RealToon

User Guide

(RealToon Shader)

It's a Toon Shader/Cel Shading Shader for Unity3D.

The goal/aim of this shader is to make your characters, objects or environment shading to look as close to anime or cartoon as possible in real-time and fast.

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[Shaders & Modes]

A. Modes:

a. Multi Light

Can use **Point and **Spot** light.*
**Can use many lights.*
You can't change the **Received Shadows color and its strength individually.*
When **Received Shadows turned on, Self Shadow color should be the same as **Received Shadows** color.*

b. Single Light

Can only use one light and that's **Directional Light.*
****Received Shadows** and **Self Shadows** are combined and called **Shadows** but you can still adjust their intensity individually.*
You can change **Received Shadows color.*
You can also change the **Received Shadows strength individually.*

B. Others:

a. Outline

**Shaders with outline.*

b. No Outline

**Shaders without outline.*

c. Double Sided

**Can see the other side of a plane object or face.*

C. Shaders:

a. Default – Default/Normal RealToon Shader
b. Cutout – RealToon Shader with cutout.
c. Fade Transparency (No outline only) - RealToon Shader with fade or smooth transparency.

[How to use RealToon]

A. Default use (Multi Light Mode only):

a. Create a material
b. Select the material you've created and change the shader to RealToon shader you want to use.
c. Drag the material to your object.
d. Select your object and uncheck **Received Shadows** on the component **Mesh Renderer**.

B. Use RealToon with Received Shadows on (Multi Light Mode only):

a. Create a material
b. Select the material you've created and change the shader to RealToon shaders you want to use.
c. Drag the material to your object.
d. Select your object and check "Received Shadows" on the component **Mesh Renderer**.
e. Change **Self Shadow Intensity** to **1.**
f. Change **Self Shadow Color** to **Black.**
g. Adjust the **Self Shadow Size** if needed to hide Receive Shadow weird edge.
h. Adjust **Ambient Intensity** at the **Lighting Panel** to adjust the shadow intensity (**Self Shadow** & **Received Shadows**).
i. Adjust your **Light Source** to balance the light.

[Additional Steps - If you don't want to use ambient light to adjust shadow intensity]

j. Adjust **Self Shadow Intensity**
k. Adjust **Shadow Strength** on your **Light Source.**

[Note/Tips: Change Shadow Type to Soft Shadow and change the Shadow Resolution to low for softer Received Shadows and for high performance].

C. Use RealToon with Received Shadows on, on Single Light Mode:

a. Create a material
b. Select the material you've created and change the shader to RealToon shaders you want to use.
c. Drag the material to your object.
d. That's it =)

[Controls & Functions]

[*"D:"* means Default Values/Settings]

A. Texture Color – Texture and Color of the object.

a. **Texture/Main texture** *(D:No Texture)* **–** Texture of your object.
b. **Color** *(D*: *Gray)* **–** Color of your object.

**Adjust the color to something gray if you want to blend the object to other objects with Unity Standard shader or if it's too bright/over-expose just like other toon shader.*
**Use pure white color if you only use one light and the light intensity is between 1 – 0.*

c. **Transparent** *(D: Unchecked)* **–** Enable texture transparent. (If your texture has transparent/alpha).

B. Cutout (Cutout shader only) – Cutout transparent.

a. **Cutout** *(D: 0)* **-** The amount of cutouts on your texture.
b. **Alpha Base Cutout** *(D: Checked)* **–** When check, it will use transparent/alpha of the texture but if uncheck it will use the color/s of the texture.

C. Transparency (Fade Transparency shader only) – Transparency/Opacity of the object.

a. **Opacity** *(D: 1)* **–** The amount of transparency.

D. Color Adjustment

a. **Saturation** *(D: 1)* **–** The intensity/vibrancy of the colors.
b. **Reduce White** *(D: 0)* **–** Reduce whites/highlights.
c. **Texture Washout** *(D: 0)* **–** Apply washout effect on the main texture.

*****Texture Washout will only affect the main texture.*

E. Outline (Outline Shader only)

a. **Outline Width** *(D: 0.003)* **–** Thickness of the outline.
b. **Outline Noise Intensity** *(D: 0)* **–** Noisiness/Distortion of the outline.
c. **Outline Color** *(D: Black)* **-** Outline Color.
d. **Dynamic Noise Outline** *(D: Unchecked)* **–** Enable moving distorted/noisy outline.

*****If check, noisy outline will move like animated sketch drawing.*

F. Self Lit/Self Illumination – Objects own light/light of its own.

a. Self Lit Intensity *(D: 0)* **–** The amount of its own light.
b. Self Lit Power *(D: 1)* **–** How strong it's light.
c. Self Lit Color *(D: White)* **–** Color of the light.
d. Self Lit Mask *(D: No Texture)* **–** Mask self lit.

**Use pure-strong black & white or texture with alpha/transparent.*

G. Gloss - Glossy effect.

a. Gloss Intensity *(D: 0)* **–** How strong the gloss.

**The reason why you can make the value to high is to maintain the gloss on low light just like anime or cartoon.*

b. Glossiness *(D: 0.5)* **–** How gloss the object is.
c. Gloss Color *(D: White)* **–** Gloss color.
d. Main Texture Color Gloss *(D: Unchecked)* - Use Texture/Main Texture to color gloss.

**If check, it will use the main texture to color instead the color you choose but if uncheck, it will use the picked color.*

e. Soft Gloss *(D: Unchecked)* **–** Soft type gloss.

**if check it will turn the gloss to soft but if uncheck it will turn back to default hard gloss.*

f. Gloss Texture Intensity *(D: 0)* **–** Gloss Texture Intensity/strength.

*******You can blend the Gloss Texture to Normal Gloss by adjusting this.*

g. Gloss Texture *(D: No Texture)* **–** Texture to use as gloss.

(Recommend): *Use pure-strong black & white texture or texture with alpha/transparent and square size.*
** You can also use colored texture but it will automatically turn it to black & white but not strong & pure which is not good.*

h. Self Shadow Mask Gloss Texture (Multi Light Mode) *(D: Unchecked)* **–** Self Shadow mask Gloss Texture.

**Use pure-strong black & white or texture with alpha/transparent.*

i. **Shadow Mask Gloss Texture (Single Light Mode)** *(D: Unchecked)* **–** Shadow mask Gloss Texture.

**Use pure-strong black & white or texture with alpha/transparent.*

j. **Gloss Mask** *(D: No Texture)* **-** Mask gloss.

**Use pure-strong black & white or texture with alpha/transparent.*

H. **Shadow (Single Light Mode only) –** Shadows on the object ***(This combines Self Shadow & Received Shadows.)***

a. **Shadow Intensity** *(D: 1)* **–** Shadow intensity/strength.
b. **Shadow Color** *(D: Black)* **–** Shadow Color.
c. **Main Texture Color Shadow** *(D: Unchecked)* **–** Use Texture/Main Texture to color shadow.

**If check, it will use the main texture to color instead the color you choose but if uncheck, it will use the default picked color.*

d. **Receive Shadow Intensity** *(D: 1)* **–** Receive Shadow intensity/strength.
e. **Shadow PTexture Intensity** *(D: 0)* **–** PTexture Intensity/strength.
f. **Shadow PTexture** *(D: No Texture)* **–** Texture to use as shadow.

*******PTextures/Pattern Texture, use for turning colored shadow to pattern style shadow like manga "Half Tone" or any texture with/without alpha/transparent.*
You can also color the texture by adjusting the ***Shadow PTexture Intensity****, blending* ***Self Shadow Color*** *and* ***PTexture****.*

I. **Self Shadow –** Object's own shadow

a. **Self Shadow Intensity** *(D: 1)* **-** Self Shadow intensity/strength.
b. **Self Shadow Size** *(D: 0.56)* **–** The amount of self shadow on the object.
c. **Self Shadow Hardness** *(D: 1)* **–** Self shadow hard edge or soft.
d. **Self Shadow Color (Multi Light Mode only)** *(D: Black)* **–** Self shadow color.
e. **Main Texture Color Self Shadow (Multi Light Mode only)** *(D: Unchecked)* **-** Use Texture/Main Texture to color self shadow.

**If check, it will use the main texture to color instead the color you choose but if uncheck, it will use the default picked color.*

f. **Self Shadow at View Direction** *(D: Unchecked)* **–** Self shadow use your view direction.

***If check, self shadow use your view direction, if uncheck it will use the default light direction.*

g. **Self Shadow PTexture Intensity (Multi Light Mode only)** *(D: 0)* **-** PTexture Intensity/strength.

h. **Self Shadow PTexture (Multi Light Mode only)** *(D: No Texture)* **-** Texture to use as self shadow.

***PTextures/Pattern Texture, use for turning colored shadow to pattern style shadow like manga "Half Tone" or any texture with/without alpha/transparent.*
*You can also color the texture by adjusting the **Self Shadow PTexture Intensity**, blending **Self Shadow Color** and **PTexture**.*

J. AO – Ambient Occlusion. (Not Realtime, Uses Texture/2D Texture)

a. **AO Intensity** *(D: 0)* **–** AO intensity/strength.
b. **AO Texture** *(D: No Texture)* **–** AO in texture.

***(Recommend):** Use pure-strong black & white or texture with alpha/transparent.*
**You can also use colored texture but it will automatically turn it to black & white but not strong & pure which is not good.*

c. **Main Texture Color AO** *(D: Unchecked)* **-** Use Texture/Main Texture to color AO.

**If check, it will use the texture to color instead the color you choose but if uncheck, it use the default picked color.*

d. **Show AO on Light** *(D: Unchecked)* **–** AO visible on light/light source.
e. **Show AO on Ambient light** *(D: Checked)* **-** AO visible on Ambient Light.

***(Note):** As default AO visible on shadow/self shadow when there's light/light source just like amine/cartoon.*
You can't make AO invisible on shadow.
*If you want to make it visible to light, just check the **Show AO on Light**.*

K. Lighting (Multi Light Mode only) – Light on the object.

a. Enable Light Falloff *(D: Checked)* **–** Enable Point/Spot light falloff.

**If uncheck it will turn light falloff of these two lights into not smooth light fade just like cartoon.*

L. FReflection – Fake Reflection **(Not Real-time, Not Cube map, Uses Texture/2D Texture).**

a. FReflection Intensity *(D: 0)* **-** FReflection intensity/strength.
b. FReflection/FReflection Texture *(D: No Texture)* **–** Texture to use as reflection.

**Use square/equal sides size texture.*
Be sure to use the Tilling & Offset to adjust its position and size.

c. Mask FReflection *(D: No Texture)* **–** Mask FReflection.

**Use pure-strong black & white or texture with alpha/transparent.*

M. Fresnel – Fresnel Effect. **(Edge shine effect)**

a. Fresnel Intensity *(D: 0)* **-** Fresnel intensity/strength.
b. Fresnel Color *(D: White)* **-** Fresnel Color.
c. Fresnel Fill *(D: 1)* **–** The amount of Fresnel on the object. (Amount of glow)
d. Hard Edge Fresnel *(D: Unchecked)* **–** Turn Fresnel into hard edge Fresnel.
e. Fresnel Visible on Dark/Ambient Light *(D: Unchecked)* **–** Fresnel visible on dark/no light and on ambient light.
f. Fresnel On Light *(D: Unchecked)* **-** Fresnel visible on light.
g. Fresnel On Self Shadow (Multi Light Mode only) *(D: Unchecked)* **-** Fresnel visible on light.
h. Fresnel On Shadow (Single Light Mode only) *(D: Unchecked)* **-** Fresnel visible on light.

(Note): *If you enable both* ***Fresnel On Light*** *&* ***Fresnel On Self Shadow,*** *Fresnel will be invisible/not visible.*

[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 know how to access shader properties by code, just go to unity3d manual script.

B. Use **No Outline** - **RealToon** shaders if your object/s don't need outline or if you don't want to use outline and want less draw calls.

C. Use **RealToon Double Sided** shaders if you want to see the other side/face of a plane object like Grass, Signs, Anime/Toon Hair or Cloth, etc.

D. You can use **Fresnel** as rim light for anime or toon looks.
Just enable **Fresnel Hard Edge** and adjust **Fresnel Fill**.

E. If you want a manga/comics looks, just set the color saturation to 0 or make your texture black and white, change **Self Shadow Color** to black and use **PTexture**.

F. **Fade Transparency** doesn't receive shadows and don't have outline for some reason.

G. Make your normal map smooth for better shading details.

H. For better anime/toon shadow/shading, adjust/edit the Vertex Normal of your model by editing it to your 3d modeling software.

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

J. For video tutorials and info, click this link :
https://www.youtube.com/playlist?list=PL0M1m9smMVPK_vLCBnJ8qIc3w5WsHrCM5.

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http://u3d.as/vDv

Unity 3D Forum:
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