.

*If your project is 3D or Built-In RP:
        1. Go to folder **RealToon Shader Packages -> Built-In RP [3D].**
        2. Double click **RealToon Built-In RP [3D]** package to unpack.
        If you are using the latest unity version, double click - unpack the latest one with the 'Later' word on it.
        3. Click **Import**.

*If your project is Universal Render Pipeline or High Definition RP:
        1. Go to folder **RealToon Shader Packages -> SRP (LWRP - URP - HDRP)**.
        2. Open the folder that correspond to your project render pipeline.
        3. Double click - unpack the version you need or the latest one with the 'Later' word on it.
        4. Click **Import**.

[How to use]

A. How to use RealToon Shader:

a. Create a material by pressing mouse button **Right** on the **Project** window/panel.
b. Go to **Create -> Material**.
c. Name your material then press keyboard key **Enter**.
d. Click your created material.
e. Go to **Inspector** window/panel then change the **Shader** by left mouse button - click the drop down menu.

   * **For 3D/Built-In RP:** Go to **RealToon -> Default** and select **Default**.
   * **For Universal Render Pipeline:** Go to **Universal Render Pipeline -> Default** and select **Default**.
   * **For High Definition RP:** Go to **HDRP -> Default** and select **Default**.

f. Drag your created material to the object you want to apply.

B. How to use RealToon Effects (Built-In RP/3D):

a. Select a camera.
b. **Add component -> RealToon -> Effects**.
c. Select the effect/s you want to use.

C. How to use RealToon Tools:

a. Select an object or an empty game object
b. **Add component -> RealToon -> Tools**.
c. Select a tool you want to use.

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[RealToon Shaders]

(RealToon Shaders for Built-In RP/3D)	(RealToon Shaders for SRP)

A. Default
 	
   a. **Default**
      * The default RealToon shader.
 	
   b. **Fade Transparency**
      * A transparent shader.
      * It also has the functions and feature of the Default shader.
      * It can't receive shadow but can cast shadow.
 	
   c. **Refraction**
      * A Refraction shader.
      * It can't receive shadow and can cast shadow.
 	
B. Default - Tessellation
 	
   a. **Default**
      * The default RealToon shader.
      * With tessellation.
 	
   b. **Fade Transparency**
      * A transparent shader.
      * It also has the functions and feature of the Default shader.
      * It can't receive shadow but can cast shadow.
      * With tessellation.
 	
   c. **Refraction**
      * A Refraction shader.
      * It can't receive shadow and can cast shadow.
      * With tessellation.
 	
C. Lite
 	
   a. **Default**
      * Lite version of the Default shader.
 	
   b. **Fade Transparency**
      * Lite version of the Fade Transparency shader.
	A. LWRP
	
	   a. **Default**
	      * The default RealToon shader.
	
	   b. **Fade Transparency**
	      * A transparent shader.
	      * It also has the function and features of the Default Shader.
	      * It can't receive shadow but can cast shadow.
	
	B. URP
	
	   a. **Default**
	      * The default RealToon Shader.
	      * It has the transparent feature.
	      * The transparent feature can receive and cast shadow.
	      * With lightmap.
	      * With 2 available on shader outline to be use, Traditional Outline and Screen Space Outline.
	
	C. HDRP
	
	   a. **Default**
	      * The default RealToon Shader.
	      * It has the transparent feature.
	      * The transparent feature can receive and cast shadow.
	      * With DXR/Ray Tracing.
	      * With 2 available on shader outline to be use, Traditional Outline and Screen Space Outline.

[RealToon Tools]

*Custom Shadow Resolution Tool

- This tool is use for customizing the light source shadow resolution.
   Can only be use on **Built-In RP/3D**.

Settings
Value *(Default: 2048)*
- It's the resolution value of the shadow map
Final Resolution *(Default: No Default Value)*
- This is the shadow map final resolution.   This is basically x2 value of the value you entered.
Reset *(Default: Unchecked)*
- To reset he settings - value

*Frame By Frame Rendering Tool

- Frame by Frame Rendering is a simple tool to render each frame to PNG File.
   (Use For Animation & Illustration/Art)

- Two types of Frame By Frame Rendering Tool script:

    1. **Frame by Frame Rendering (Default) –** Auto Render when press play.
    2. **Frame By Frame Rendering (Manual) –** Manual Render, frame by frame.

Settings
Path Folder *(Default: Rendered Files)*
- A path/location to where to save the PNG Files. *[Note]* **If you put the name folder only, it will be created to your Unity3D root project folder.* **If you want to save the files to a different location/drive, include the drive letter, Example **C:\PNGFiles.*** **If this field is empty, it will create the folder **Rendered Files***.

PNG File Name *(Default: Frame)*

- The file name

[Note]
If this field is empty, it will name the file Frame.

Frame Rate *(Default: 24)*

- The frame rate of the frame by frame session.

Start Frame *(Default: 0)*

- The beginning of the frame.

End Frame *(Default: 0)*

- The end of the frame.

Single Frame Rendering Mode *(Default: Unchecked)*

- Render a single image only.

[Note]
This will ignore Frame Rate, Start Frame & End Frame.
It will only render Frame 1.
If Checked/Enabled file name will be named "YouFileName Hour_Min_Sec".
If Uncheck/Disable file name will be named "YouFileName FrameNumber".

Picture Mode *(Default: Unchecked)*

- Render a single image only.

[Note]
*This option is only available on the **Frame by Frame (Manual)** version.*
*This is similar to **Single Frame Rendering Mode**.*

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Information - This section will only display information about the rendering and operations.
Last Rendered Frame *(Default: No Default Value)*
- Display the last rendered fame.
Info *(Default: Empty)*
- This is the shadow map final resolution.

*Smooth Object Normal – Helper Script Tool

- A helper script for the RealToon Feature **Smooth Object Normal.**
- This script will help the **Smooth Object Normal** to follow the object's animation.

Settings
Material *(Default: Empty)*
- A material that uses **RealToon – Smooth Object Normal** feature.
Object Helper *(Default: Empty)*
- An object to help adjust the smoothed/ignored object normal.
The Object To Follow *(Default: Empty)*
- The object to follow by the **Object Helper**.
Offset *(Default: 10)*
- Adjust the overall offset of the **Smooth Object Normal** to follow the **Object Helper.**
Additional Position Adjustment *(Default: X:0 Y:0 Z:0)*
- Additional position adjustment **for Object Helper**.

[RealToon Tools Tips/Notes/How to Use]

(Frame By Frame Rendering)

For Frame By Frame Rendering Both (Default & Manual)

1. You can pause rendering by click pause button.

2. Stop render immediately by click play button again.

3. You cannot start render if the folder has files on it so you need to change the **Path Folder** to another location or folder. (Applies only to **Non Picture Mode** & **Single Frame Mode**)

4. You can start render even if the folder has files on it. (Applies only to **Picture Mode** & **Single Frame Mode**)

5. You can create folder by just putting a folder name that is not yet exist in the current location/path. (Applies to **Path Folder**)

6. To set the resolution just set it in the Game view or Game panel.

For Frame By Frame Rendering (Manual)

1. Click **Render** to start render, once clicked it will turn back to unchecked means render 1 frame not continuous unlike **Frame By Frame Rendering (Default)**.

2. You can overwrite a specific saved frame by setting the **Frame Number** to the frame number you want to overwrite then click **Render**. Be sure that frame number is in the folder. Be careful not to double the **Render** or else it will overwrite the next frame number that is already saved.

For Frame By Frame Rendering (Default)

1. Click play button to start render, once the button is clicked **Current Frame** will start moving or display the current frame once the **Current Frame** reached the **Start Frame** number it will start rendering then later if **Current Frame** reached the **Start Frame** number it will stop render. To completely end rendering click play button.

2. If you render a scene with timeline, set **Frame Rate** to the frame rate of timeline. *Example "Timeline frame rate is 60 = Frame By Frame Rendering (Default) Frame rate is also 60"*. If the two is not equal the output is not synchronized especially if you edit it in your Video Editor Software or Compositor Software.

(For Importing PNG files to your Video Editor or Compositing Software)

1. Import PNG files as **PNG Sequence** or **Image Sequence,** be sure your video editor or compositing software has this features or option. Be sure PNG files are numbered frames like *"Frame 0002 to Frame 9000 or higher"*.

2. Change the imported **PNG Sequence** or **Image Sequence** file frame rate to the frame rate you set in your **Frame by Frame Rendering** Settings.

(Smooth Object Normal – Helper Script)

How to use

1. Select the model you want the **Smooth Object Normal – Helper Script** to be applied.
2. Click **Add Component** and go to **RealToon -> Tools** and select **Smooth Object Normal – Helper**.
3. Create an empty game object.
4. Reset its **Transform** of the empty game object you've created.
   All transform **(Position, Rotation and Scale)** should be **0**.
4. Put it on the **Root** bone of the model.
5. Select again the model that contains the helper script that you add earlier.
6. Go to the **Inspector** then **Smooth Object Normal – Helper**.
7. Assign a material that uses **Smooth Object Normal** to the **Material** field.
8. Put the empty object that you created earlier to the **Object Helper field**.
9. Assign the object that will be followed by the **Object Helper** to the **The Object To Follow** field.

[RealToon Effects/Post-Processing]

*Sobel Outline Effect

- Full screen sobel type outline and can only be use on **Built-In RP/3D**.

Settings
Outline Width *(Default: 0)*
- Outline width or line thickness.
Outline Color *(Default: White)*
- Outline Color. *[Note]* **Change this to white if you want the screen color to color the outline.* **Increase the **Color Power** to make it dark.*
Color Power *(Default: 2)*
- How strong the outline color is. *[Note]* **Negative values will make it light, while positive values will make it strong/dark color.*

*DeNorSob Outline (Post-Processing)

- **Depth**, **Normal** and **Sobel Based Outline** into one Post-Processing.
- Can only be use on **URP** and **HDRP**.

Settings
Outline Width *(Default: 0)*
- Outline width or line thickness.
Depth Threshold *(Default: 900)*
- This will adjust the Depth near and far.

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[Note]
*Positive values will move the **Depth** far but will reduce inner outlines if too far.*
*Negative values will move the **Depth** closer but will create some unwanted outline looks if too close.*
Be sure to balance it.
*Increase this more than **900** to have a clean silhouette style outline.*

Normal Threshold *(Default: 1.3)*

- This will adjust the Normals.

[Note]
Positive values will show more outer and inner outline.
Negative values will reduce more outer and inner outline.

Normal Min *(Default: 1)*
Normal Max *(Default: 1)*

- This will adjust the Minimum and Maximum of the Normal.

[Note]
*If **Min** and **Max** are in the same value, it will make the outline look hard or hard edge.*
Adjusting these will help you to get more outlines.

Sobel Outline *(Default: Unchecked)*

- Turn on Sobel Outline.

[Note]
*If this turned on, **Depth** and **Normal** based outline will be disabled.*
*If you want to use both **Depth – Normal Base Outline** and **Sobel Outline,***
  *Turn on **Mix Depth Normal And Sobel Outline** option.*

Sobel Threshold *(Default: 0)*

- The amount of outline to be shown.

White Threshold *(Default: 0)*

- The amount of outline that has been detected in the white or highlight area of the screen.

Black Threshold *(Default: 0)*

- The amount of outline that has been detected in the black or dark area of the screen.

Outline Color *(Default: Black)*
- Outline Color.

Mix Full Screen Color *(Default: Unchecked)*
- This will mix the **Screen Color** into the **Outline Color**.

Show Outline Only *(Default: Unchecked)*
- Show outline only.

Mix Depth Normal And Sobel Outline *(Default: Unchecked)*
- This will mix **Depth – Normal Based Outline** and **Sobel Outline**.

[Note About DeNorSob Outline]
- The outline width will be affected by the screen resolution, the higher the resolution the thinner the outline width, the lower the resolution the thicker the outline width.

[How To Use RealToon Post-Processing]

*Sobel Outline (Built-In RP/3D)

Built-In RP/3D

1. Select a camera on the scene.
2. Click **Add Component** and go to **RealToon -> Effect**.
3. Select **Sobel Outline**.

*DeNorSob Outline (URP and HDRP)

URP/Universal Render Pipeline

1. Open the folder **Settings** and select the default **ForwardRenderer** or your created forward rendered
   on the project window/panel.
2. Click **Add Render Feature** and select **Depth-Normals Feature**.
3. Click **Add Render Feature** again and select **De Nor Sob Outline**.

[Note]
*- Before you start using it, you'll need to turn on **Depth Texture** on the camera or on URP settings.*
  *This is needed for the **Depth Based Outline**.*
*- **Depth-Normals Feature** is needed for the **Normal Based Outlin**e.*

HDRP/High Definition Render Pipeline

1. Go to **GameObject -> Volume** then click **Global Volume**.
2. Then next click **Global Volume** in the **Hierarchy** window/panel or in the scene.
3. Click **New**, this will create a **Global Volume Profile**.
4. Click **Add Override** then go to **Post-Processing -> RealToon** then select **DeNorSob Outline**.

** Then next we will add that effect in the **Custom Post Process Order** so that the effect will work.*

5. To add Go to **Edit -> Project Settings -> HDRP Default Settings** then scroll down to **Custom Post Process Order**.

   (For HDRP 7 and 8: Click the **+** sign under the **After Post Process** then click **DeNorSob Outline**.**)**
   (For HDRP 10 to later: Click the **+** sign under the **Before TAA** then click **DeNorSob Outline**.)

If you are planning to use the effect in making games or make a build

1. Go to **Edit -> Project Settings** then **Graphics**.
2. After that add **1** to the **Size** under **Always Included Shaders**, now it adds another element.
3. Click the last element then search for **DeNorSob Outline** then click it.

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[RealToon Shader Options and Features]

Texture - Color	Shader Type	Render Pipeline
Double Sided *(Default: Off)* - Make the other side of a plane object or face visible.	**All RealToon Shader**	**Built-In RP/3D** **LWRP**

Culling *(Default: Off)*
 	
- Controls which sides of polygons should be culled (not drawn).
 	
[Note]
* ***Back***: *Don't render polygons that are facing away from the viewer.*
* ***Front***: *Don't render polygons that are facing towards the viewer,*
  Used for turning objects inside-out.
* ***Off***: *Disables culling - all faces are drawn,*
    This also called **Double Sided**."
	Default Shader	**URP and HDRP**

Texture/Main Texture *(Default: Empty)* - The main texture of the object.	**All RealToon Shader**	**All Render Pipeline**
Texture Pattern Style *(Default: Unchecked)* - Turn **Texture/Main Texture** into pattern style.	**All RealToon Shader**	**All Render Pipeline**
Refraction Intensity *(Default: 1)* - How strong the **Refraction** is.	**Refraction Shader**	**Built-In RP/3D**
Texture Intensity *(Default: 0)* - How visible the **Texture/Main Texture** is.	**Refraction Shader**	**Built-In RP/3D**

Main Color *(Default: Gray/RGB:176)*
- The main color of the object.
 	
[Note]
The default color is on **Gray** *color because of the Ambient/Environmental Light/GI.*
Set this to **White** *if your object don't receive Ambient/Environmental Light/GI*
  or if the option **Receive Environmental Lighting and GI** *is disabled.*
  Only set it to white if you leave it to default color.
On **RealToon URP***, the default color value is* **RGB: 248***.*
	All RealToon Shader	**All Render Pipeline**

Mix Vertex Color *(Default: Unchecked)* - Mix the object vertex color to the **Main Color**. *[Note]* *This can also be use as View Object Vertex Color for debug.*	**All RealToon Shader**	**All Render Pipeline**

Main Color in Ambient Light Only *(Default: Unchecked)* - Put the Main Color into the Ambient light. *[Note]* **This will only works if there is Ambient/Environmental Light/GI.* **Enable this if you're doing multi-shading.*	**All RealToon Shader**	**All Render Pipeline**
Highlight Color *(Default: White)* - Put the Main Color into the Ambient light. *[Note]* **This will only works if there is Ambient/Environmental Light/GI.* **Enable this if you're doing multi-shading.*	**All RealToon Shader**	**All Render Pipeline**
Highlight Color *(Default: 1)* - Highlight color power or intensity.	**All RealToon Shader**	**All Render Pipeline**
Enable Texture Transparent *(Default: Unchecked)* - Enable texture transparent. *[Note]* **This is disabled if no texture assign on the **Texture/Main Texture**.*	**Default Shader**	**Built-In RP/3D LWRP**

MatCap/Material Capture	Shader Type	Render Pipeline
Intensity *(Default: 1)* - How visible or strong the **MatCap** is.	**All RealToon Shader**	**All Render Pipeline**
MatCap *(Default: Empty)* - A **MatCap** texture to be use.	**All RealToon Shader**	**All Render Pipeline**
Specular Mode *(Default: Unchecked)* - Turn **MatCap** into specular style.	**All RealToon Shader**	**All Render Pipeline**
Specular Mode *(Default: Unchecked)* - Turn **MatCap** into specular style.	**All RealToon Shader**	**All Render Pipeline**
Specular Power *(Default: 1)* - How strong or intense the specular look is.	**All RealToon Shader**	**All Render Pipeline**

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Mask MatCap *(Default: Empty)*		
- Mask the **MatCap**. *[Note]* **Use a Black and White or Grayscale texture/map.* **White is the MatCap while the Black is the non MatCap part.*	**All RealToon Shader**	**All Render Pipeline**

Cutout	Shader Type	Render Pipeline
Cutout *(Default: 0)* - Cutout value or threshold	**All RealToon Shader**	**All Render Pipeline**
Alpha Based Cutout *(Default: Unchecked)* - Use the **Main Texture** alpha for cutting out. *[Note]* **If this is unchecked it will follow the bright and dark colors of the Main Texture for cutting out.*	**All RealToon Shader**	**All Render Pipeline**
Use Secondary Cutout Only *(Default: Unchecked)* - Use only the secondary cutout for cutting out	**All RealToon Shader**	**All Render Pipeline**
Secondary Cutout *(Default: 0)* - A texture to be use as secondary cutout. *[Note]* **You can use Colored or Black and White or Grayscale color texture.*	**All RealToon Shader**	**All Render Pipeline**

Transparency	Shader Type	Render Pipeline
Opacity *(Default: 1)* - How opaque the object is.	**All RealToon Shader**	**All Render Pipeline**
Transparent Threshold *(Default: 0)* - The transparent alpha threshold of the object **Texture/Main Texture.**	**All RealToon Shader**	**All Render Pipeline**
Blend – Source *(Default: ScrAlpha)* - Transparent blend source.	**Default Shader**	**URP and HDRP**
Blend – Destination *(Default: OneMinusScrAlpha)* - Transparent blend destination.	**Default Shader**	**URP and HDRP**

Affect Shadow (Default: Checked) - Transparent opacity affect shadow.	Default Shader	URP
Mask Transparency (Default: Empty) - Mask transparent. [Note] *Use a Black and White or Grayscale texture/map. *White is the non transparent part while the Black is the Transparent part or just normal part.	All RealToon Shader	All Render Pipeline

Normal Map	Shader Type	Render Pipeline
Normal Map (Default: Empty) - The Normal Map to be use.	All RealToon Shader	All Render Pipeline
Normal Map Intensity (Default: 1) - How strong the Normal Map is.	All RealToon Shader	All Render Pipeline

Color Adjustment	Shader Type	Render Pipeline
Saturation (Default: 1) - Adjust the color saturation of the object. [Note] *- The outline width will be affected by the screen resolution, the higher the resolution the thinner the outline width, the lower the resolution the thicker the outline width.	All RealToon Shader	All Render Pipeline

Outline	Shader Type	Render Pipeline
Width (Default: 0.5) - Outline width or thickness. [Note] *On Screen Space Outline mode, the Outline Width will be affected by the screen resolution, the higher the resolution the thinner the Outline Width, the lower the resolution the thicker the Outline Width.	All RealToon Shader	All Render Pipeline
Width Control (Default: Empty) - A black and white or grayscale color texture to be use control the outline width. [Note] *This will not work if the Width option is 0. *Black is 0 while White is 1.	All RealToon Shader	All Render Pipeline

	Default Shader	HDRP
Enhance Outline Using Normal Map *(Default: Unchecked)* - Use a normal map to enhance the outline normal direction.	Default Shader	HDRP
Normal Map *(Default: Unchecked)* - A normal map for enhancing the outline normal direction.	Default Shader	HDRP
Normal Map Intensity *(Default: 1)* - How strong the **Normal Map** is.	Default Shader	HDRP
Use Vertex Color As Normal Direction *(Default: Unchecked)* - Use the vertex colors of the object as normal direction. *[Note]* **To view or debug the vertex color of the object, enable **Mix Vertex Color** option.*	Default Shader	URP and HDRP
Outline Extrude Method *(Default: Normal)* - Outline extrusion type/method to be use. *[Note]* **Origin – The extrusion will be based on the object's center of origin.* **Normal – The extrusion will be based on the object's normal direction.*	All RealToon Shader	All Render Pipeline
Outline Offset *(Default: X:0 Y:0 Z:0)* - XYZ offset value of the outline.	All RealToon Shader	All Render Pipeline
Double Sided Outline *(Default: Off)* - This will show the front side of the outline or change the culling of the outline to off. *[Note]* **Useful for plane object.* **Outline Z Position In Camera option is needed to be adjust to show the object.*	All RealToon Shader	All Render Pipeline
Color *(Default: Black)* - The color of the outline	All RealToon Shader	All Render Pipeline
Mix Main Texture To Outline *(Default: Unchecked)* - This will mix **Texture/Main Texture** to outline **Color**.	All RealToon Shader	All Render Pipeline
Noisy Outline Intensity *(Default: 0)* - How noisy is the outline is.	All RealToon Shader	All Render Pipeline

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Dynamic Noisy Outline *(Default: Unchecked)* - Moving noisy outline. *[Note]* *This will not work if the **Noisy Outline Intensity** is **0**.*	**All RealToon Shader**	**All Render Pipeline**
Light Affect Outline Color *(Default: Unchecked)* - Light falloff, color and intensity affect outline color.	**All RealToon Shader**	**All Render Pipeline**
Outline Width Affected By View Distance *(Default: Unchecked)* - Camera view distance affects outline width or thickness. *[Note]* *Far distance will increase outline width.* *Near distance will decrease outline width.*	**All RealToon Shader**	**All Render Pipeline**
Far Distance Max Width *(Default: Unchecked)* - The maximum width or thickness value when camera distance is far from the object.	**All RealToon Shader**	**All Render Pipeline**
Transparent Opacity Affect Outline *(Default: Checked)* - Transparent affect outline opacity. *[Note]* *This only works if **Transparent Mode** is enabled.*	**Default Shader**	**HDRP**
Vertex Color Blue Affect Outline Width *(Default: Unchecked)* - Object vertex color blue channel affect **Outline Width**. *[Note]* *This will not work if the **Width** option is **0**.*	**All RealToon Shader**	**All Render Pipeline**
Use Screen Space Outline / Use Traditional Outline - Use **Screen Space Outline** or use **Traditional Outline**. *[Note]* *This is **NOT PER-MATERIAL.*** ***THIS WILL MODIFY THE SHADER FILE** and change the type of outline to be use.* *On **RealToon URP**, only **Depth Based Outline** is available and **Depth Texture** is needed to be **On**.* *If **Screen Space Outline** is used and **Transparent Mode** is enabled, the outline from the other object will be visible even if the transparent **Opacity** is **1 and ZWrite** is **Off** or **On**.*	**Default Shader**	**URP and HDRP**

Screen Space Outline	Shader Type	Render Pipeline
Mix Outline To The Shader Output *(Default: Unchecked)* - This will mix the outline looks and color to the shader output.	**Default Shader**	**HDRP**
Depth Threshold *(Default: 900)* - This will adjust the Depth near and far. *[Note]* *Positive values will move the **Depth** far but will reduce inner outlines if too far.* *Negative values will move the **Depth** closer but will create some unwanted outline looks if too close.* *Increase this more than 900 to have a clean silhouette style outline.*	**Default Shader**	**URP and HDRP**
Normal Threshold *(Default: 1.3)* - This will adjust the Normals. *[Note]* *Positive values will show more outer and inner outline.* *Negative values will reduce more outer and inner outline.*	**Default Shader**	**HDRP**
Normal Min *(Default: 1)* | **Normal Max** *(Default: 1)* - This will adjust the **Minimum** and **Maximum** of the **Normal**. *[Note]* *If **Min** and **Max** are in the same value, it will make the outline look hard or hard edge.* *Adjusting these will help you to get more outlines.*	**Default Shader**	**HDRP**

Self Lit/Self Illumination	Shader Type	Render Pipeline
Intensity *(Default: 1)* - How strong or intense the **Self Lit** is.	**All RealToon Shader**	**All Render Pipeline**
Color *(Default: White)* - **Self Lit** color.	**All RealToon Shader**	**All Render Pipeline**
Power *(Default: White)* - How strong the **Self Lit** color.	**All RealToon Shader**	**All Render Pipeline**
Texture and Main Color Intensity *(Default: 1)* - How strong the **Texture/Main Texture** and **Main Color** is for **Self Lit**. *[Note]* *Adjust this if the **Texture/Main Texture** and **Main Color is too strong for self lit.***	**All RealToon Shader**	**All Render Pipeline**

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	Shader Type	Render Pipeline
High Contrast *(Default: Checked)* - Will turn the **Self Lit** into high contrast look. *[Note]* *This will mix **Texture/Main Texture** and **Main Color** twice for high contrast look.* *Uncheck this if you just want the color.*	**All RealToon Shader**	**All Render Pipeline**
Mask Self Lit *(Default: Empty)* - Mask **Self Lit**. *[Note]* *Use a **Black** and **White** or **Grayscale** texture/map.* *White is the **Self Lit** while the **Black** is the non **Self Lit** or just normal part.*	**All RealToon Shader**	**All Render Pipeline**

Gloss	Shader Type	Render Pipeline
Gloss Intensity *(Default: 1)* - How visible or strong the gloss is.	**All RealToon Shader**	**All Render Pipeline**
Glossiness *(Default: 0.8)* - How gloss the object is.	**All RealToon Shader**	**All Render Pipeline**
Softness *(Default: 0)* - How soft the gloss is.	**All RealToon Shader**	**All Render Pipeline**
Color *(Default: White)* - **Gloss** color.	**All RealToon Shader**	**All Render Pipeline**
Color Power *(Default: 10)* - How strong the gloss color is.	**All RealToon Shader**	**All Render Pipeline**
Mask Gloss *(Default: Empty)* - Mask **Gloss**. *[Note]* *Use a **Black** and **White** or **Grayscale** texture/map.* *White is the **Gloss** part while the **Black** is the non **Gloss** part or just normal.*	**All RealToon Shader**	**All Render Pipeline**

Gloss Texture	Shader Type	Render Pipeline
Gloss Texture *(Default: Empty)* - A texture or image to be use as **Gloss**. *[Note]* **Use any **Black** and **White** or **Grayscale** color 4x4 or equal size texture/image.* **If you're using a wide size image, Adjust the **X Tiling** of the **Gloss Texture**.*	**All RealToon Shader**	**All Render Pipeline**
Softness *(Default: 0)* - How soft the **Gloss Texture** is.	**All RealToon Shader**	**All Render Pipeline**
Pattern Style *(Default: Unchecked)* - Turn **Gloss Texture** into pattern style.	**All RealToon Shader**	**All Render Pipeline**
Rotate *(Default: 0)* - Rotate **Gloss Texture**. *[Note]* **Adjust also the **Gloss Texture Offset** option to adjust the position if needed.*	**All RealToon Shader**	**All Render Pipeline**
Follow Object Rotation *(Default: Unchecked)* - **Gloss Texture** follows object rotation.	**All RealToon Shader**	**All Render Pipeline**
Follow Light *(Default: Unchecked)* - **Gloss Texture** follows light. *[Note]* **This will adjust the follow light sensitivity.*	**All RealToon Shader**	**All Render Pipeline**

Shadow	Shader Type	Render Pipeline
Overall Shadow Color *(Default: Black)* - The overall shadow color of the object. *[Note]* **This will affect **Realtime shadow**, **Self Shadow/Shade** and **ShadowT**.* **Change this to **White** if you want to use the **Color Shadow Texture** feature to color the shadow.*	**All RealToon Shader**	**All Render Pipeline**
Overall Shadow Color Power *(Default: 1)* - How strong the **Overall Shadow Color**.	**All RealToon Shader**	**All Render Pipeline**

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Self Shadow & ShadowT At View Direction *(Default: Unchecked)* - **Self Shadow** and **ShadowT** follow the camera's view or view direction.	**All RealToon Shader**	**All Render Pipeline**
Reduce Shadow *(Default: 0)* - Reduce self cast shadow of the object.	**Default Shader**	**URP and HDRP**
Reduce Shadow (Pointlight) *(Default: 0)* - Reduce self cast shadow of the object. *[Note]* *This option will take effect when there's a pointlight present on the scene.*	**All RealToon Shader**	**Built-In RP/3D**
Point Light Shadow Visibility Distance *(Default: 0)* - The amount of visible Point Light shadow on the object when the Point Light is move away from the object.	**All RealToon Shader**	**Built-In RP/3D**
Reduce Shadow (Spot & Directional Light) *(Default: 10)* - Reduce self cast shadow of the object. *[Note]* *This option will take effect when there's a spotlight or directional light or both present on the scene.*	**All RealToon Shader**	**Built-In RP/3D**
Shadow Hardness *(Default: 0)* - Realtime shadow hardness look.	**All RealToon Shader**	**All Render Pipeline**
Self Shadow & Realtime Shadow Intensity *(Default: 1)* - **Self Shadow** and **Realtime Shadow** intensity or visibility. *[Note]* *If **Self Shadow** feature is disabled, it will only affect **RealTime Shadow**.*	**All RealToon Shader**	**All Render Pipeline**
Enable Screen Space Shadow *(Default: Checked)* - Enable **Screen Space** type **Outline**. *[Note]* *If this option is enabled, it will also allow you to use **DXR/Ray Tracing Shadow**.* *If this option is disabled, it will use the non **Screen Space Shadow** and **shadow map**.*	**Default Shader**	**HDRP**

RealToon

Self Shadow/Shade	Shader Type	Render Pipeline
Self Shadow Intensity *(Default: 1)* - How visible the **Self Shadow/Shade** is.	**Fade Transparency Shader**	**Built-In RP/3D LWRP**
Threshold *(Default: 0.85)* - The amount of **Self Shadow/Shade** on the object.	**All RealToon Shader**	**All Render Pipeline**
Vertex Color Green Affect Self Shadow Threshold *(Default: Unchecked)* - Object vertex color blue channel affect **Self Shadow Threshold**. *[Note]* *This will not work if the **Width** option is **0**.*	**All RealToon Shader**	**All Render Pipeline**
Hardness *(Default: 1)* - Hardness looks of the **Self Shadow/Shade**. *[Note]* *Value **1** hard look.* *Value **0** Soft look.*	**All RealToon Shader**	**All Render Pipeline**
Self Shadow & Real Time Shadow Color *(Default: White)* - **Self Shadow/Shade** and **RealTime Shadow** color power or intensity. *[Note]* *Visible if the **Overall Shadow Color** option is color **White** or any light color.*	**All RealToon Shader**	**All Render Pipeline**
Self Shadow & Real Time Shadow Color Power *(Default: 1)* - **Self Shadow** and **RealTime Shadow** color. *[Note]* *Visible if the **Overall Shadow Color** option is color **White** or any light color.*	**All RealToon Shader**	**All Render Pipeline**
Self Shadow Affected By Light Shadow Strength *(Default: Unchecked)* - **Self Shadow/Shade** visibility will be affected by the light shadow **Strength.**	**All RealToon Shader**	**All Render Pipeline**

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Smooth Object Normal/Ignore Object Normal	Shader Type	Render Pipeline
Smooth Object Normal *(Default: 0)* - The amount of smoothed object normal/ignored object normal.	**All RealToon Shader**	**All Render Pipeline**
Vertex Color Red Control Smooth Object Normal *(Default: Unchecked)* - Object vertex color red channel affect the amount of smoothed object normal/ignored object normal. *[Note]* *Visible if the **Overall Shadow Color** option is color **White**.*	**All RealToon Shader**	**All Render Pipeline**
XYZ Position *(Default: X:0 Y:0 Z:0)* - The amount of smoothed object normal/ignored object normal.	**All RealToon Shader**	**All Render Pipeline**
XYZ Hardness *(Default: 14)* -The amount of hardness of the smoothed object normal/ignored object normal. *[Note]* *This will only affect **Self Shadow/Shade** features and **ShadowT**.* *Higher value will turn the normal into hard and less movement and control for **Self Shadow/Shade** and **ShadowT**.* *Lower value will turn the normal into soft and more headroom for movement and control for **Self Shadow/Shade** and **ShadowT**.*	**All RealToon Shader**	**Built-In RP/3D**
Show Normal *(Default: Unchecked)* - Show the object normal. *[Note]* *Red color is X, Blue color is Y, Green color is Z.*	**All RealToon Shader**	**All Render Pipeline**

Shadow Color Texture	Shader Type	Render Pipeline
Shadow Color Texture *(Default: Empty)* - Texture to be use to color the shadow. *[Note]* *Visible if the **Overall Shadow Color** option is color **White** or any light color.*	**All RealToon Shader**	**All Render Pipeline**
Power *(Default: 0)* - How strong the **Shadow Color Texture** is.	**All RealToon Shader**	**All Render Pipeline**

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ShadowT	Shader Type	Render Pipeline
ShadowT Intensity *(Default: 1)* - How visible the **ShadowT** is.	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
Shadow T *(Default: Empty)* - A **Black** and **White** or **Grayscale** texture to be use as shadow. *[Note]* **You can use a **Flat**, **Gradient** or **SDF** texture as shadow.* **Black will always be visible and not affected by the light while **Gray** and **White** will always be affect by the light*	**All RealToon Shader**	**All Render Pipeline**
Light Threshold *(Default: 50)* - The amount of light to affect **ShadowT**.	**All RealToon Shader**	**All Render Pipeline**
Light Threshold *(Default: 0)* - The amount of **ShadowT**.	**All RealToon Shader**	**All Render Pipeline**
Hardness *(Default: 1)* - Hardness looks of the **ShadowT**.	**All RealToon Shader**	**All Render Pipeline**
Color *(Default: White)* - **ShadowT** Color. *[Note]* **Visible if the **Overall Shadow Color** option is color **White** or any light color.*	**All RealToon Shader**	**All Render Pipeline**
Color Power *(Default: 1)* - How strong the color is.	**All RealToon Shader**	**All Render Pipeline**
Ignore Light *(Default: Unchecked)* - Don't follow the light or Ignore light direction.	**All RealToon Shader**	**All Render Pipeline**
Show In Shadow *(Default: Unchecked)* - Show **ShadowT** in the shadow. *[Note]* **Visible if the **Overall Shadow Color** option is color **White** or any light color.*	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
Show In Ambient Light *(Default: Unchecked)* - Show **ShadowT** in Ambient Light. *[Note]* **Visible if the **Ambient Light/Environmental Light** or **GI** is present.*	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**

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Show In Ambient Light & Shadow Intensity (Default: 1) - **Show In Ambient Light** and **Show In Shadow** visibility. *[Note]* *Visible if the **Ambient Light/Environmental Light** or **GI** is present.*	All RealToon Shader "Except the Lite"	All Render Pipeline
Show In Ambient Light & Shadow Threshold (Default: 1) - **Show In Ambient Light** and **Show In Shadow** threshold.	All RealToon Shader "Except the Lite"	All Render Pipeline
Light Falloff Affect ShadowT (Default: Unchecked) - Light falloff will affect **ShadowT**. *[Note]* *Visible if the **Ambient Light/Environmental Light** or **GI** is present.*	All RealToon Shader	All Render Pipeline

PTexture	Shader Type	Render Pipeline
PTexture (Default: Empty) - A texture to be use as pattern. *[Note]* *This will only affect **Self Shadow/Shade**, **ShadowT** features and **RealTime Shadow**.*	All RealToon Shader	All Render Pipeline
Power (Default: 1) - How strong the **PTexture** looks.	All RealToon Shader	All Render Pipeline

Lighting	Shader Type	Render Pipeline
Receive Environmental Lighting and GI (Default: Checked) - The object will receive environmental lighting and GI.	All RealToon Shader	All Render Pipeline
Environmental Lighting Intensity (Default: 1) - How strong or intense the environmental lighting. *[Note]* *This is connected to **Receive Environmental Lighting and GI** option.*	All RealToon Shader "Except the Lite"	All Render Pipeline
Use Old Ambient Light (Default: Unchecked) - Use the old unity's Ambient Light.	Lite Shaders	Built-In RP/3D

Enable Screen Space Global Illumination *(Default: Checked)* - Enable **Screen Space** type **Global Illumination**. *[Note]* **If this option is enabled, it will also allow you to use **DXR/Ray Tracing Global Illumination**.* **If this option is disabled, it will use the non **Screen Space Global Illumination.***	**Default Shader**	**HDRP**
GI Flat Shade *(Default: Unchecked)* - Turn GI Shade into flat look.	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
GI Shade Threshold *(Default: 0)* - The amount of GI Shade on the object.	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
Raytraced GI Shade Falloff *(Default: 0)* - This will adjust the **Raytraced Global Illumination** shade falloff. *[Note]* **This will only take effect if the object is in a real time light **(Directional, Spot, Point and Area)** and the **Shadow Color** is not color black.*	**Default Shader**	**HDRP**
Light Affect Shadow *(Default: Unchecked)* - Light intensity, color and light falloff affect shadow. *[Note]* **This will only affect **Self Shadow/Shade**, **ShadowT** features and **RealTime Shadow**.*	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
Light Intensity *(Default: -1)* - How strong or intense the light on the shadow. *[Note]* **This will only affect **Self Shadow**, **ShadowT** features and **RealTime Shadow**.* **This is connected to **Light Affect Shadow** option.* **The default value on **RealToon URP** and **RealToon HDRP** is **1**.*	**All RealToon Shader "Except the Lite"**	**All Render Pipeline**
Use Traditional Light Blend *(Default: Unchecked)* - This will use the traditional style light blending. *[Note]* ** If enabled light blending will be in add mode.* ** If not enabled the light blending will based on high or maximum light intensity and the blending will be similar to Anime or Cartoon.*	**Default Shader**	**URP and HDRP**
Enable Punctual Lights *(Default: Checked)* - This will enabled the object to receive **Punctual Lights (Point Spot and Area Lights).**	**Default Shader**	**HDRP**

Enable Area Light *(Default: Unchecked)* - This will enabled the object to receive **Area Light.** *[Note]* * *If the size of a **Rect Type Area Light** is too un-even like **'X:24	Y:1'** the light fall off will cause some noise.* *This only applies when **Area Light Smooth Look** option is disabled.*	**Default Shader**	**HDRP**
Directional Light Intensity *(Default: 0)* - How strong or intense the Directional Light on the object.	**All RealToon Shader**	**All Render Pipeline**
Point and Spot Light Intensity *(Default: 0.45)* - How strong or intense the Point and Spot light on the object. *[Note]* *On **RealToon URP** and **RealToon HDRP** the default value is **0.**	**All RealToon Shader**	**All Render Pipeline**
Area Light Intensity *(Default: 0)* - How strong or intense the **Area Light** on the object.	**Default Shader**	**HDRP**
Tube Light Falloff *(Default: 20)* - This will adjust the **Tube Type Area Light** falloff on the object.	**Default Shader**	**HDRP**
Area Light Smooth Look *(Default: Unchecked)* - This will make the **Area Light** shades and falloff on the object looks smooth. *[Note]* *If enabled, **Tube Light Falloff** option will be disabled.	**Default Shader**	**HDRP**
Light Falloff Softness *(Default: 1)* - How soft the Point and Spotlight light falloff is on the object. *[Note]* *Set this to **0** if you want an anime style light falloff, it is usually hard look.	**All RealToon Shader**	**All Render Pipeline**

Custom Light Direction	Shader Type	Render Pipeline
Intensity *(Default: 0)* - The amount of custom light direction sensitivity.	**All RealToon Shader**	**All Render Pipeline**
Custom Light Direction *(Default: X:0 Y:0 Z:10)* - Custom Light Direction vector value. *[Note]* *This will only affect **Self Shadow/Shade** and **ShadowT** features.	**All RealToon Shader**	**All Render Pipeline**

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Follow Object Rotation *(Default: Unchecked)*	Shader Type	Render Pipeline
- **Custom Light Direction** will follow object rotation. *[Note]* *This will only affect **Self Shadow/Shade** and **ShadowT** features.*	**All RealToon Shader**	**All Render Pipeline**

Reflection	Shader Type	Render Pipeline
Intensity *(Default: 0)* - How visible the reflection is	**All RealToon Shader**	**All Render Pipeline**
Roughness *(Default: 0)* - How rough the reflection looks.	**All RealToon Shader**	**All Render Pipeline**
Metallic *(Default: 0)* - How metallic the object is. *[Note]* *Change the **Main Color** to something dark to make it more metallic and dark.*	**All RealToon Shader**	**All Render Pipeline**
Enable Screen Space Reflection *(Default: Checked)* - Enable **Screen Space** type **Reflection**. *[Note]* *If this option is enabled, it will also allow you to use **DXR/Ray Tracing Reflection**.* *If this option is disabled, it will use the non **Screen Space Reflection** and use the normal style **Reflection**.*	**Default Shader**	**HDRP**
Mask Reflection *(Default: Empty)* - Mask **Reflection**. *[Note]* *Use a **Black** and **White** or **Grayscale** texture/map.* *White is the **Reflection part** while the **Black** is the non **Reflection** part.*	**All RealToon Shader**	**All Render Pipeline**

FReflection	Shader Type	Render Pipeline
FReflection *(Default: Empty)* - A texture or image to be use as reflection. *[Note]* *use any 4x4 or equal size texture/image.* *If you're using wide size image, Adjust the **X Tiling** of the **FRelfection**.* *FReflection stands for **Fake Reflection**.*	**All RealToon Shader**	**All Render Pipeline**

Rim Light/Fresnel	Shader Type	Render Pipeline
Rim Light Intensity *(Default: 1)* - How visible the **Rim Light** is.	**Default Shader**	**URP and HDRP**
Unfill *(Default: 1.5)* - Reduce Rim Light on the object.	**All RealToon Shader**	**All Render Pipeline**
Softness *(Default: 1)* - How soft the **Rim Light** is.	**All RealToon Shader**	**All Render Pipeline**
Light Affect Rim Light Color *(Default: Unchecked)* - Light intensity, color and falloff affect rim light color.	**All RealToon Shader**	**All Render Pipeline**
Color *(Default: White)* - Rim light color.	**All RealToon Shader**	**All Render Pipeline**
Color Power *(Default: 10)* - How strong the rim light color is.	**All RealToon Shader**	**All Render Pipeline**
Rim Light In Light *(Default: Checked)* - Rim light in the light area of the object.	**All RealToon Shader**	**All Render Pipeline**

Depth	Shader Type	Render Pipeline
Depth *(Default: 0.2)* - The amount of **Depth** effect.	**Refraction Shader**	**Built-In RP/3D**
Edge Hardness *(Default: 0.1)* - How hard the depth edge looks.	**Refraction Shader**	**Built-In RP/3D**
Color *(Default: RGB: 128)* - **Depth** edge color.	**Refraction Shader**	**Built-In RP/3D**
Color power *(Default: 1.8)* - How strong the color is.	**Refraction Shader**	**Built-In RP/3D**

Tessellation	Shader Type	Render Pipeline
Smoothness *(Default: 0.5)* - Smooth tessellated faces.	**All RealToon Shader With Tessellation**	**Built-In RP/3D**
Tessellation Transition *(Default: 0.8)* - Transition distance between **Near** and **Far**. *[Note]* ***0** *means mostly near tessellation value while* **1** *means mostly far tessellation value.*	**All RealToon Shader With Tessellation**	**Built-In RP/3D**
Tessellation Near *(Default: 1)* - The amount of **Tessellation** when **Near**.	**All RealToon Shader With Tessellation**	**Built-In RP/3D**
Tessellation Far *(Default: 1)* - The amount of **Tessellation** when **Far**.	**All RealToon Shader With Tessellation**	**Built-In RP/3D**

See Through	Shader Type	Render Pipeline
ID *(Default: 0)* - ID or Reference value.	**All RealToon Shader**	**Built-In RP/3D** **LWRP** **URP**
Set 1 *(Default: None)* | **Set 2** *(Default: None)* *[Note]* ***A** *the see through object.* * **B** *the object to be seen through* **A**. **If* **Set 1** *is set to* **A**, **Set 2** *is also set to* **A**. *(***See through object***)* **If* **Set 1** *is set to* **B**, **Set 2** *is also set to* **B**. *(***Object to be seen through "A"***)* **If the* **ID** *of the see through object* **A** *is set to* **1**, *the* **ID** *of the object to be seen through* **A** *is also set to* **1**. *(Important)* *[***See through object "A"***] Render Queue* *set to* ***Geometry (2000)***. *[***"B" object to be seen through "A"***] Render Queue* *set to* ***Geometry (2000)*** *and minus* **1**. *[***VRChat users that don't use this, Set both A and B to "Blank"***]* *(See/open scene "See Through Example" for more info)*	**All RealToon Shader**	**Built-In RP/3D** **LWRP** **URP**

Disable/Enable Features	Shader Type	Render Pipeline
MatCap - It is a complete material including lighting, specular and reflection that is baked into texture/image.	**All RealToon Shader**	**All Render Pipeline**
Normal Map - Normals that are baked into texture/image.	**All RealToon Shader**	**All Render Pipeline**
Outline	**All RealToon Shader**	**All Render Pipeline**
Cutout - Cutting out parts of the object based on the assign texture.	**All RealToon Shader**	**All Render Pipeline**
Color Adjustment - Adjusting the colors of the shader output.	**All RealToon Shader**	**All Render Pipeline**
Self Lit - Self lit, Self illumination or Emission.	**All RealToon Shader**	**All Render Pipeline**
Gloss - Glossy style or looks.	**All RealToon Shader**	**All Render Pipeline**
Gloss Texture - Glossy style or looks in texture/image form.	**All RealToon Shader**	**All Render Pipeline**
Self Shadow - Objects own shadow or shade.	**All RealToon Shader**	**All Render Pipeline**
Smooth Object Normal - Smooth the normals of the object. - Useful on Anime/Cartoon model face.	**All RealToon Shader**	**All Render Pipeline**
Shadow Color Texture - Shadow colors in texture/image form. - It is use for coloring shadow using texture/image.	**All RealToon Shader**	**All Render Pipeline**
ShadowT - Shadows in texture/image form. - Add more detailed shadows that can't produce by the Real time shadow.	**All RealToon Shader**	**All Render Pipeline**
PTexture - Patterned texture for comics, pop or manga style shadows.	**All RealToon Shader**	**All Render Pipeline**

Custom Light Direction - Customize light direction for shades. - Useful on Anime/Cartoon model face.	**All RealToon Shader**	**All Render Pipeline**
Reflection	**All RealToon Shader**	**All Render Pipeline**
FReflection - Reflection in texture or image form. - A Fake Reflection.	**All RealToon Shader**	**All Render Pipeline**
Rim Light - Light at the edge of the object.	**All RealToon Shader**	**All Render Pipeline**
Depth	**Refraction Shader**	**Built-In RP/3D**

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Other Options	Shader Type	Render Pipeline
No Light and Shadow On BackFace *(Default: Unchecked)* - No light and shadow on the back side on a face of the object. *[Note]* ** Useful for objects that are plane or quad.*	**All RealToon Shader**	**All Render Pipeline**
Hide Directional Light Shadow *(Default: Unchecked)* - Hide **Directional Light** cast shadow and received shadow on the object.	**All RealToon Shader**	**All Render Pipeline**
Hide Point & Spot Shadow *(Default: Unchecked)* - Hide **Point and Spot Light** cast shadow and received shadow on the object.	**All RealToon Shader**	**All Render Pipeline**
Hide Cast Shadow *(Default: Unchecked)* - Hide or disable object cast shadow.	**Fade Transparency**	**Built-In RP/3D**
Hide Contact Shadow *(Default: Checked)* - Hide or disable cast and received contact shadow.	**Default Shader**	**HDRP**
Disable Cast Shadow *(Default: Checked)* - Disable object cast shadow.	**Default Shader**	**URP and HDRP**
ZWrite *(Default: On)* - Turn on **Z Depth** on object.	**All RealToon Shader**	**All Render Pipeline**
Optimize for [Light Mode:Baked] *(Default: Unchecked)* - This will disable all real time features on the shader and optimize it for **[Light Mode: Baked]** *[Note]* ** Disable or uncheck this for [Light Mode: RealTime or Mixed] use.*	**Default Shader**	**URP**

Automatic Remove Unused Shader Keywords *(Default: Unchecked)* - Remove unused shader keywords automatically in all materials with Realtoon Shader. *[Note]* ** Warning: This will also remove stored previous shaders shader keywords.)* ** This will take effect once this enabled and when the RealToon Inspector shown.* ** You can just enable and disable it right away just to remove the unused shader keyword* ** Disable this if you experience too slow Inspector.*	**All RealToon Shader**	**All Render Pipeline**
Recursive Rendering *(Default: Unchecked)* - A replacement pipeline for rendering Meshes in the **High Definition Render Pipeline (HDRP)**. *[Note]* ** This option will only work on **DXR/Ray Tracing** enabled project.* ** Enable transparency to be visible on a reflective surface.* ** **Ptexture** feature and **Pattern Style** option will not work on this.* **If enabled, object will not receive **Ray Traced Global Illumination**.*	**Default Shader**	**HDRP**

RealToon Inspector Bottom Toolbar	Shader Type	Render Pipeline
Remove Outline (On Shader) | Add Outline (On Shader) - Remove or Add the outline on the shader. *[Note]* ** This is **NOT PER-MATERIAL**.* **THIS WILL MODIFY THE SHADER FILE to remove or add the outline on the shader.*	**Default Shader**	**URP and HDRP**
Refresh Settings - This will refresh and re-apply the settings properly. *[Note]* ** Click this if there are some problem, after you update, after material reset or re-import RealToon.*	**Default Shader**	**URP and HDRP**
Video Tutorials - RealToon video tutorials.	**All RealToon Shader**	**All Render Pipeline**
RealToon (User Guide).pdf - RealToon user guide or documentation.	**All RealToon Shader**	**All Render Pipeline**

Hide UI		
- Hide RealToon inspector UI. **[Note]** *This is **NOT PER-MATERIAL**.* *This is **Global**.*	**All RealToon Shader**	**All Render Pipeline**

Settings	Shader Type	Render Pipeline
Change Shader Compilation Target to 2.0 or 4.5 - This will change the Shader Compilation Target of the RealToon Shader file to '2.0' or '4.5'. **[Note]** *If the **Shader Compilation Target** is changed to **4.5**, the shader will support **DOTS/DOTS Hybrid Renderer** and **Tessellation**.* * This is **NOT PER-MATERIAL**.*	**Default Shader**	**URP**

[Important Notes/Tips]

A. You can control the properties of the shaders in your code.
To see/access the shader properties, just go to **RealToon Shaders** folder and select the shader you want to access.

If you want to learn how to access shader properties by code, just go to unity3d manual script.

B. If you are going to use **RealToon URP** or **RealToon HDRP** for environment object,
Use **Screen Space Outline** or **Remove Outline (On Shader)** and use a 3rd party outline.
Because the custom pass outline on the shader, can't be batch.

C. To use **RealToon URP** on a **DOTS – Hybrid Renderer** project, change the
Shader Compilation Target to **4.5** under the **Settings** section.
RealToon HDRP is already **Shader Compilation Target 4.5.**

D. Disable **Outline** if your object/s don't need outline or if you don't want to use outline and want less draw calls or want to use a 3rd party image effects/Post Processing outline.

E. On **Screen Space Outline** mode, the **Outline Width** will be affected by the screen resolution, the higher the resolution the thinner the **Outline Width**, the lower the resolution the thicker the **Outline Width**.

F. Adjust **Reduce Shadow** to reduce unwanted object self cast shadow especially shadow artifacts.

G. To properly color shadow, Adjust **Lighting -> Environmental Intensity** to 0 then change your object shadow color, after that, change **Environmental Intensity** back to 1 or your own value.

H. Note that tessellation only work on **DX11/12** to up**, OpenGL Core, OpenGL ES 3.1 mobile** & **PS4/XBoxOne** and **Shader Model 4.6** to up.

I. You can use **RealToon** together with **Unity3D Standard Shader** or your other shaders.

J. RealToon can receive GI, skylight/environment light & can do baked/real-time reflection.

K. You can use **ShadowT** as 2nd self shadow/shade.

L. You can use both **Directional Light** & **Point – Spot light** at the same time.

M. If you want a manga/comics look, use **PTexture** and use a half tone texture.

*Adjust **Saturation** to 0 if you want that Black and white look and you don't want to edit the texture again.
*To use **Saturation**, just enable **Color Adjustment**.

N. Always Change the **Overall Shadow Color** to **White** if you want to color other shadow features like **ShadowT** & **Self Shadow** and use **PTexture**.

O. Enable **Light Affect Shadow** if you want your shadow to be affected by lights.

P. **Fade Transparency & Refraction** doesn't receive shadows.

Q. **Refraction** doesn't have outline.

R. Make your **Normal Map** smooth for smooth better shading details.

S. Use **ShadowT** for more detailed or additional shadows like the shadows on a cloth or hair.

T. For better anime/toon shadow/shading, edit the Vertex Normal of your model by editing it to your 3d modeling software or use **Smooth Object Normal** feature or override object normal by using **Normal Map**.

U. Use **Custom Light Direction** if you don't want **Self Shadow** & **ShadowT** to not follow Light Direction and follow other object by script. Useful for anime style faces.

V. Adjust **Outline Offset** if you want to adjust the outline position.
     * For silhouette outline effect, just adjust **Outline Z Position In Camera** option.

W. Image Gallery:
     http://mjq3690.deviantart.com/gallery/61884975/RealToon-Shader-Gallery

X. Video Tutorials:
     https://www.youtube.com/playlist?list=PL0M1m9smMVPJ4qEkJnZObqJE5mU9uz6SY

Y. Video Demo:
     https://www.youtube.com/playlist?list=PL0M1m9smMVPI1XRV_1UL_Vz3IAHkPtQYT

Z. Other Videos
     https://www.youtube.com/playlist?list=PL0M1m9smMVPK_vLCBnJ8qIc3w5WsHrCM5

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https://www.facebook.com/mjqstudioworks/

Twitter:

https://twitter.com/mjqstudioworks

Youtube:

https://www.youtube.com/channel/UC5sHbeOQdyMPV_Ck0kRgJgQ

MJQ Studio Works Unity Publisher Profile (Support Links & Email):

http://u3d.as/vDv

Unity 3D Forum:

https://forum.unity3d.com/threads/realtoon-pc-mobile.414237/

Website:

https://mjqstudioworks.weebly.com/