In order to accommodate customers' need to track the progress of a RazorGage cutting station, we have developed the Single Cutlist Mode for AutoList. In our traditional AutoList software, the operator opens a file, cuts some or all of the parts in the list, and closes the file. He may then open that same file again or move on to another file. In single cut list mode Autolist works from one database which is synchronized with another database on the server, perhaps belonging to an ERP or MRP package that tracks progress of various processes throughout the manufacturing plant. When the operator presses the AutoList button from the MAIN SCREEN, the AutoList database is automatically synchronized with the upstream file eliminating the need for the operator to open a file. On an interval determined in the AutoList settings, the software periodically synchronizes with the upstream database. Specifically, the AutoList software disconnects from its local database, runs a custom third party executable file which synchronizes the two databases, and then reconnects to the local database when the executable file wraps up. Other than the synchronization, AutoList runs exactly the same as it always has. The operator can control how the parts are sorted into groups with our powerful grouping feature. Labels can be printed complete with text, bar codes, images, and QR codes. And of course the optimization features that are the heart of Autolist are still available.

The executable file mentioned above is a custom program that can be written by anyone in any language that will run on Windows 10 Pro. Its job is to connect to the Autolist database and update it with any new parts, remove any deleted parts and to report back to the upstream database any changes to the quantities that have been made since the last update. Typically this file is communicating with an API. The reason we do it this way is so that the RazorGage software doesn't have to be customized for a given software package. Instead, just the executable is custom.

The following pages show how easy it is to set up the RazorGage AutoList Single Cutlis Mode for Stratus.
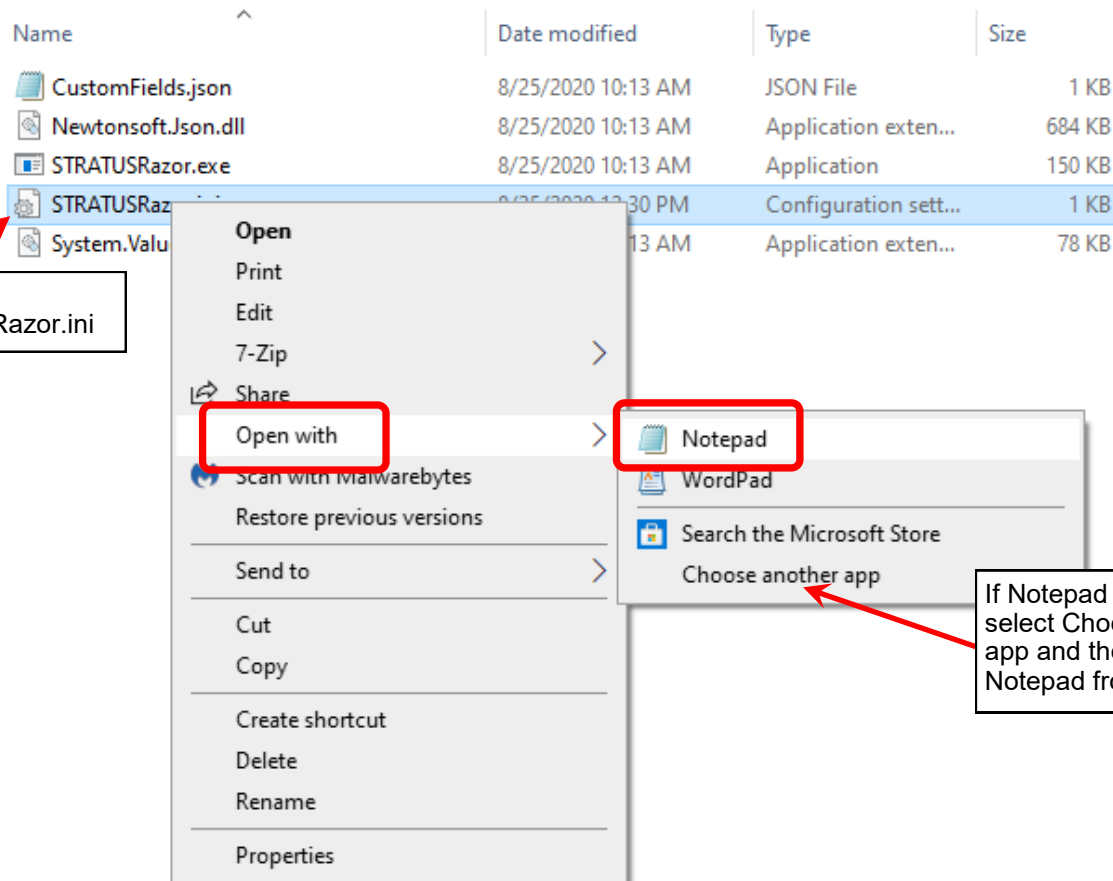
RazorGage
POSITIONERS • SOFTWARE • SYSTEMS

Stratus to RazorGage Setup

Step 1 — RazorGage will have provided a zipped folder named STRATUSRazor.zip. Copy that folder to the RazorGage PC and extract the contents to: C:\STRATUSRazor

Step 2 — The folder will have the files shown below. Right click on the file named STRATUSRazor.ini, select Open With, and choose Notepad.

Name	Date modified	Type	Size
CustomFields.json	8/25/2020 10:13 AM	JSON File	1 KB
Newtonsoft.Json.dll	8/25/2020 10:13 AM	Application exten...	684 KB
STRATUSRazor.exe	8/25/2020 10:13 AM	Application	150 KB
STRATUSRaz...ini	8/25/2020 12:30 PM	Configuration sett...	1 KB
System.Valu...	...13 AM	Application exten...	78 KB

Right-Click STRATUSRazor.ini

Open
Print
Edit
7-Zip
Share
Open with
Scan with Malwarebytes
Restore previous versions
Send to
Cut
Copy
Create shortcut
Delete
Rename
Properties

Notepad
WordPad
Search the Microsoft Store
Choose another app

If Notepad isn't listed, select Choose another app and then choose Notepad from that list.

Step 3 — In the STRATUSRazor.ini file enter your API Key & Stratus's tool name for this RazorGage. By default STRATUSRazor will assign cut parts the status 'Cut' in Stratus. You may change this if you wish. It's important to note that the tool name and status must match the corresponding Stratus parameters exactly. Save and close the file when you have finished editing.

*STRATUSRazor.ini - Notepad

File   Edit   Format   View   Help

Enter your API key here.

```
[parameters]
key=zxxxxyyy-zyyy-xxxx-czzz-zzzzxxxxyyyy
tool=RazorGage
database=C:\PositionerRunTimeFiles\RGST\RGParts.mdb
status=Cut
```

This is the Stratus name for this RazorGage. Retrieve the name from Stratus.

After parts are cut they will be assigned this status in Stratus.

Step 4 Open the RGST software on your RazorGage. Click AUTOLIST / SETTINGS / SINGLE CUTLIST MODE. The screen should look like this:

Step 5 Check ENABLE SINGLE CUTLIST MODE.

Single Cutlist Mode Settings

ENABLE SINGLE CUTLIST MODE ☐

Cancel

Save The Changes

If Optimizing in Stop or Pusher Mode, then Sync AFTER x number of "Runs".
If NOT Optimizing in Stop Mode, then Sync AFTER x number of "Parts Cut".

Runs/Parts
1 ▼

Step 6 Define the frequency with which synchronization will occur.

RazorGage Parts File is located in: C:\PositionerRunTimeFiles\RGST_v7.15.00\RGParts.mdb

Cleanup: Delete oldest parts that have a quantity of zero when file exceeds 800 ▼ parts.

Click in this box to set path to executable Sync File.

FILE NOT FOUND.
C:\STRATUSRazor\STRATUSRazor.exe

The path to the Error Log file is the same as the Sync file. The Error Log filename may be edited in the Config.ini file.
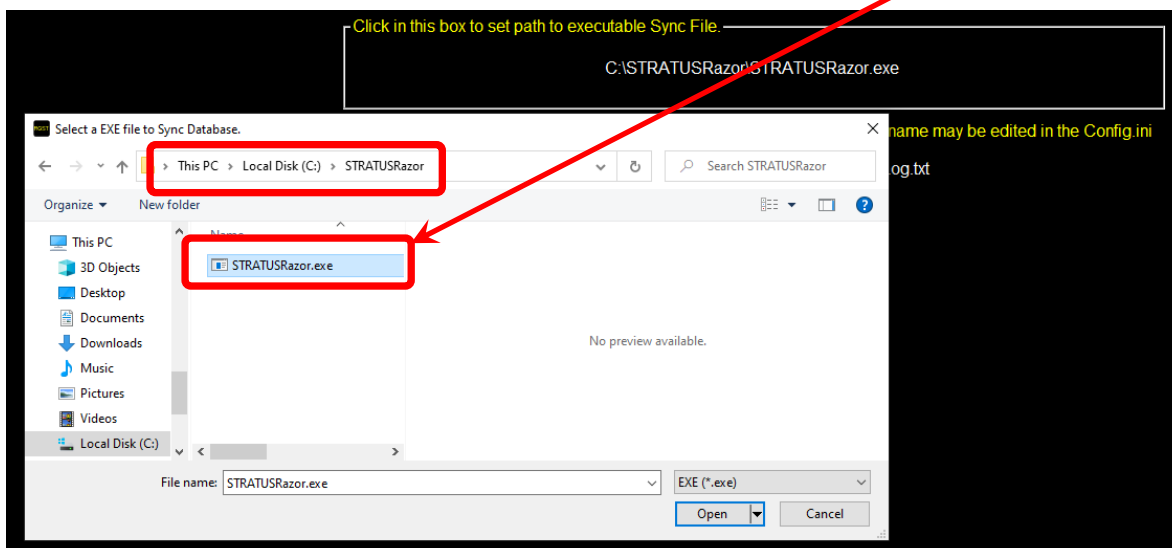Error Log Filename is currently set to: ErrorLog.txt

Step 7 If it isn't already defined as such, click in this box & browse to C:\STRATUSRazor and select STRATUSRazor.exe.

Click in this box to set path to executable Sync File.
C:\STRATUSRazor\STRATUSRazor.exe

Select a EXE file to Sync Database.

This PC > Local Disk (C:) > STRATUSRazor

Search STRATUSRazor

Organize ▼   New folder

This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)

Name
STRATUSRazor.exe

No preview available.

File name: STRATUSRazor.exe
EXE (*.exe)
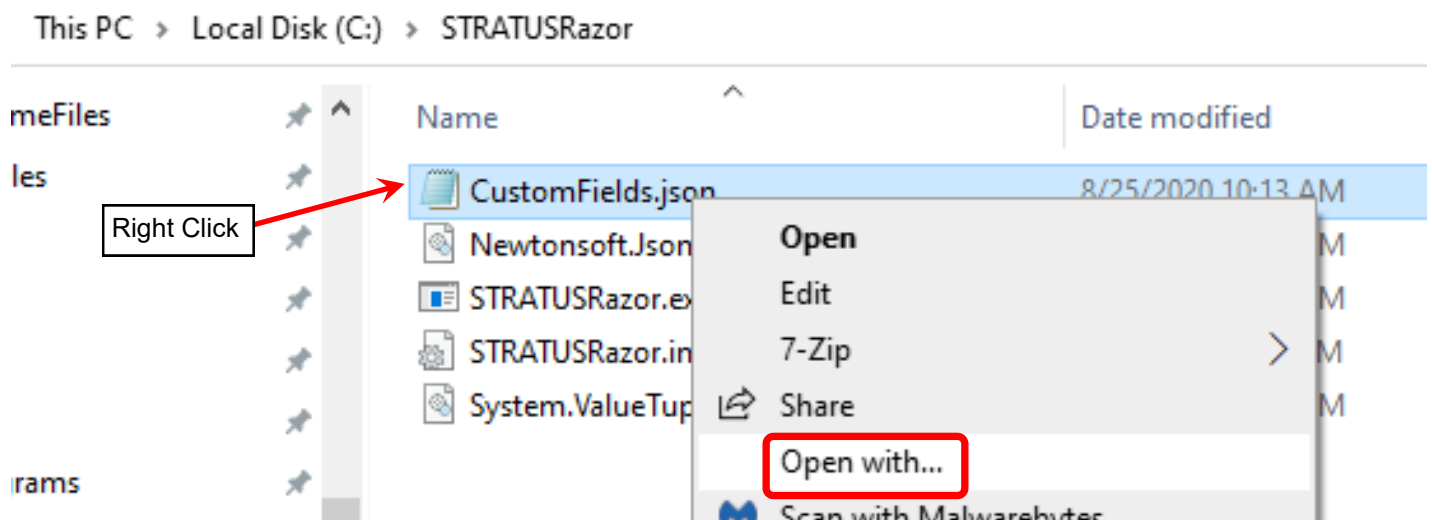Open   Cancel

Step 8

Click SAVE THE CHANGES.

Step 9 The last step is optional. By default, STRATUSRazor synchronizes the following Stratus fields:

RDB Field	RDB Display Label	Stratus Field
SEQ_NUM	SEQ_NUM	N/A
QUANTITY	QUANTITY	Always 1 - N/A
PART	PART	STRATUS: envelope.PartDescription
MATERIAL	MATERIAL	STRATUS: envelope.Material
WIDTH	WIDTH	STRATUS: part.properties["Width"]
LENGTH	LENGTH	STRATUS: envelope.Length
THICKNESS	THICKNESS	STRATUS: part.properties["Depth"]
UF_1	SERVICE	STRATUS: part.gtpproperties["Service"]
UF_2	LEVEL	STRATUS: envelope.level
UF_3	ASSEMBLY NAME	STRATUS: envelope.AssemblyName (corresponds to assembly.Name)
UF_4	MODEL NAME	STRATUS:envelope.ModelName (corresponds to Model.Name)
UF_5	CADID	STRATUS:envelope.CadId (corresponds to Part.CadId)
UF_6	SOURCE	Always "STRATUS"
UF_7	DATE LOCALTIME	Local time of RazorGage PC
UF_8	QRCODE	STRATUS:part.qrCodeUrl
UF_9	SIZE	STRATUS:part.gtpproperty["Size"]
UF_10	DIAMETER	STRATUS:part.property["Diameter"]
UF_11	JOB NUM	STRATUS:envelope.ProjectNumber (corresponds to Project.Number)
UF_12	JOB NAME	STRATUS:envelope.ProjectName (CORRESPONDS TO Project.Name)
UF_13	ITEM NUM	STRATUS:envelope.ItemNumber (corresponds to)

You may add 7 more fields from Stratus. Here's how:

9a On the RazorGage PC use Windows File Explorer to navigate to C:\STRATUSRazor.

9b Open CustomFields.json by right clicking and selecting 'Open with…'. Then choose more apps and select Notepad.

You will see a file that looks similar to the one shown below. The pink highlighted area shows the text required to access one field in stratus. To add more, fields follow the instructions that follow.

*CustomFields.json - Notepad

File   Edit   Format   View   Help

```
{
  "Fields": [
    {
      "Display": "AREA",
      "StratusName": "Area",
      "gtp": true,
      "notes": "Shows a zero"
    },
    {
      "Display": "SPOOL NUM",
      "StratusName": "Spool",
      "gtp": true,
      "notes": "(mine is blank, I don't use spool numbers)"
    },
    {
      "Display": "SIZE",
      "StratusName": "Size",
      "gtp": true,
      "notes": "Added for sake of hanger size, shows B3100 - Clevis Hanger [10] -- I don't thir
    },
    {
      "Display": "TYPE",
      "StratusName": "type",
      "gtp": false,
      "notes": "Originally added to hold the hanger type, shows Clevis Hanger"
    }
  ]
}
```

9c To add a new field, select the last entry exactly by highlighting the text exactly as shown and copy to the Windows clipboard by using ctrl-c or right click and COPY.

9d Next place the cursor here and click once to unselect previously selected text. Paste by using ctrl-v or right click and PASTE. You will see a new entry like the one at right.

```
      gtp . .u. .,
      "notes": "Originally added to hold the hanger type, shows Clevis Hanger"
    },
    {
      "Display": "TYPE",
      "StratusName": "type",
      "gtp": false,
      "notes": "Originally added to hold the hanger type, shows Clevis Hanger"
    }
  ]
}
```
------ Newly pasted text ------

9e Modify the new text as desired by referencing information below.

The "StratusName" parameter defines the Stratus parameter that will be retrieved. Modify between the quotes as desired.

The "Display" parameter defines the name with which the new field will be displayed in Autolist. Modify between the quotes as desired.

```
gtp : false,
    "notes": "Originally added to hold the hanger type, shows Clevis Hanger"
  },
  {
    "Display": "TYPE",
    "StratusName": "type",
    "gtp": false
    "notes": "Originally added to hold the hanger type, shows Clevis Hanger"
  }
]
```

Newly pasted text

Put your comments here.

Within Stratus there are two sets of properties: Part.Properties & Part.GtpProperties.

If the "gtp" field is set to "false", STRATUSRazor will look for the field in Part.Properties.

If the "gtp" field is set to "true", STRATUSRazor will look for the field in Part.GtpProperties.

Each field you get from STRATUS can be configured as follows inside CustomFields.json:

```
"Fields":[
{
    "Display": "RAZOR GAGE DB FIELD NAME",
    "StratusName": "Name as it appears in STRATUS",
    "gtp": true,                        // Order of preference of looking up properties -- not an important field.
    "decimals": 2,                      // optional. -1 means no decimal limits. if 2, then 9.2387 is printed 9.23
    "len": 20,                          // optional. String limit on printing field. -1 means no limit
    "notes": "Place any notes in here you wish."
}
]
```

In version 19 of our bridge between STRATUS and RazorGage, there is now a "decimals" indicator that lets the user specify how many decimals to save in the RazorDB for a given field.

In the case of the LENGTH field, which is not technically a custom field, we can still specify the number of decimals available with this entry:

```
"Fields":[
{
    "Display": "LENGTH",
    "decimals": 3
}
]
```

For a more user friendly method of setting up the fields, purchase the optional Stratus to RazorGage Configuration and Tester utility. Contact Steve Rives of MEP KS at 913-490-6530 for information and pricing.

IMPORTANT - The following section shows the Stratus fields currently supported by the RazorGage Stratus synchronization tool. If you want to access fields not on the list let us know and we'll quote that functionality.

Not all the data that is available in your STRATUS model is currently available for a RazorGage to use. The integration between STRATUS and RazorGage is ongoing, and this document tracks the fields that are currently available to RazorGage from STRATUS, and fields that are not available.

Of special note of fields not available in the RazorGage, are the part properties in STRATUS that start with the name, "STRATUS." But more generally speaking, the list of available and unavailable fields is represented in this first table:

General table of STRATUS fields as supported (or not currently supported) by RazorGage

STRATUS Area	Supported in RazorGage?
Assembly	Yes
Attachment	No
Company	No
Container	No
Model	No
Package	Yes
Part	Yes
Part Properties	Yes
STRATUS Part Properties	No
Project	Yes
QRCode	Yes
Task	No
Tool	No
Tool Message Data	Yes
Tool CutList Data	Yes
TrackingLog	No
User	No

The details on these major areas are broken out into more specific fields below. The order of presentation of specific areas follows the order of the general table.

Assembly Fields in STRATUS available to RazorGage

Name	Sample Value	
Assembly.id	3c3c4f85-1c04-4e21-981e-23b27e5f03d3	
Assembly.createdDT	2020-01-02T170411.125Z	
Assembly.modifiedDT	2020-01-02T170415.328Z	
Assembly.projectId	337f8294-bd01-4fc2-8759-3485cdf00425	
Assembly.modelId	ea3207b7-f6d8-419e-8fde-ab0392683e24	
Assembly.cadId	6b205b37-3f7c-44a4-b068-295e1a283c2a	
Assembly.sheetId		
Assembly.viewId	Model-3D	
Assembly.currentTrackingStatusId	d8981a51-c8ee-421a-bcb2-ee93229388cf	
Assembly.assemblyTypeLabel	Spool	
Assembly.name	HWS—0002	
Assembly.nameLabel	HWS—0002	
Assembly.instanceIndex		
Assembly.lastUsedAssembliesPartsTableReportId		
Assembly.qrCodeUrl	http://gtp.one/nUoiZAb3	

Package Data in STRATUS available to RazorGage

Name in STRATUS	Sample Value
Package.id	0710bb45-d70d-4163-bddb-43695b13f7f3
Package.createdDT	1/2/2020 5:03:14 PM
Package.createdBy	Jonathan Umscheid
Package.modifiedDT	5/2/2020 1:53:21 AM
Package.modifiedBy	
Package.name	1234-FAB-MPF—0002
Package.number	1234-2020-0002
Package.description	
Package.requiredDT	1/30/2020 5:00:00 AM
Package.startDT	
Package.projectId	337f8294-bd01-4fc2-8759-3485cdf00425
Package.modelId	ea3207b7-f6d8-419e-8fde-ab0392683e24
Package.categoryId	a3dbcc3f-23f4-4506-a378-9b8d4936ae0a
Package.currentTrackingStatusId	d8981a51-c8ee-421a-bcb2-ee93229388cf
Package.hoursEstimated	0
Package.qrCodeUrl	http://gtp.one/LpTI16FT
Package.status	0
Package.statusName	Active

Part Fields in STRATUS available to RazorGage

Name	Sample Value
Part.modelId	ea3207b7-f6d8-419e-8fde-ab0392683e24
Part.cadId	B9B
Part.cadType	Autodesk.Fabrication.Item
Part.webId	1163
Part.description	2 (6)
Part.bimAreaId	
Part.bimArea	
Part.propertyDefinitionsPublished	False
Part.cutLengthAdjustment	0
Part.cutLength2Adjustment	0
Part.lockLength	
Part.lockLocation	
Part.qrCodeUrl	http://gtp.one/siM5Ooyt
Part.patternNumber	2041
Part.modifiedAssembly	False
Part.partType	0
Part.systemType	0
Part.id	1fb82081-b390-4a89-abd9-b9376f80d0c8
Part.createdDT	1/2/2020 4:54 PM
Part.createdById	
Part.modifiedDT	1/2/2020 5:24 PM
Part.modifiedById	

Sample Part Properties in STRATUS available to the RazorGage

Part properties are visible in STRATUS when you click on a part and go to the properties page. Following is a list of sample part properties based on one part in a particular model. Depending on how a company publishes their model out of Revit into STRATUS, the particular part properties will be different for each client. The part properties are not the same for every company. *However, the part properties that all companies do NOT have access to, are the ones that start with "STRATUS."*

Name in STRATUS from Revit	Sample Value
Allow Multiple Straights	Yes
Area Adjust (%)	0.000
C1	Grooved End
C2	Bevel End 37.5
CID	2041
D1	None
D2	None
Diameter	6
Diameter Type	Nominal
Elevation	4492.3814, 4482.7564
End Size(s)	Grooved End 6, Bevel End 37.5 6,

First Break	0.000
Insulate To Nodes	No
Insulation Material	Piping Insulation
Insulation Material Abbreviation	
Insulation Material Gauge	1.5
Insulation Specification	UMC2 Heating Water - Low Temp
Insulation Specification Abbreviation	
Left Extension	0
Length	42.5087
Length Adjust	0.000
Length/Angle	42.5087499999936
Lengths Include Connector Adjust	No
Level	Level 01: 362'-1\"
Notes	
Order	CS Pipe
PackageName	
PatternNumber	2041
Pipe Length	(inch)
Pipe Parts	1
Points	ENDPOINTS: -7565.23,421.03,4487.57;-7522.72,421.03,4487.57;
QRCode	
Right Extension	0
S1	None
Seam Position	0.000
Second Break	0.000
Specification	Piping Materials
STD Straight	No
Third Break	0.000"
Alternate	0
Area	1.7344
BoughtOut	True
C1EndType	PL
C2EndType	PL
Code	101NW4117F
CutType	Pipework
Description	2 (6)
Drawing	Mechanical Piping.dwg
EquipmentTag	
Fabrication Area	6.14
Fabrication Body Area	6.14
Fabrication CL Length	3.54
Fabrication Cost	0.00
Fabrication Hours	0.00
Fabrication Insulation Area	6.59
Fabrication Insulation Material Gauge	Piping Insulation x 1.500

Fabrication Skin Area	0.00
Fabrication UniqueId	7b07e52e-3a03-49f2-c2c2-b26e26607ab0
Installation Cost	0.00
Installation Hours	0.00
IsStraight	True
Length	42.5087
Manufacturer	
Material	Sch 40 Carbon Steel
Material Costs	0.00
MaterialGauge	
MaterialThickness	
Name	6
Number	2
Order	
Pallet	
Phase	
Product Description	
Product Discount	
Product Finish	
Product Group	
Product Install Type	
Product Material	
Product Name	
Product Range	
Product Size	
Product Source Description	
Product Specification	
Product Status	
Product Supplier	
RequestQuantity	42.5087
Section	Level 01: 362'-1\"
Service	02 - Heating Water Supply (CU L Press x A53 BW)
ServiceAbbreviation	HWS
ServiceType	Pipework
Size	A53B - Sch 40 - ERW - PE [6]
Source	A53B - Sch 40 - ERW - PE
Spool	
Status	Draw Rev 2
Total Cost	0.00
Weight	67.1992
Zone	

Project Data in STRATUS available to RazorGage

Name in STRATUS
Project.id
Project.createdDT
Project.modifiedDT
Project.status
Project.statusName
Project.a360Id
Project.a360RootFolderId
Project.fileShareId
Project.companyId
Project.category
Project.number
Project.name
Project.phase
Project.description
Project.imageAttachmentId
Project.address1
Project.address2
Project.city
Project.state
Project.zip
Project.targetStartDate
Project.actualStartDate
Project.targetEndDate
Project.actualEndDate
Project.color
Project.isTaxExempt

QRCode Fields in STRATUS available to RazorGage

Name	Sample Value
QRCode.valid	True
QRCode.stopScanning	False
QRCode.url	/qr/part-scan?projectId=337f8294-bd01-4fc2-8759-3485cdf00425&modelId=ea3207b7-f6d8-419e-8fde-ab0392683e24&partId=1fb82081-b390-4a89-abd9-b9376f80d0c8
QRCode.id	siM5Ooyt
QRCode.qrScannedText	
QRCode.type	
QRCode.createdById	b4369605-7283-4bc8-b90b-93c788cef1d7
QRCode.projectId	337f8294-bd01-4fc2-8759-3485cdf00425
QRCode.modelId	ea3207b7-f6d8-419e-8fde-ab0392683e24
QRCode.assemblyId	
QRCode.partId	1fb82081-b390-4a89-abd9-b9376f80d0c8
QRCode.packageId	
QRCode.cadId	
QRCode.containerId	
QRCode.redirectURL	
QRCode.serverDetails	

Tool Message Data from STRATUS as Queued for the RazorGage

When a user sends a cut list down from STRATUS to a RazorGage, the cut list is queued on the STRATUS side with the following information (which is available to the RazorGage program for use):

Name in STRATUS	Sample Value
Queue.id	b0ed1276-e730-42c4-9b22-0e01465686df
Queue.createdDT	2021-02-16T05 29 42.309Z
Queue.modifiedDT	
Queue.projectId	337f8294-bd01-4fc2-8759-3485cdf00425
Queue.modelId	ea3207b7-f6d8-419e-8fde-ab0392683e24
Queue.toolType	1
Queue.toolTypeName	Cut List
Queue.toolName	RazorGage
Queue.toolId	d26223e3-3819-47dd-b5e1-f804f601e030
Queue.messageType	CutItemMessage

Tool Cut List data in STRATUS available to RazorGage

Name in STRATUS	Sample Value
Message.AssemblyId	3c3c4f85-1c04-4e21-981e-23b27e5f03d3
Message.AssemblyName	HWS—0002
Message.CadId	B9B
Message.Fitting1	Long Radius 90 [6]
Message.Fitting2	
Message.ItemNumber	2
Message.LengthInFeetAndInches	3' 6-1/2
Message.Level	Level 01 362'-1
Message.Material	Sch 40 Carbon Steel
Message.ModelId	ea3207b7-f6d8-419e-8fde-ab0392683e24
Message.ModelName	Mechanical Piping
Message.OrderId	0710bb45-d70d-4163-bddb-43695b13f7f3
Message.Ordeame	
Message.PartDescription	A53B - Sch 40 - ERW - PE [6]
Message.ProjectId	337f8294-bd01-4fc2-8759-3485cdf00425
Message.ProjectName	Test
Message.ProjectNumber	1234
Message.Size	A53B - Sch 40 - ERW - PE [6]
Message.UserDisplayName	Steve Rives
Message.CreatedDateTimeUtc	2021-02-16T05:29:42.3091935Z