Modular Bullpup Assault Rifle

Modular Bullpup Assault Rifle with interchangeable parts

Content

1. Blueprint
2. Add, combine, change automatic elements
3. Materials
4. Dirt, Damage and Wear parameters
5. Animations
6. LODs
7. Technical Details

Blueprint

The pack contains 2 skeletal meshes and 14 static mesh elements. In the folder ProjectAAA/FieldRifle/Blueprints, there is assembled blueprint named "BP_FieldRIfle_MF" of the ready-made weapon.

Add, combine, change automatic elements

Modules are added to sockets in the BP_FieldRifle_MF at zero positions. To add a module, drag the mesh of the selected element into the parent socket and ensure that its Position and Rotation are set to zero and scale is set to 1. Transform of the Sockets should not be changed.

Blueprint with sockets is located in the folder ProjectAAA/FieldRifle/Blueprints.

Skeletal meshes with sockets are located in the folder

ProjectAAA/FieldRifle/SkeletalMesh

Static meshes with sockets are located in the folder

ProjectAAA/FieldRifle/StaticMeshes

SK_FieldRifle_Reciever contains:

Socket_Charging_Handle

Socket_GasPiston

Socket_Magazine

Socket_Cartridge

Socket_Casing

Socket_Barrel

Socket_Upper

Socket_ButtPad

Socket_Grip

Socket_BackGrip

Socket_Handguard

SK_FieldRifle_Upper contains:

Socket_Carry_Handle

Socket_CheekPad

SM_FieldRifle_Barrel contains:

Socket_GasBlock

Socket_FlashHider

SM_FieldRifle_GasBlock contains:

Socket_FrontSight

Materials

To change the part color of the model select the necessary material instance and adjust it using the components in the material instance.
Enable_Color_... components control if part color is changed.

Color… component controls the selection of color to which the part color is changed.
Color_tone… component controls the tone of the changed color.

Dirt, Damage and Wear parameters

Dirt damage and wear parameters can be changed in “PA_FieldRifle” located in the folder ProjectAAA/FieldRifle/Materials

WoodDamageLevel component controls the level of damage to wooden parts.
WoodDamageContrast and WoodWearContrast components control the contrast of the mask on the wooden part of the materials.
WoodWearLevel component controls the level of wear on wooden parts.
WoodNormalIntensity component controls the intensity level of the normal map.

MetalDamageLevel component controls the level of damage to metal parts.
MetalDamageContrast and MetalWearContrast components control the contrast of the mask on the metal part of the materials.
MetalWearLevel component controls the level of wear on metal parts.
MetalNormalIntensity component controls the intensity level of the normal map.

PlasticDamageLevel component controls the level of damage to plastic parts.
PlasticDamageContrast and PlasticWearContrast components control the contrast of the mask on the wooden part of the materials.
PlasticWearLevel component controls the level of wear on plastic parts.

DirtLevel component controls the level of dirt.
DirtContrast component controls the level of dirt contrast.
DirtNormalIntensity component controls the intensity level of the normal map.

Animations

Each skeletal mesh is assigned an animation.

SK_FieldRifle_Reciever:

AS_FieldRifle_Reciever_AutoShot: Automatic shooting animation.

AS_FieldRifle_Reciever_BoltLock_Auto: Bolt lock in automatic shooting mode animation.

AS_FieldRifle_Reciever_BoltLock_idle_Auto: Bolt lock idle animation in automatic mode.

AS_FieldRifle_Reciever_BoltLock_OneShot: Bolt lock animation in single fire mode.

AS_FieldRifle_Reciever_BoltRelease_Auto: Bolt release animation in automatic fire mode.

AS_FieldRifle_Reciever_BoltRelease_Single: Bolt release animation in single fire mode.

AS_FieldRifle_Reciever_Charging_Auto: Manual chambering animation in automatic fire mode.

AS_FieldRifle_Reciever_Charging_Single: Manual chambering animation in single fire mode.

AS_FieldRifle_Reciever_FireSelect_Auto: Automatic firing mode selection animation.

AS_FieldRifle_Reciever_FireSelect_Single: Single fire mode selection animation

AS_FieldRifle_Reciever_Idle: Idle animation in single fire mode.

AS_FieldRifle_Reciever_Idle_Auto: Idle animation in automatic fire mode.

AS_FieldRifle_Reciever_Idle_Safe_Auto: Idle animation with safety on in automatic fire mode.

AS_FieldRifle_Reciever_Idle_Safe_Single: Idle animation with safety on in single fire mode.

AS_FieldRifle_Reciever_OneShot: Single shot animation.

AS_FieldRifle_Reciever_Reload_Auto: Reloading animation in automatic firing mode.

AS_FieldRifle_Reciever_Reload_BoltLock_Auto: Reloading animation with the bolt locked in automatic firing mode.

AS_FieldRifle_Reciever_Reload_BoltLock_Single: Reloading animation with the bolt locked in single firing mode.

AS_FieldRifle_Reciever_Reload_Single: Reloading animation in single fire mode.

AS_FieldRifle_Reciever_SafetyOff_Auto: Turning off safety in automatic firing mode.

AS_FieldRifle_Reciever_SafetyOff_Single: Turning off safety in single firing mode.
AS_FieldRifle_Reciever_SafetyOn_Auto: Turning on safety in automatic firing mode.
AS_FieldRifle_Reciever_SafetyOn_Single: Turning on safety in single firing mode.

SK_FieldRifle_Upper:
AS_FieldRifle_Upper_DustCover_Close: Closing of dust cover animation.
AS_FieldRifle_Upper_DustCover_Idle_Open: Idle animation of the opened dust cover.
AS_FieldRifle_Upper_DustCover_ShotOpen: Animation of dust cover opening.
AS_FiledRifle_Upper_DustCover_Idle_Closed: Idle animation of closed dust cover.
These animations are necessary for creating custom animations

LODs

Each mesh has 4 LODs:
LOD0
LOD1
LOD2
LOD3

Technical Details

Number of Unique Meshes - 15

LOD 0:
Vertices - 22.224
Faces - 42.871
Triangles - 42.871

LOD 1:

Vertices - 16.379
Faces - 31.590
Triangles - 31.593

LOD 2:
Vertices - 7.861
Faces - 15.281
Triangles - 15.281

LOD 3:
Vertices - 1.988
Faces - 3.757
Triangles - 3.757

Skeletal meshes: 2
Static meshes: 14
Material instances - 15
Material parameter collection - 1

Texture resolutions:
4096x2048 - 23
2048x2048 - 5
2048x1024 - 15
1130x1130 - 1
1024x1024 - 5
512x512 - 13
256x256 - 3

Number of Textures - 66
ORM textures - 12
Material Masks - 6

Grunge Masks - 12
Color Masks - 9

Materials are created from the following texture maps:

BaseColor - RGB map - is responsible for the color of the mesh.
NormalMap - RGB normal map.
ORM - RGB map - is responsible for several parameters:
Channel R-Metallic
Channel G - Ambient Occlusion

GrungeMask - RGB map - is responsible for overlaying variable parameters:
Channel R - damage map.
Channel G - wear map.
Channel B - dirt map.
ColorMask - RGB map - responsible for overlaying color parameters.