LDC

Global Edge® Integrated Manufacturing

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Demonstration Guide

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Transforming Engineering & Manufacturing ...

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Global Edge Integrated Manufacturing (Software Modules)

Global Edge® Integrated Manufacturing is an automated workflow system that provides capabilities to automate the quoting, engineering, and manufacturing workflow process. *Global Edge® Integrated Manufacturing* includes the following integrated software modules:

- **Base System / Engineering Assistant Module**
- **SolidWorks CAD Interface Module**
- **ERP / MES Interface Module**
- **Outlook Interface Module**
- **Integrated Shop Floor Module**
- **Integrated Financials Module**

Global Edge® Integrated Manufacturing — **Base System Module**	The *Base System Module* includes the following: - **Windows 11 or Red Hat Linux Version** - **Informix IDS - 14.x Database Express** - **Includes Engineering Assistant Module** - **System / Security Management**
Global Edge® Integrated Manufacturing — **Engineering Assistant Module**	The *Engineering Assistant Module* includes the following: - **Bill of Materials / Engineering Management** - **Automated Quoting / CRM** - **Manufacturability Testing** - **Automated Product Configuration / Routing Generation**
Global Edge® Integrated Manufacturing — **SolidWorks CAD Interface Module**	The *SolidWorks CAD Interface Module* includes the following: - **Automated Sheet Metal Batch Unfolding** - **Automated Production Work Queue** - **Manufacturability Testing** - **Automated CAM Bend Program Generation**

Global Edge Integrated Manufacturing (Software Modules – Continued …)

Global Edge® Integrated Manufacturing

ERP / MES Interface Module

The *ERP / MES Interface Module* includes the following:
- **Two-Way Integration with ERP / MES Systems**
- **Daily Production Order Processing**
- **Integrated Scheduling Between ERP and MES**
- **Industry 4.0 / 5.0 Shop Floor / IoT (Internet of Things) Integration**

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Outlook Interface Module

The *Outlook Interface Module* includes the following:
- **Automated Capturing of Incoming RFQ's**
- **Automated Management and Storage of Customer Documents & Specifications**
- **Automated Management of Sales Opportunities**
- **Automated Sales Quote / CRM Workflow**

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Integrated Shop Floor Module

The *Integrated Shop Floor Module* includes the following:
- **Job / Work Order Management**
- **Critical Path Ordering**
- **Material Requirements Planning**
- **Scheduling / Capacity Planning**
- **Production Reporting / Job Costing**

Global Edge® Integrated Manufacturing

Integrated Financials Module

The *Integrated Financials Module* includes the following:
- **Order Entry / Invoicing / Professional Billing**
- **Accounts Receivable / Payable / Purchase Order**
- **Inventory Management / Shipping & Receiving**
- **General Ledger / Bank Account**
- **Payroll Time & Attendance**

Global Edge Integrated Manufacturing Demonstration Outline

Global Edge® Integrated Manufacturing is designed as an automated workflow system designed to prepare information for the shop floor including the manufacturability testing of sheet metal parts to help eliminate shop floor errors before leaving engineering.

The following outlines the steps the illustrate the capabilities of the *Global Edge® Integrated Manufacturing*:

Demo Section 1: ERP / MES Interface (Optional)
- 1.1 – Automated ERP Download / Upload
- 1.2 – ERP / MES / Shop Floor Integration
- 1.3 – Data Mapping

Demo Section 2: SolidWorks CAD Interface / Manufacturability Testing
- 2.1 – Single Sheet Metal Part Processing / Manufacturability Testing
- 2.2 – Assembly Model Processing / Manufacturability Testing
- 2.3 – Sheet Metal Part Batch Processing / Manufacturability Testing

Demo Section 3: Document Interface / Quoting
- 3.1 – Outlook Interface / Incoming Information
- 3.2 – DXF Flat File Processing / Manufacturability Testing
- 3.3 – Automated Sales Quote / Routing Generation

Demo Section 4: Engineering Management
- 4.1 – Bill of Materials Management / Product Configuration
- 4.2 – Document Management / CAD Interface

Demo Section 5: Integrated Manufacturing
- 5.1 – Automated Job Build / Scheduling
- 5.2 – Workstation Screen / Load Balancing / Schedule Export
- 5.3 – Production Dashboard
- 5.4 – Shop Floor Data Collection / IoT (Internet of Things) Connectivity
- 5.5 – Automated Production ERP Upload

Demo Section 6: Integrated Financials
- 6.1 – Order Entry / Invoicing / Accounts Receivable
- 6.2 – Accounts Payable / Purchase Order
- 6.3 – Inventory Management
- 6.4 – General Ledger / Bank Account
- 6.5 – Payroll Time & Attendance

Global Edge Base System / Engineering Assistant Overview

Global Edge® Base System / Engineering Assistant module is an innovative and powerful Virtual Engineering Assistant designed to automate labor-intensive engineering and manufacturing workflow tasks to provide *"The Next Big Productivity Advancement in Engineering"*. *Global Edge® Base System / Engineering Assistant* module helps your engineering team to quickly generate sales quotes and process engineering orders, including preparation of accurate and timely information for the shop floor. This advanced software functionality includes:

- **Automated CAD Part / Model Analysis:** Eliminates the manual analysis of CAD part parameters to help drive accurate and timely quoting including automated routing generation.

- **Manufacturability Testing / Design For Manufacturing:** Eliminates and reduces shop floor errors with the manufacturability testing of parts before they leave engineering.

- **Automated Sheet Metal Batch Unfolding (**requires SolidWorks CAD Interface Module**):** Automates the batch unfolding of 3D CAD sheet metal parts to DXF Flat Files that are adjusted in size based on material, thickness, and bend radius.

- **Automated Shop Floor Data Preparation:** Provides automated generation of shop floor CAM bending programs based on 3D CAD Part Parameters.
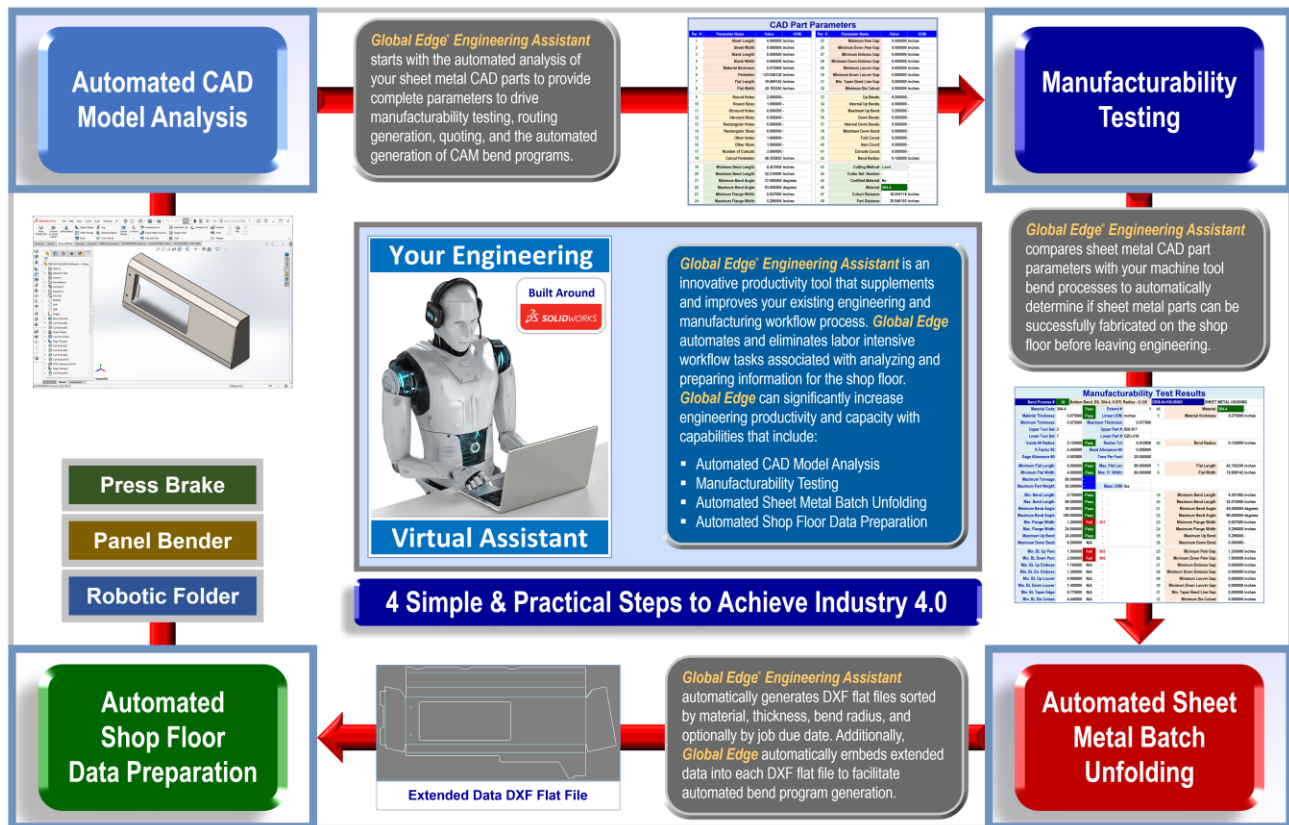
Section 1: ERP Interface (Optional)

Global Edge® Integrated Manufacturing includes a dynamic ERP interface that provides two-way integration between most ERP systems with manufacturing and the shop floor. The sections that illustrate these capabilities include:

- **1.1 – Automated ERP Download / Upload**

- **1.2 – ERP / MES / Shop Floor Integration**

- **1.3 – Data Mapping**

ERP Interface Overview

The following is an overview of the steps within this section:

- **1.1 – Automated ERP Download / Upload:** The steps within this section illustrate how the *Global Edge* software integrates directly with an ERP system and directly exchange information with engineering, manufacturing and the shop floor with capabilities that include:

  - **Automated ERP Order Download**

- **1.2 – ERP / MES / Shop Floor Integration:** The steps within this section illustrate how the *Global Edge* software uploads production information from the shop floor back to ERP with functionality that includes:

  - **ERP Production Upload**

- **1.3 – Data Mapping:** The steps within this section illustrate how the *Global Edge* software is setup to map data from various MES systems to integrate with most ERP software with functionality that includes:

  - **Define ERP System Connection**
  - **Define ERP Table Data Maps**
  - **XML File Generation / Exchange**

Sample Demontration Data (ERP Download)

The following is the sample data that is downloaded from ERP that populates the *Global Edge* database for the purposes of demonstration:

	TABLE #	TABLE NAME	DESCRIPTION	LOAD FILE	PAGE
ERP	H-537	work_queue_batch	Work Queue Batch Table	H-537-dem_wkqb.unl	2
ERP	H-507	work_queue	Work Queue Table	H-507-dem_wrkq.unl	2
ERP	R-270	inventory	Inventory Item Master Table	R-270-dem_invt.unl	3
ERP	C-236	customer	Customer Table	C-236-dem_cust.unl	5
ERP	Q-221	quote	Sales Quote Table	Q-221-dem_quot.unl	5
ERP	Q-223	quote_item	Sales Quote Item Table	Q-223-dem_quti.unl	5
ERP	Q-226	quote_qty	Sales Quote Quantity Table	Q-226-dem_quqt.unl	6
ERP	O-312	orders	Sales Orders Table	O-312-dem_ordr.unl	6
ERP	O-302	ord_item	Sales Order Items Table	O-302-dem_ordi.unl	7
ERP	J-361	job	Job Order Table	J-361-dem_job_.unl	7
ERP	J-424	work_pack	Work Pack Table	J-424-dem_wrkp.unl	7

Sample Work Queue Batch Table (H-537)

Global Edge® Engineering Assistant provides an automated workflow that is includes the ability to define work queue batches that are comprised of workflow tasks that includes the processing of CAD files, exchange of information between CAD, ERP, and MES / Scheduling software. The batches that have been defined for demonstration purposes include the following:

BATCH #	LOGIN	DESCRIPTION	BATCH DATE / TIME	PENDING COUNT
1	ldc	**Batch to Process Utility Cabinet Order**	**TODAY**	10
2	ldc	**Batch to Process Light Fixture Assembly**	**TODAY**	7
3	ldc	**Batch to Process Demo Parts**	**TODAY**	5
4	ldc	**Batch to Process DXF Flat Files**	**TODAY**	5
5	ldc	**Batch to Process Bend Process Test Parts**	**TODAY**	15

Sample Work Queue Table (H-507)

The **"Work Queue"** table is comprised of Workflow Tasks that are included with each of the previously **"Work Queue Batches"** that includes the following:

Work Queue Batch #: 1 (Batch to Process Utility Cabinet Order)

TASK #	BATCH #	JOB #	ROW #	QUOTE #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
1001	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-002-WRAP-325616-0001**	ERP	SLD	
1002	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-003-CAB-BOT-5616-0001**	ERP	SLD	
1003	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-004-CAB-TOP-5616-0001**	ERP	SLD	
1004	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-015-FILL-PNL-1627-0001**	ERP	SLD	
1005	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-017-SPINE-CT-32-0001**	ERP	SLD	
1006	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-018-SPINE-LT-32-0001**	ERP	SLD	
1007	1		1		**TODAY**	C	**Create DXF Files for PART #: SLD-019-SPINE-RT-32-0001**	ERP	SLD	
1008	1	1004	1		**TODAY**	C	**Build Job for PART #: SLD-001-BODY-325616-0001**	ERP	MRP	1001

Work Queue Batch #: 2 (Batch to Process Light Fixture Assembly)

TASK #	BATCH #	JOB #	ROW #	QUOTE #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
1009	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-01-LENSE-FRAME**	ERP	SLD	
1010	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-03-LENSE-BRACKET**	ERP	SLD	
1011	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-04-HOUSING-FLANGE**	ERP	SLD	
1012	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-05-LENSE-RET-BRKT**	ERP	SLD	
1013	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-06-FIXTURE-HOUSING**	ERP	SLD	
1014	2		1		**TODAY**	C	**Create DXF Files for PART #: LIGHT-07-YOKE-BRACKET**	ERP	SLD	
1015	2	1005	1		**TODAY**	C	**Build Job for PART #: LIGHT-00-LIGHT**	ERP	MRP	1003

Work Queue Batch #: 3 (Batch to Process Demo Parts)

TASK #	BATCH #	JOB #	ROW #	QUOTE #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
1016	3		1	1001	**TODAY**	Q	**Create DXF File for PART #: DEM-01-APRON**	ERP	SLD	
1017	3		2	1001	**TODAY**	Q	**Create DXF File for PART #: DEM-02-LOAD-CTR-BOX**	ERP	SLD	
1018	3		3	1001	**TODAY**	Q	**Create DXF File for PART #: DEM-03-BOTTOM-DLH**	ERP	SLD	
1019	3		4	1001	**TODAY**	Q	**Create DXF File for PART #: DEM-04-HOUSING**	ERP	SLD	
1020	3		5	1001	**TODAY**	Q	**Create DXF File for PART #: DEM-05-PANEL**	ERP	SLD	
1021	3	1006	1		**TODAY**	Q	**Build Job for Demonstration Parts**	ERP	MRP	1009

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Work Queue Batch #: 4 (Batch to Process DXF Flat Files)

TASK #	BATCH #	JOB #	ROW #	QUOTE #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
1022	4		1		TODAY	C	Import and Test PART #: DXF-01-APRON		DOC	
1023	4		2		TODAY	C	Import and Test PART #: DXF-02-LOAD-CTR-BOX		DOC	
1024	4		3		TODAY	C	Import and Test PART #: DXF-03-BOTTOM-DLH		DOC	
1025	4		4		TODAY	C	Import and Test PART #: DXF-04-HOUSING		DOC	
1026	4		5		TODAY	C	Import and Test PART #: DXF-05-PANEL		DOC	

Work Queue Batch #: 5 (Batch to Process Bend Process Test Parts)

TASK #	BATCH #	JOB #	ROW #	QUOTE #	TASK DATE	TYPE	TASK NOTE	FROM	PROG.	SRC.
1027	5		1		TODAY	C	Import and Test PART #: BP-01-GAL-G60-06350-064		SLD	
1028	5		2		TODAY	C	Import and Test PART #: BP-02-GAL-G60-07850-079		SLD	
1029	5		3		TODAY	C	Import and Test PART #: BP-03-GAL-G60-10840-108		SLD	
1030	5		4		TODAY	C	Import and Test PART #: BP-04-SS-304-4-05000-025		SLD	
1031	5		5		TODAY	C	Import and Test PART #: BP-05-SS-304-4-06250-050		SLD	
1032	5		6		TODAY	C	Import and Test PART #: BP-06-SS-304-4-07812-125		SLD	
1033	5		7		TODAY	C	Import and Test PART #: BP-07-SS-316-2B-07812-020		SLD	
1034	5		8		TODAY	C	Import and Test PART #: BP-08-SS-316-2B-09370-030		SLD	
1035	5		9		TODAY	C	Import and Test PART #: BP-09-SS-316-2B-14062-120		SLD	
1036	5		10		TODAY	C	Import and Test PART #: BP-10-AL-5052-H32-05082-100		SLD	
1037	5		11		TODAY	C	Import and Test PART #: BP-11-AL-5052-H32-06408-105		SLD	
1038	5		12		TODAY	C	Import and Test PART #: BP-12-AL-5052-H32-08081-125		SLD	
1039	5		13		TODAY	C	Import and Test PART #: BP-13-CRS-CRS-04780-050		SLD	
1040	5		14		TODAY	C	Import and Test PART #: BP-14-CRS-CRS-07470-070		SLD	
1041	5		15		TODAY	C	Import and Test PART #: BP-15-CRS-CRS-13450-060		SLD	

Sample Inventory Item Master Table (R-270)

The **"Inventory Item Master"** table is comprised of the parts that are processed and stored within the **Global Edge** system including part numbers that are exchanged with CAD Files, ERP, MES, and other third-party systems. The following are the parts that have been defined for demonstration purposes:

Part Numbers Associated with Processing of Utility Cabinet Assembly (Work Queue Batch #1)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
SLD-000-CAB-CRS-325616-0001	UTILITY CABINET		ASM	SHT	CRS	lbs
SLD-001-BODY-325616-0001	CABINET BODY		ASM	SHT	CRS	EA
SLD-002-WRAP-325616-0001	CABINET BODY WRAP	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-003-CAB-BOT-5616-0001	CABINET BODY BOTTOM	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-004-CAB-TOP-5616-0001	CABINET BODY TOP	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-015-FILL-PNL-1627-0001	CABINET FILL PANEL	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-016-HORZ-DIV-55-0001	CABINET HORIZONTAL DIVIDER		CMP	SHT	5052-H32	EA
SLD-017-SPINE-CT-32-0001	CABINET SPINE - CENTER	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-018-SPINE-LT-32-0001	CABINET SPINE - CORNER - LEFT	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-019-SPINE-RT-32-0001	CABINET SPINE - CORNER - RIGHT	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
SLD-020-VERT-DIV-BOT-15-0001	CABINET VERTICAL DIVIDER - BOTTOM		CMP	SHT	5052-H32	EA
SLD-021-VERT-DIV-TOP-16-0001	CABINET VERTICAL DIVIDER - TOP		CMP	SHT	5052-H32	EA

Part Numbers Associated with Processing of Light Fixture Assembly (Work Queue Batch #2)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
LIGHT-00-LIGHT	LIGHT FIXTURE ASSEMBLY		PRD	LFX		EA
LIGHT-01-LENSE-FRAME	LIGHT FIXTURE LENSE FRAME		CMP	SHT	5052-H32	EA
LIGHT-02-LENSE	LIGHT FIXTURE LENSE		CMP	SHT		EA
LIGHT-03-LENSE-BRACKET	LIGHT FIXTURE LENSE BRACKET		CMP	SHT	5052-H32	EA
LIGHT-04-HOUSING-FLANGE	LIGHT FIXTURE HOUSING FLANGE		CMP	SHT	5052-H32	EA
LIGHT-05-LENSE-RET-BRKT	LIGHT FIXTURE LENSE RET. BRACKET		CMP	SHT	5052-H32	EA
LIGHT-06-FIXTURE-HOUSING	LIGHT FIXTURE HOUSING		CMP	SHT	5052-H32	EA
LIGHT-07-YOKE-BRACKET	LIGHT FIXTURE YOKE BRACKET		CMP	SHT	5052-H32	EA
LIGHT-08-DOOR-GASKET	LIGHT FIXTURE DOOR GASKET		CMP	SHT		EA
LIGHT-09-FRAME-CHANNEL	LIGHT FIXTURE FRAME CHANNEL		CMP	SHT	G60	EA
LIGHT-10-BOLT	LIGHT FIXTURE BOLT		CMP	SHT	304-4	EA
LIGHT-11-NUT	LIGHT FIXTURE NUT		CMP	SHT	304-4	EA

Part Numbers Associated with 5 Demonstration Parts (Work Queue Batch #3)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
DEM-01-APRON	APRON	18 GA - Thick: 0.05000 - Bend Rad: 0.025	CMP	SHT	304-4	EA
DEM-02-LOAD-CTR-BOX	LOAD CENTER BOX	16 GA - Thick: 0.06250 - Bend Rad: 0.025	CMP	SHT	304-4	EA
DEM-03-BOTTOM-DLH	BOTTOM DISPLAY LIGHT HOUSING	18 GA - Thick: 0.05000 - Bend Rad: 0.025	CMP	SHT	304-4	EA
DEM-04-HOUSING	SHEET METAL HOUSING	14 GA - Thick: 0.07812 - Bend Rad: 0.125	CMP	SHT	304-4	EA
DEM-05-PANEL	SHEET METAL PANEL	16 GA - Thick: 0.05980 - Bend Rad: 0.070	CMP	SHT	CRS	EA

Part Numbers Associated with DXF Files to be Processed (Work Queue Batch #4)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
DXF-01-APRON	APRON	16 GA - Thick: 0.06250 - Bend Rad: 0.025	CMP	SHT	304-4	EA
DXF-02-LOAD-CTR-BOX	LOAD CENTER BOX	14 GA - Thick: 0.07812 - Bend Rad: 0.025	CMP	SHT	304-4	EA
DXF-03-BOTTOM-DLH	BOTTOM DISPLAY LIGHT HOUSING	16 GA - Thick: 0.05082 - Bend Rad: 0.025	CMP	SHT	5052-H32	EA
DXF-04-HOUSING	SHEET METAL HOUSING	10 GA - Thick: 0.13450 - Bend Rad: 0.125	CMP	SHT	CRS	EA
DXF-05-PANEL	SHEET METAL PANEL	16 GA - Thick: 0.06350 - Bend Rad: 0.070	CMP	SHT	G60	EA

Part Numbers Associated with Bend Process Test Batch (Work Queue Batch #5)

PART #	DESCRIPTION	DESCRIPTION 2	TYPE	CAT	MTL.	UOM
BP-01-GAL-G60-06350-064	BEND PROCESS TEST PART 01	16 GA - Thick: 0.06350 - Bend Rad: 0.064	CMP	SHT	G60	EA
BP-02-GAL-G60-07850-079	BEND PROCESS TEST PART 02	14 GA - Thick: 0.07850 - Bend Rad: 0.079	CMP	SHT	G60	EA
BP-03-GAL-G60-10840-108	BEND PROCESS TEST PART 03	12 GA - Thick: 0.10840 - Bend Rad: 0.108	CMP	SHT	G60	EA
BP-04-SS-304-4-05000-025	BEND PROCESS TEST PART 04	18 GA - Thick: 0.05000 - Bend Rad: 0.025	CMP	SHT	304-4	EA
BP-05-SS-304-4-06250-050	BEND PROCESS TEST PART 05	16 GA - Thick: 0.06250 - Bend Rad: 0.050	CMP	SHT	304-4	EA
BP-06-SS-304-4-07812-125	BEND PROCESS TEST PART 06	14 GA - Thick: 0.07812 - Bend Rad: 0.125	CMP	SHT	304-4	EA
BP-07-SS-316-2B-07812-020	BEND PROCESS TEST PART 07	14 GA - Thick: 0.07812 - Bend Rad: 0.020	CMP	SHT	316-2B	EA
BP-08-SS-316-2B-09370-030	BEND PROCESS TEST PART 08	13 GA - Thick: 0.09370 - Bend Rad: 0.030	CMP	SHT	316-2B	EA
BP-09-SS-316-2B-14062-120	BEND PROCESS TEST PART 09	10 GA - Thick: 0.14062 - Bend Rad: 0.120	CMP	SHT	316-2B	EA
BP-10-AL-5052-H32-05082-100	BEND PROCESS TEST PART 10	16 GA - Thick: 0.05082 - Bend Rad: 0.100	CMP	SHT	5052-H32	EA
BP-11-AL-5052-H32-06408-105	BEND PROCESS TEST PART 11	14 GA - Thick: 0.06408 - Bend Rad: 0.105	CMP	SHT	5052-H32	EA
BP-12-AL-5052-H32-08081-125	BEND PROCESS TEST PART 12	12 GA - Thick: 0.08081 - Bend Rad: 0.125	CMP	SHT	5052-H32	EA
BP-13-CRS-CRS-04780-050	BEND PROCESS TEST PART 13	18 GA - Thick: 0.04780 - Bend Rad: 0.050	CMP	SHT	CRS	EA
BP-14-CRS-CRS-07470-070	BEND PROCESS TEST PART 14	14 GA - Thick: 0.07470 - Bend Rad: 0.070	CMP	SHT	CRS	EA
BP-15-CRS-CRS-13450-060	BEND PROCESS TEST PART 15	10 GA - Thick: 0.13450 - Bend Rad: 0.060	CMP	SHT	CRS	EA

Sample Customer Table (C-236)

The **"Customer"** table is comprised of the following customer record(s) that have been defined for demonstration purposes:

Customer Records

CUST #	LOC. #	COMPANY NAME	CONTACT NAME	ADDRESS 1	CITY	ST	ZIP
1001	1	ABC MANUFACTURING	Robert Smith, V.P. of Engineering	5000 West Industrial Way	Milwaukee	WI	55555

Sample Sales Quote Table (Q-221)

The **"Quote"** table includes the following Sales Quote Header that has been added for demonstration purposes as downloaded by the **Global Edge ERP Interface**:

QUOTE #	QUOTE DESCRIPTION	QUOTE DATE	VALID DATE	QUOTE TOTAL
1001	Fabricated Sheet Metal Parts	TODAY	TODAY + 30	$28,429.43

Sample Sales Quote Item Table (Q-223)

The **"Quote Item"** table includes the following Sales Quote Items for the above Sales Quote Header that has been added for demonstration purposes as downloaded by the **Global Edge ERP Interface**:

QUOTE #	ROW #	PART #	DESCRIPTION	QTY	UOM	UNIT	EXTENDED
1001	1	DEM-01-APRON	APRON	50.0000	EA	$173.6969	$8,684.85
1001	2	DEM-02-LOAD-CTR-BOX	LOAD CENTER BOX	25.0000	EA	$198.0316	$4,950.79
1001	3	DEM-03-BOTTOM-DLH	BOTTOM DISPLAY LIGHT HOUSING	35.0000	EA	$168.2720	$5,889.52
1001	4	DEM-04-HOUSING	SHEET METAL HOUSING	10.0000	EA	$210.9056	$2,109.06
1001	5	DEM-05-PANEL	SHEET METAL PANEL	40.0000	EA	$165.5053	$6,620.21

Sample Sales Quote Quantity Table (Q-226)

The *"Quote Quantity"* table includes Quantity Pricing for each of the demonstration Sales Quote Items for the above sales quote that is downloaded by the *Global Edge ERP Interface*:

QUOTE #	ROW #	ORDER #	QTY	UOM	UNIT	LIST	UNIT	EXTENDED
1001	1	1	1.0000	EA	173.6969	208.4363	208.4363	208.44
1001	1	2	10.0000	EA	44.0969	52.9163	52.9163	529.16
1001	1	3	50.0000	EA	32.5769	39.0923	39.0923	1954.61
1001	1	4	100.0000	EA	31.1369	37.3643	37.3643	3736.43
1001	1	5	250.0000	EA	30.2729	36.3275	36.3275	9081.87
1001	2	1	1.0000	EA	198.0316	237.6379	237.6379	237.64
1001	2	2	10.0000	EA	68.4316	82.1179	82.1179	821.18
1001	2	3	50.0000	EA	56.9116	68.2939	68.2939	3414.70
1001	2	4	100.0000	EA	55.4716	66.5659	66.5659	6656.59
1001	2	4	250.0000	EA	54.6076	65.5291	65.5291	16382.28
1001	3	1	1.0000	EA	168.2720	201.9264	201.9264	201.93
1001	3	2	10.0000	EA	38.6720	46.4064	46.4064	464.06
1001	3	3	50.0000	EA	27.1520	32.5824	32.5824	1629.12
1001	3	4	100.0000	EA	25.7120	30.8544	30.8544	3085.44
1001	3	5	250.0000	EA	24.8480	29.8176	29.8176	7454.40
1001	4	1	1.0000	EA	210.9056	253.0867	253.0867	253.09
1001	4	2	10.0000	EA	81.3056	97.5667	97.5667	975.67
1001	4	3	50.0000	EA	69.7856	83.7427	83.7427	4187.14
1001	4	4	100.0000	EA	68.3456	82.0147	82.0147	8201.47
1001	4	5	250.0000	EA	67.4816	80.9779	80.9779	20244.48
1001	5	1	1.0000	EA	165.5053	198.6064	198.6064	198.61
1001	5	2	10.0000	EA	35.9053	43.0864	43.0864	430.86
1001	5	3	50.0000	EA	24.3853	29.2624	29.2624	1463.12
1001	5	4	100.0000	EA	22.9453	27.5344	27.5344	2753.44
1001	5	5	250.0000	EA	22.0813	26.4976	26.4976	6624.39

Sample Sales Order Table (O-312 "orders")

The *"Orders"* table includes the following Sales Order Headers that have been added for demonstration purposes as downloaded by the *Global Edge ERP Interface* including a direct link to specific Job Orders:

CUST #	ORDER #	JOB #	ORDER DATE	REQ. SHIP DATE	TOTAL	ORDER DESCRIPTION
1001	1001	1004	TODAY	TODAY + 14	$0.00	Sales Order for Cabinet Body (ERP Download)
1001	1002	1005	TODAY	TODAY + 14	$0.00	Sales Order for Light Fixture (ERP Download)
1001	1003	1006	TODAY	TODAY + 14	$0.00	Sales Order for Demonstration Parts (ERP Download)

Sample Sales Orders Item Table (O-302 "ord_item")

The **"Order Items"** table is comprised of the Sales Order Items for the above sales orders added for demonstration purposes as downloaded by the **Global Edge ERP Interface**:

Sales Order Items (Sales Order #: 1001)

ORDER #	LINE ITEM	PART #	DESCRIPTION	REQ. SHIP DATE	QTY	UOM
1001	1	SLD-001-BODY-325616-0001	CABINET BODY	TODAY + 14	5.0000	EA

Sales Order Items (Sales Order #: 1002)

ORDER #	LINE ITEM	PART #	DESCRIPTION	REQ. SHIP DATE	QTY	UOM
1002	1	LIGHT-00-LIGHT	LIGHT FIXTURE ASSEMBLY	TODAY + 14	10.0000	EA

Sales Order Items (Sales Order #: 1003)

ORDER #	LINE ITEM	PART #	DESCRIPTION	REQ. SHIP DATE	QTY	UOM
1003	1	DEM-01-APRON	APRON	TODAY + 14	15.0000	EA
1003	2	DEM-02-LOAD-CTR-BOX	LOAD CENTER BOX	TODAY + 14	20.0000	EA
1003	3	DEM-03-BOTTOM-DLH	BOTTOM DISPLAY LIGHT HOUSING	TODAY + 14	25.0000	EA
1003	4	DEM-04-HOUSING	SHEET METAL HOUSING	TODAY + 14	30.0000	EA
1003	5	DEM-05-PANEL	SHEET METAL PANEL	TODAY + 14	35.0000	EA

Sample Job Order Table (J-361 "job")

The **"Job"** table is comprised of the Job Order Headers added for demonstration purposes as downloaded by the **Global Edge ERP Interface**:

JOB #	TYPE	JOB DATE	REQ. DATE	SCH. START	DESCRIPTION
1001	TEMPLATE				SHEET METAL PART FABRICATION
1002	TEMPLATE				SHEET METAL PARTS & ASSEMBLIES
1003	TEMPLATE				CUSTOM JOB TEMPLATE
1004	ORDER	TODAY	TODAY + 14	TODAY + 2	FABRICATE UTILITY CABINET
1005	ORDER	TODAY	TODAY + 14	TODAY + 2	FABRICATE LIGHT FIXTURE
1006	ORDER	TODAY	TODAY + 14	TODAY + 2	DEMO SHEET METAL PARTS

Sample Work Pack Table (J-424 "work_pack")

The **"Work Pack"** table is designed to divide Job Orders into specific work packs such as a work pack for fabrication and the assembly of components. The following are the Work Packs that have been define for the three Template Jobs defined above and are downloaded by the **Global Edge ERP Interface**:

JOB #	W.P. #	SCH. START	SCH. END	START DATE	END DATE	% OF JOB	% COMPLETE	JOB DESCRIPTION
1001	1					100	0	Sheet Metal Components
1002	1					70	0	Sheet Metal Components
1002	2					30	0	Assembly Work Pack
1003	1					100	0	Template Work Pack

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1.1 – Automated ERP Download / Upload

This section includes the demonstration data that has been established to illustrate the information exchange capabilities provided by the ***Global Edge ERP / MES Interface***:

These steps illustrate the download of order information from an ERP system:

Workflow Steps

1. Launch the ***Global Edge ERP / MES Interface*** to display the following screen:
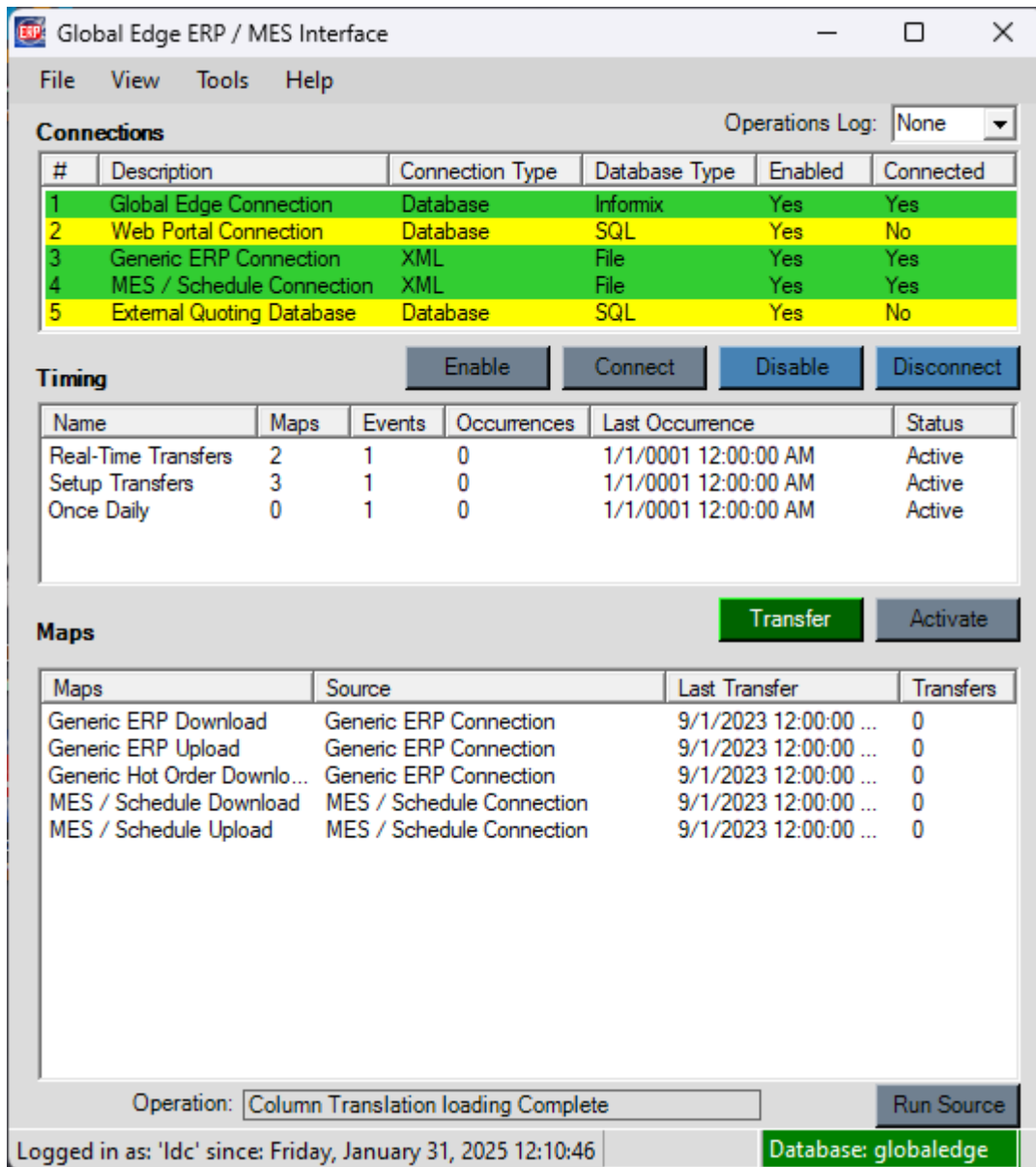
2. Highlight **"Generic ERP Download"** data map followed by **"Transfer"** option to initiate download of ERP order information.

1.2 – ERP / MES / Shop Floor Integration

These steps illustrate the upload of production information back to an ERP system:

Workflow Steps

1. Launch the *Global Edge ERP Interface* to display the following screen:

2. Highlight *"Generic ERP Upload"* data map followed by *"Transfer"* option to initiate upload of production information back to ERP system.

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Sample Scheduler Order Import / Expot

XML Files

The following is an example XML file with Order data:

```
<Root>
<ORDER NUMBER="12345" DUE="2008-08-31T22:30:00" CUSTOMER="ABC"
HOLD="2008-08-30T00:00:00" NOTES="MISC NOTES FIELD">
<PART NAME="18-08000-12" QTY="100" NOTES="PART NOTES"></PART>
<PART NAME="18-08000-14.PRT" QTY="300" NOTES="PART NOTES"></PART>
<PART NAME="010906" QTY="3"></PART>
</ORDER>
<ORDER NUMBER="12346" DUE="2008-08-31T23:00:00" HOLD="2008-08-30T00:00:00"
NOTES="MISC NOTES FIELD">
<PART NAME="Another Part.prt" QTY="10"></PART>
</ORDER>
</Root>
```

Each XML file can contain one or more ORDER elements. Each ORDER element must contain a NUMBER attribute, but the other attributes (DUE, CUSTOMER, HOLD, and NOTES) are optional. If the DUE attribute is missing the current date is used as the due date. Each ORDER element contains one or more PART child elements. The NAME attribute is required and contains the part name. This name may or may not contain the ".prt" file extension, either will work. The QTY attribute is also required and must be greater than 0.

CSV Files

The following is an example CSV text file:

```
"ORDER"
"12345","2008-08-31T22:30:00","ABC","2008-08-30T00:00:00","MISC NOTES FIELD"
"18-08000-12","100","PART NOTES"
"18-08000-14.PRT ","300","PART NOTES"
"010906","3",""
"ORDER"
"12346","2008-08-31T23:00:00","","2008-08-30T00:00:00","MISC NOTES FIELD"
"Another Part.prt","10",""
```
The quotation marks around each field are optional. The following is an equivalent file:
```
ORDER
12345,2008-08-31T22:30:00,ABC,2008-08-30T00:00:00,MISC NOTES FIELD
18-08000-12,100,PART NOTES
18-08000-14.PRT,300,PART NOTES
010906,3,
ORDER
12346,2008-08-31T23:00:00,,2008-08-30T00:00:00,MISC NOTES FIELD
Another Part.prt,10,
```

The ORDER field must precede each Order. Multiple orders can be in one file as long as each is preceded by the ORDER field. The file layout is as follows:

```
ORDER
Comma separated order information
Comma separated part information (multiple lines if needed)
ORDER
Comma separated order information
Comma separated part information (multiple lines if needed)
```

The order information line must be in the following sequence:
Order Number, Due Date, Customer, Hold Date, and Notes.
The part information line(s) must be in the following sequence:
Part Number, Quantity, Notes
The part number may or may not contain the ".prt" extension, either will work.

1.3 – Data Mapping

These steps illustrate how data is mapped between database tables / fields between *Global Edge* and the ERP system.

Workflow Steps

1. Launch *Global Edge Engineering Assistant* software to display the main system menu:

2. Select *"Engineering > Engineering Set-Up / Utilities > ERP Interface"* option to display the following menu:
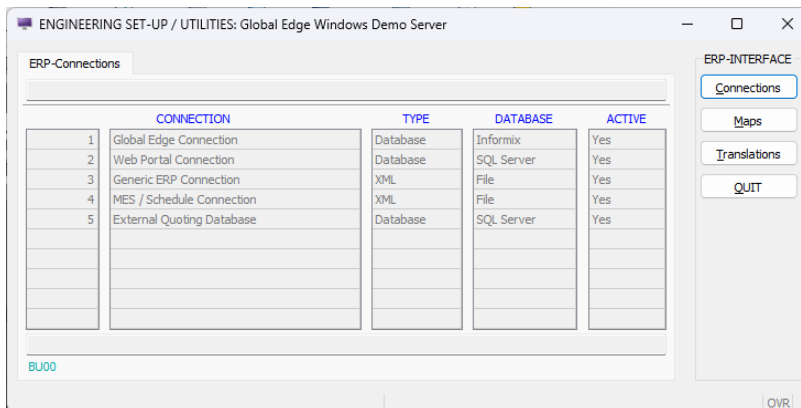
Sample Data (ERP Connection Table – E-453 "erp_connect")

CONNECT #	DESCRIPTION	TYPE	DSN	DRIVER	SERVER	PORT #	IP ADDRESS
1	Global Edge Connection	D	globaledge			22	
2	Web Portal Connection	D		SQL Server	localhost		
3	Generic ERP Connection	X					
4	MES / Schedule Connection	X					
5	External Quoting Database	D	SQL DSN	{SQL Server Native Client 10.0}	customer server IP address		

1. Select *"Maps > Update"* option to display following screen form:
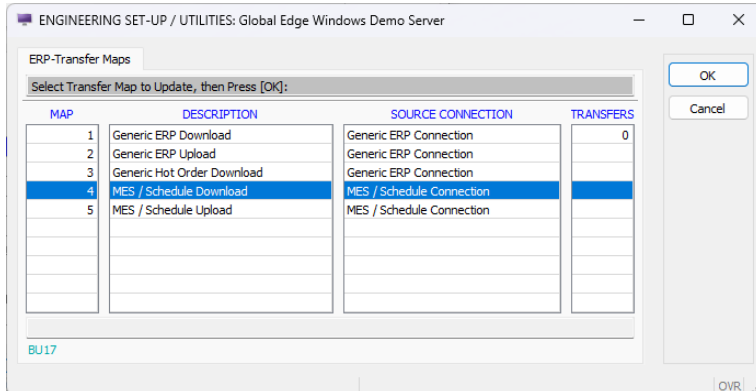
Sample Data (Transfer Map Table – E-501 "transfer_map")

MAP #	DESCRIPTION	SRC CONN. #	FILE MASK	SOURCE QUERY	EVENT #
1	Generic ERP Download	3	.xml		2
2	Generic ERP Upload	3	.xml		2
3	Generic Hot Order Download	3		SELECT * FROM inventory WHERE rebuilt = 'Y' and transfer_status = 'R'	2
4	MES / Schedule Download	4	.xml		1
5	MES / Schedule Upload	4	.xml		1

2. Select *"Source Tables"* followed by *"OK"* option:
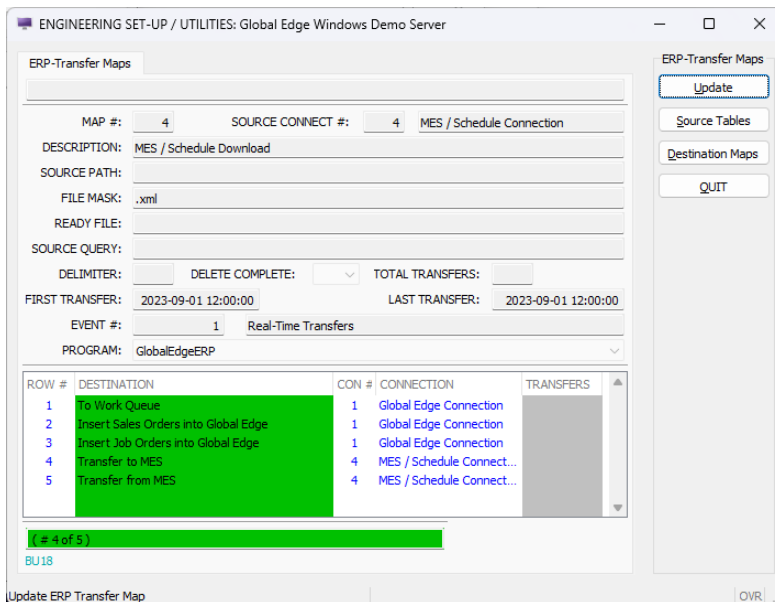
3. Select *"Update"* option and select *"WorkTasks"* followed by *"OK"*:

| ENGINEERING SET-UP / UTILITIES: Global Edge Windows Demo Server | — □ × |

ERP-Source Table List

Select Source Table to Update, then Press [OK]:

TRANS #	LEVEL	SOURCE TABLE	LINK COLUMN	ORDER BY	ORDER SEQUENCE
7	1	WorkTasks			
8	1	Orders			
9	1	Jobs			

OK

Cancel

BU19

OVR
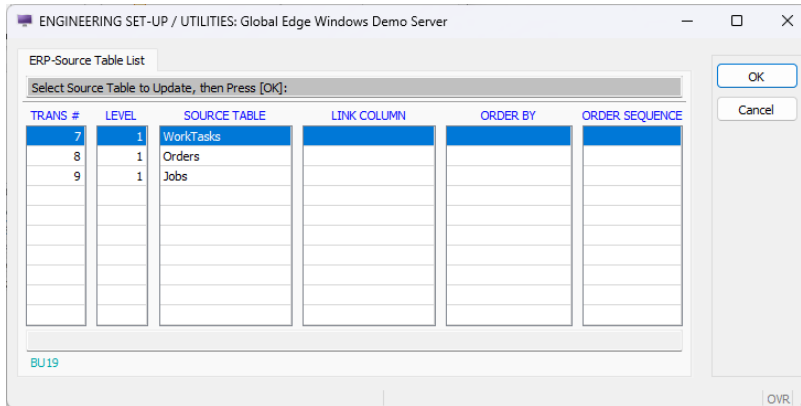
Sample Data (Source Schema Table – E-488 "src_schema")

MAP #	TRANS #	SRC TABLE	PARENT TABLE	TABLE QUERY	UPDATE COLUMN	UPDATE KEY
1	1	Customer		SELECT * FROM Customer WHERE transfer = 'Y'	transfer	
1	2	CustCnt		SELECT * FROM CustCnt WHERE transfer = 'Y'	transfer	
1	3	PartMaster		SELECT * FROM PartMaster WHERE transfer = 'Y'	transfer	
1	4	WorkTasks		SELECT * FROM WorkTasks WHERE transfer = 'Y'	transfer	
2	5	WorkTasks			task_status	task_num
3	6	HotJobs		SELECT * FROM HotJobs WHERE transfer = 'Y'	transfer	
4	7	WorkTasks		SELECT * FROM WorkTasks WHERE transfer = 'Y'	transfer	
4	8	Orders		SELECT * FROM Orders WHERE transfer = 'Y'	transfer	
4	9	Jobs		SELECT * FROM Jobs WHERE transfer = 'Y'	transfer	
5	10	job_trans		INSERT INTO JobTrans		

4. This will display the following screen form and menu options:

5.   Select **"QUIT > QUIT"** option, then select **"Destination Maps"** option to display the following screen form and menu options:
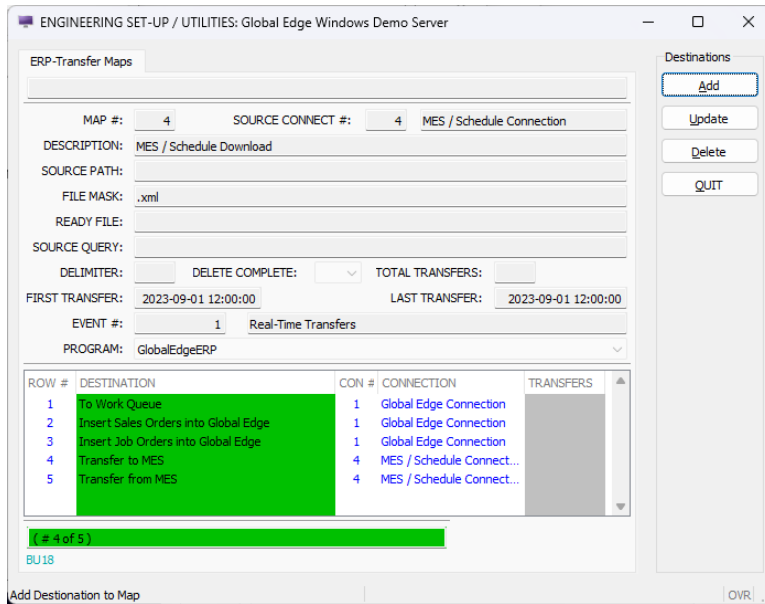
3.   Select **"Update"** option, then select **"Transfer to Generic MES"** option followed by **"OK"** option:
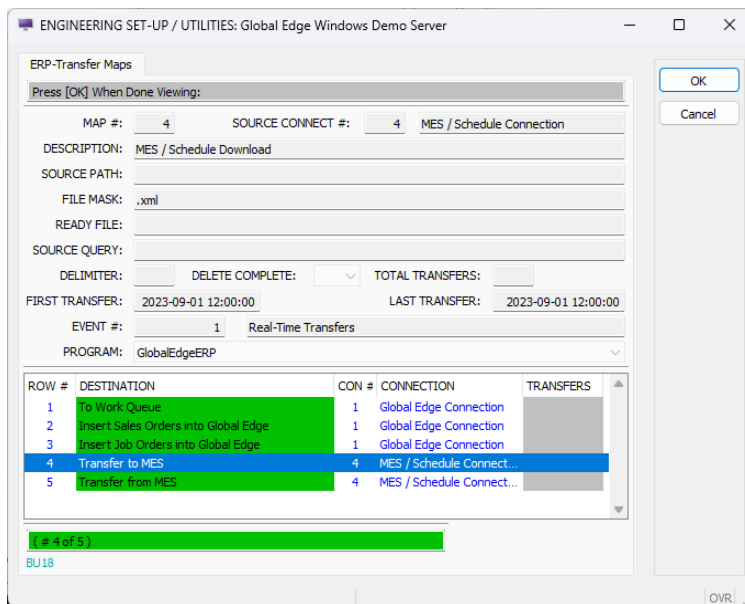
4. This will display the following screen form and menu options:

Sample Data (Map Destination Table – E-462 "map_dest")

TRANS #	MAP #	ROW #	DESCRIPTION	DEST. CONNECT #	PATH	EXT.	READY EXT.	UPDATE COL.
1	1	1	Insert Customers into Global Edge	1				customer_num
2	1	2	Insert Customers into Web Portal Database	2				customer_num
3	1	3	Insert Customer Contacts into Global Edge	1				
4	1	4	Insert Work Queue Entries into Global Edge	1				
5	1	5	Insert Inventory Parts into Global Edge	1				
6	1	6	Insert Work Queue Entries into Global Edge	1				
7	4	1	To Work Queue	1				
8	4	2	Insert Sales Orders into Global Edge	1				
9	4	3	Insert Job Orders into Global Edge	1				
10	4	4	Transfer to MES	4		.XML	.RDY	
11	4	5	Transfer from MES	4		.XML	.RDY	
12	5	1	Upload Daily Production to ERP	1				

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Demo Section 2: SolidWorks CAD Interface / Manufacturability Testing

Global Edge® Integrated Manufacturing provides a direct two-way interface with SolidWorks 3D CAD software. This includes the capability to automatically produce single or large batches of SolidWorks DXF Flat Files with a few mouse clicks. This also includes the ability to perform a *"Manufacturability Test"* on each part. The following are the steps to perform these capabilities on a single sheet metal part, or a batch of sheet metal parts:

- **2.1 – Single Sheet Metal Part Processing**

- **2.2 – Assembly Model Processing**

- **2.3 – Sheet Metal Part Batch Processing**

Demo Section 2: SolidWorks CAD Interface Overview

The following is an overview of Section 2 and what is illustrated within each of the steps.

- **2.1 – Single Sheet Metal Part Processing:** The steps within this section illustrate how the *Global Edge* software provides … which includes:
  - **Xxxx**
  - **Xxxx**
  - **Xxxx**

- **2.2 – Assembly Model Processing:** The steps within this section illustrate how the *Global Edge* software provides … which includes:
  - **Xxxx**
  - **Xxxx**
  - **Xxxx**

- **2.3 – Sheet Metal Part Batch Processing:** The steps within this section illustrate how the *Global Edge* software provides … which includes:
  - **Xxxx**
  - **Xxxx**
  - **Xxxx**

2.1 – Single Sheet Metal Part Processing

These steps illustrate the single part processing of a SolidWorks sheet metal part.

Workflow Steps

1. The first step is to launch SolidWorks:
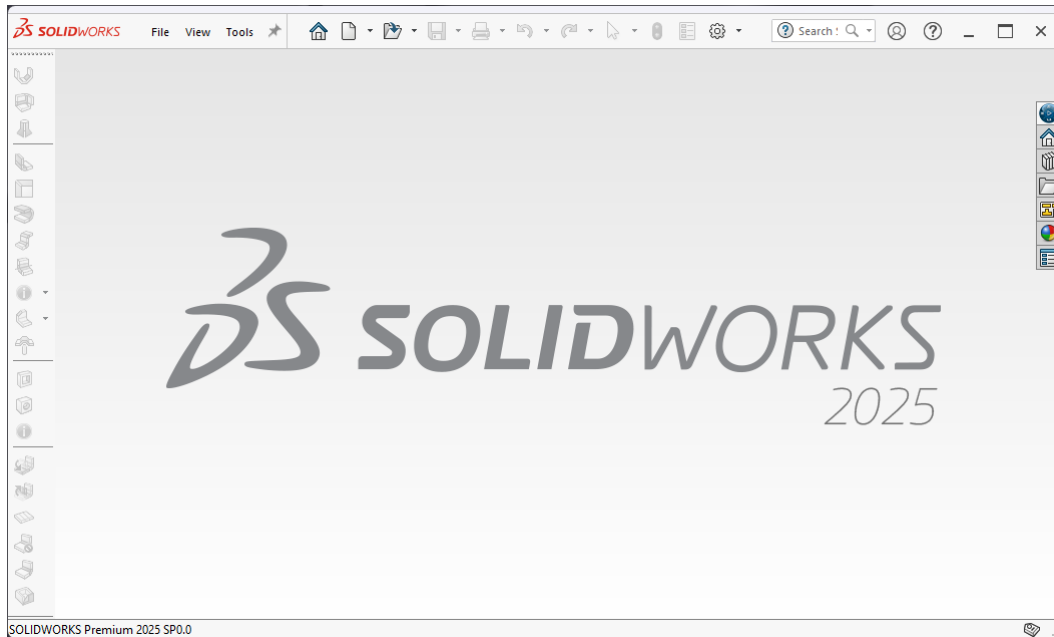
2. Select **"File > Open"** and select **"BP-00-TEST-PART-A.sldprt"** SolidWorks part file:
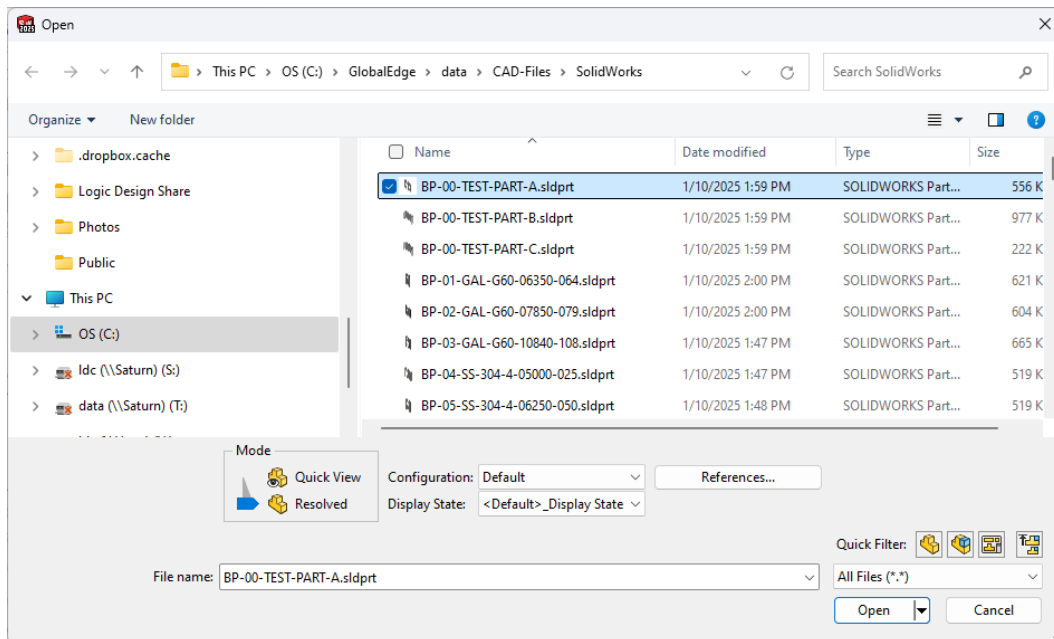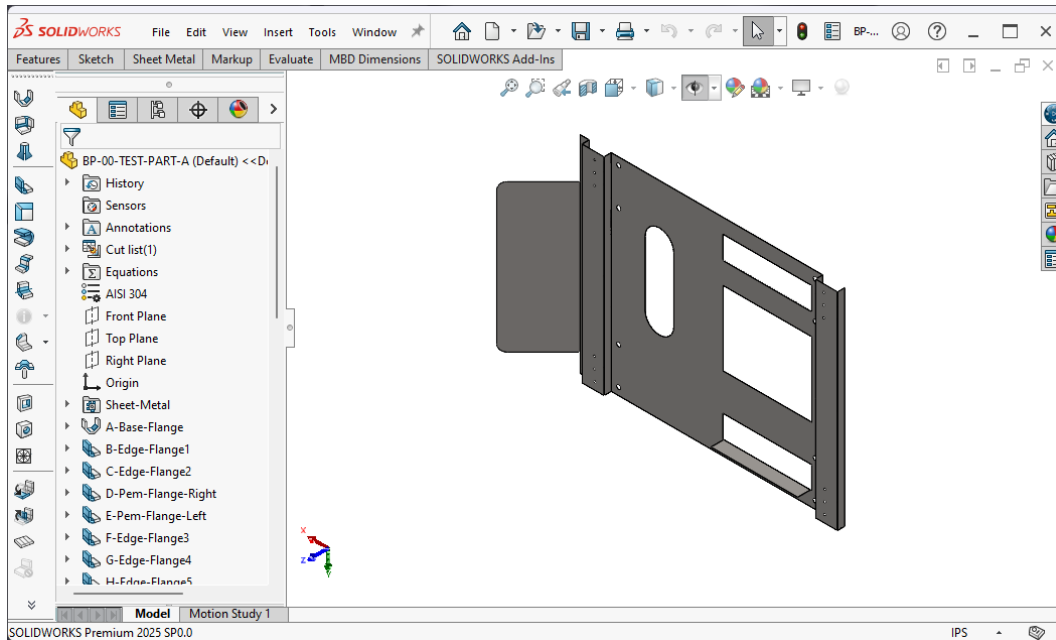
3. Select *"Tools > Global Edge > Export Files"* option:
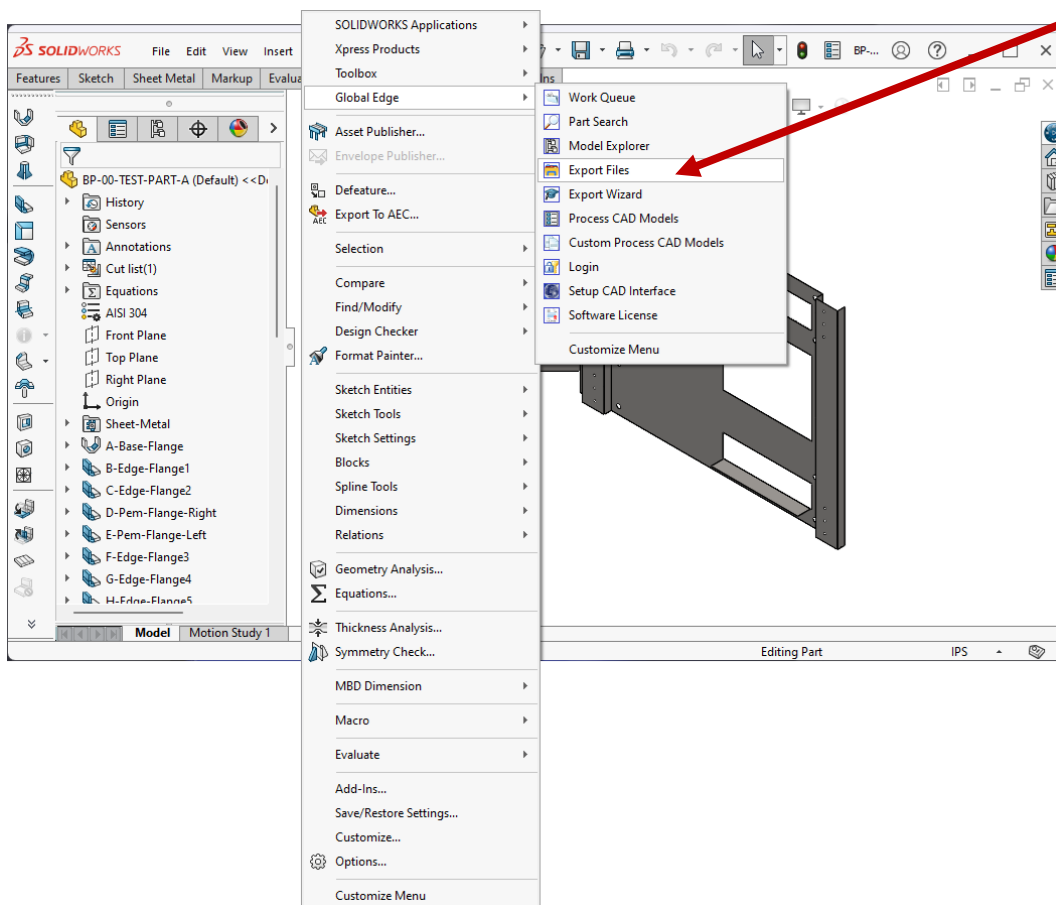
4. Select the *"Select All"* option including checking *"Data Import"*, *"Silent Mode"*, *"Save Model Changes"*, and *"Manufacturability Test"* check boxes so the software will analyze and test the above selected sheet metal part (**"BP-00-TEST-PART-A"**):
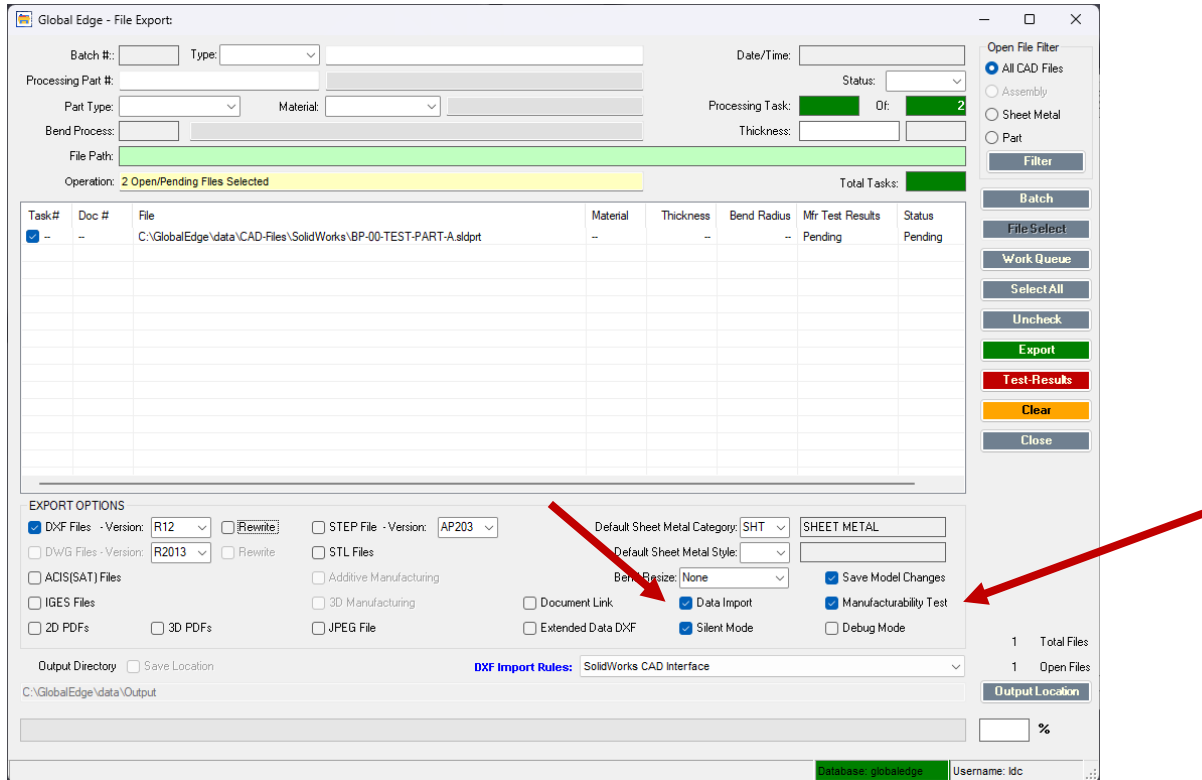
5. Select the *"Export"* option to start the export process. As the software executes the following actions will take place:
    A. Flat Pattern DXF File Generated for Each Sheet Metal Part
    B. DXF Analysis Performed
        i. Material / Thickness / Bend Radius
        ii. Blank / Flat (Length & Width)
        iii. Minimum / Maximum Bend Length
        iv. Minimum / Maximum Bend Angle
        v. Minimum / Maximum Flange Width
        vi. Minimum Pem Hole to Bend Line Gap
        vii. Minimum Embossment to Bend Line Gap
        viii. Minimum Louver to Bend Line Gap
        ix. Maximum Up / Maximum Down Bend
        x. Fold / Hem / Extrude Counts
        xi. Minimum Taper / Die Cut to Bend Line Gap
    C. Software Saves DXF Flat File to Output Location

6. When the file conversion process is complete, the following message is displayed:

Down 140 Deg. R 0.03

Down 180 Deg. R 0.01

Down 90 Deg. R 0.03

Down 90 Deg. R 0.03

Down 90 Deg. R 0.03

Up 90 Deg. R 0.03

Up 45 Deg. R 0.03

Down 90 Deg. R 0.03

Up 90 Deg. R 0.03

Up 90 Deg. R 0.03

Up 90 Deg. R 0.03

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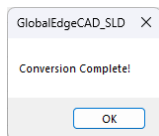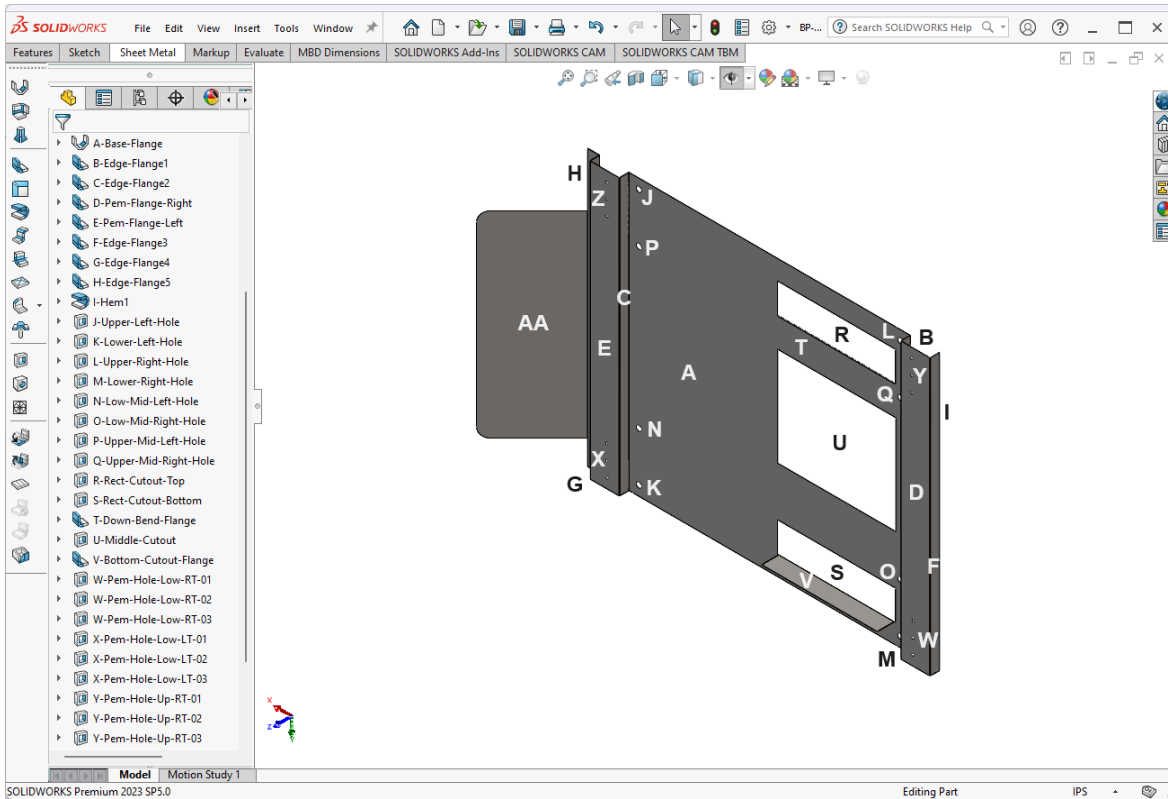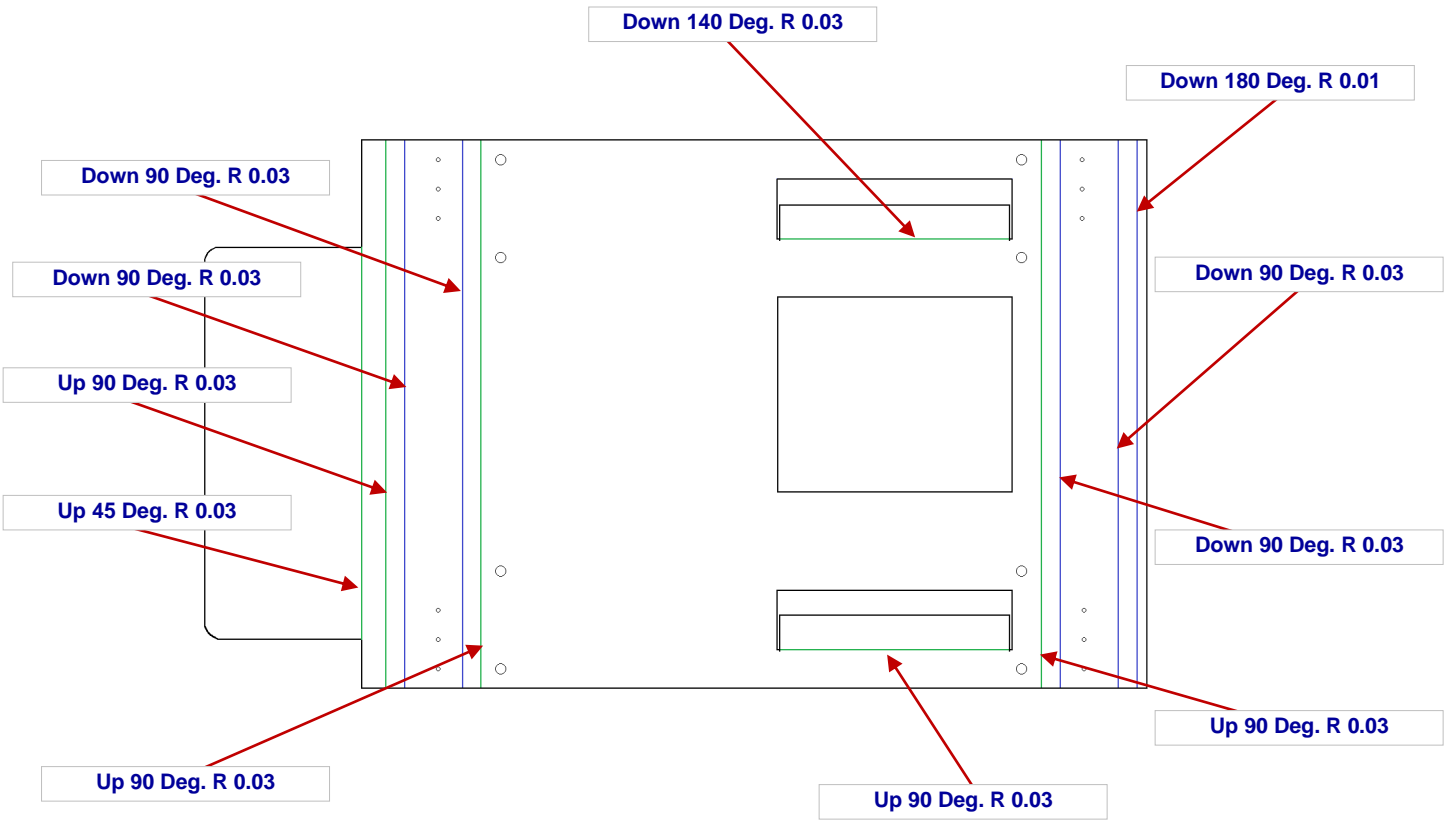
		BP Minimum	BP Maximum	Minimum	Maximum
	Flat Length	Flat Length	Flat Length	Mfg. Test	Mfg. Test
Total Part Flat Size:	96.337	6.000000	96.000000	Pass	Fail
	Flat Width	Flat Width	Flat Width	Minimum	Maximum
Total Part Flat Size:	56.000	4.000000	84.000000	Pass	Pass
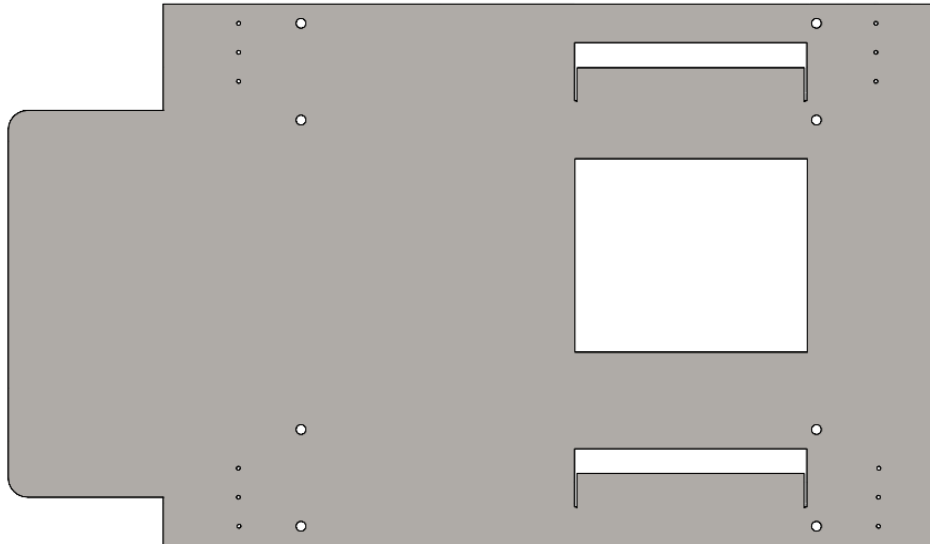
	Feature Name	Flange Width
A-Base-Flange:	D1@Sketch1	57.375
		Flange Length
	D2@Sketch1	56.000

	Feature Name	Flange Width	Bend Process Width Minimum	Bend Process Width Maximum	Mfg. Test	Flange Length
B-Edge-Flange1:	D7@B-Edge-Flange1	2.000	1.500000	24.000000	Pass	56.000
C-Edge-Flange2:	D7@C-Edge-Flange2	2.000	1.500000	24.000000	Pass	56.000
D-Pem-Flange-Right:	D7@D-Pem-Flange-Right	6.000	1.500000	24.000000	Pass	56.000
E-Pem-Flange-Left:	D7@E-Pem-Flange-Left	6.000	1.500000	24.000000	Pass	56.000
F-Edge-Flange3:	D7@F-Edge-Flange3	2.000	1.500000	24.000000	Pass	56.000
G-Edge-Flange4:	D7@G-Edge-Flange4	2.000	1.500000	24.000000	Pass	56.000
H-Edge-Flange5:	D7@H-Edge-Flange5	2.500	1.500000	24.000000	Pass	56.000

	Flange Width	Flange Length	Degrees	Bend Process Minimum Angle	Bend Process Maximum Angle	Mfg. Test
T-Down-Bend-Flange:	3.500	23.500	140.000	39.000000	135.000000	Fail
V-Bottom-Cutout-Flange:	3.500	23.500	90.000	39.000000	135.000000	Pass

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	Feature Name	Width	Feature Name	Length
I-Hem1:	D8@I-Hem1	1.000		56.000
R-Rect-Cutout-Top:	D2@Sketch41	6.000	D1@Sketch41	24.000
S-Rect-Cutout-Bottom:	D2@Sketch53	6.000	D1@Sketch53	24.000
U-Middle-Cutout:	D1@Sketch61	20.000	D2@Sketch61	24.000

		Y/X-Axis	Hole Diameter	Bend Line	Bend Process	
	Feature Name	From Edge	From BL	From Tang.	Minimum	Mfg. Test
W-Pem-Hole-Low-RT-01:	D1@Sketch49	2.000	0.375	2.288	2.000000	Pass
	D2@Sketch49	2.500	2.475			
W-Pem-Hole-Low-RT-02:	D2@Sketch50	5.000	0.375	2.288	2.000000	Pass
	D1@Sketch50	2.500	2.475			
W-Pem-Hole-Low-RT-03:	D2@Sketch54	8.000	0.375	2.288	2.000000	Pass
	D1@Sketch54	2.500	2.475			
X-Pem-Hole-Low-LT-01:	D1@Sketch51	2.000	0.375	2.288	2.000000	Pass
	D2@Sketch51	2.500	2.475			
X-Pem-Hole-Low-LT-02:	D2@Sketch70	5.000	0.375	2.288	2.000000	Pass
	D1@Sketch70	2.500	2.475			
X-Pem-Hole-Low-LT-03:	D2@Sketch73	8.000	0.375	2.288	2.000000	Pass
	D1@Sketch73	2.500	2.475			
Y-Pem-Hole-Up-RT-01:	D2@Sketch55	2.000	0.375	1.988	2.000000	Fail
	D1@Sketch55	2.200	2.175			
Y-Pem-Hole-Up-RT-02:	D2@Sketch56	5.000	0.375	1.988	2.000000	Fail
	D1@Sketch56	2.200	2.175			
Y-Pem-Hole-Up-RT-03:	D2@Sketch57	8.000	0.375	1.988	2.000000	Fail
	D1@Sketch57	2.200	2.175			
Z-Pem-Hole-Up-LT-01:	D2@Sketch58	2.000	0.375	2.288	2.000000	Pass
	D1@Sketch58	2.500	2.475			
Z-Pem-Hole-Up-LT-02:	D2@Sketch59	5.000	0.375	2.288	2.000000	Pass
	D1@Sketch59	2.500	2.475			
Z-Pem-Hole-Up-LT-03:	D2@Sketch60	8.000	0.375	2.288	2.000000	Pass
	D1@Sketch60	2.500	2.475			

		Y-Axis		X-Axis		X-Axis	Bend Line
	Feature Name	From Edge	Feature Name	From Edge	Hole Dia.	From BL	From Tang.
J-Upper-Left-Hole:	D1@Sketch33	2.000	D2@Sketch33	2.000	1.000	1.975	1.475
K-Lower-Left-Hole:	D1@Sketch34	2.000	D2@Sketch34	2.000	1.000	1.975	1.475
L-Upper-Right-Hole:	D2@Sketch35	2.000	D1@Sketch35	2.000	1.000	1.975	1.475
M-Lower-Right-Hole:	D2@Sketch36	2.000	D1@Sketch36	2.000	1.000	1.975	1.475
N-Low-Mid-Left-Hole:	D2@Sketch37	12.000	D1@Sketch37	2.000	1.000	1.975	1.475
O-Low-Mid-Right-Hole:	D2@Sketch38	12.000	D1@Sketch38	2.000	1.000	1.975	1.475
P-Upper-Mid-Left-Hole:	D2@Sketch39	12.000	D1@Sketch39	2.000	1.000	1.975	1.475
Q-Upper-Mid-Right-Hole:	D2@Sketch40	12.000	D1@Sketch40	2.000	1.000	1.975	1.475

6. Select **"Test Results"** option to display following screen form:

7. Select *"Row 4"* for results of failed Parameter (Maximum Flat Length):

Global Edge Integrated Manufacturing as part of the *"Manufacturability Test"* process, the software will automatically match each sheet metal part being processed with the appropriate Bend Process. This is accomplished by comparing Material, Thickness, and Bend Radius with the matching user defined Bend Process. Within each Bend Process, the user can define the appropriate Design Parameter Rules to match the machine tool tooling capabilities.

On the above screen form, the results of the *"Manufacturability Test"* lists a failed parameter with the result *"Part Down Pem Too Close to Bend Line"* where a Pem Hole is 1.800 inches from a bend line, when the minimum is 2.000 inches. This is one of 22 tests that are performed on each sheet metal part. To correct this error, the Design Engineer can then make the appropriate change to the SolidWorks Sheet Metal Part, then repeat the above steps and retest the part.

The software also records a test history of each test and subsequent test that is performed on the sheet metal part.

8. Select *"Report"* option to display the following screen:
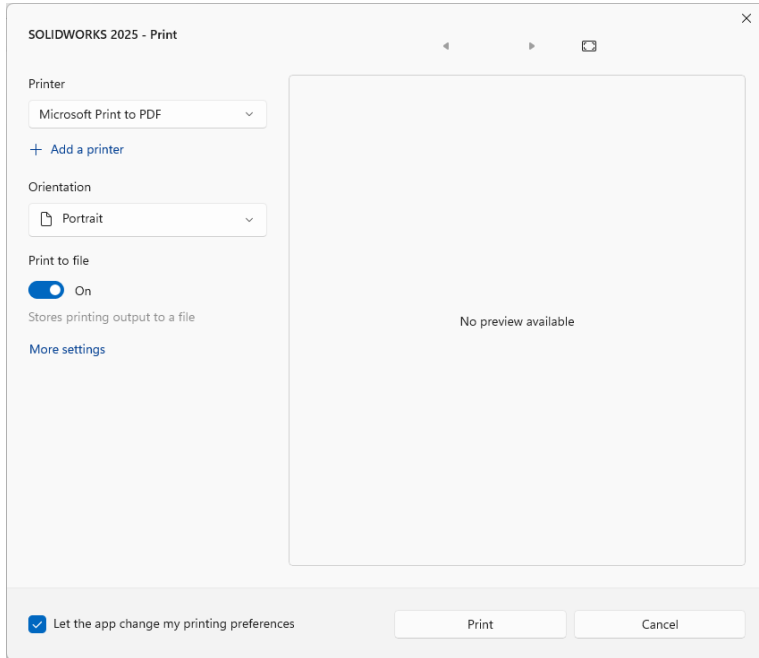
9. Select *"Report"* option to display the following screen:
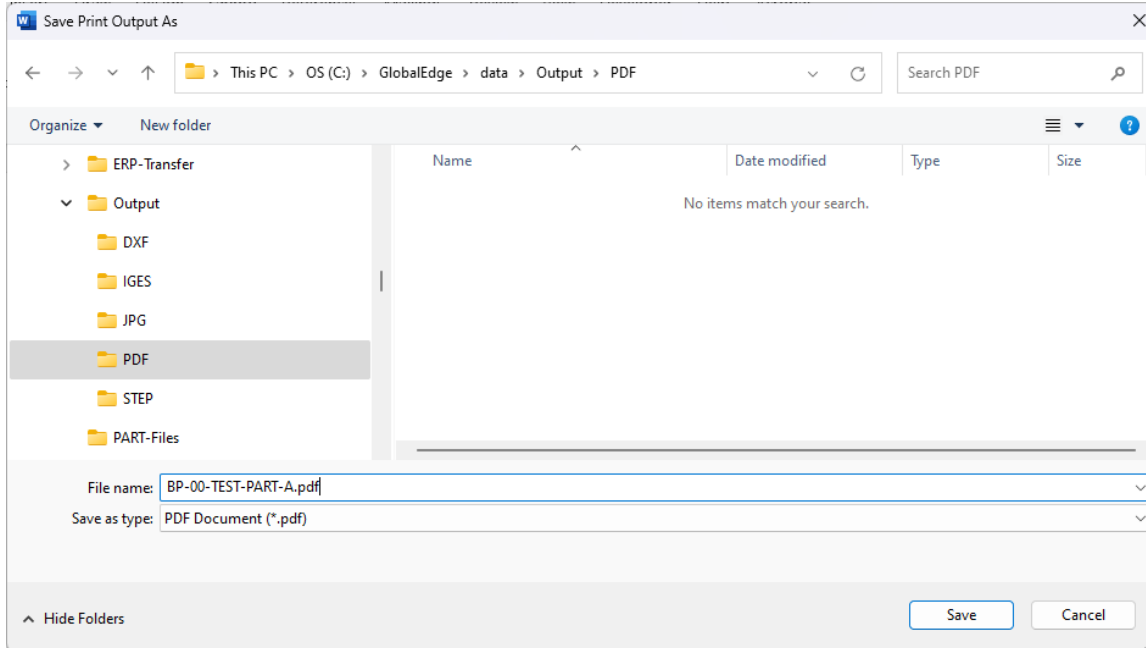
10. Select *"Report"* option to display the following screen:

Global Edge CAD Part Parameter Report

Global Edge CAD Part Parameter Report

PART # / DESCRIPTION
BP-00-TEST-PART-A
BEND PROCESS TEST PART A
MTL. TYPE: SS - AISI 304
18 GA - Thick: 0.05000 - Bend Rad: 0.025

Category: SHEET METAL
Material: 304-4 STAINLESS STEEL
Ship Weight: 62.7778 lbs
Setup Cost: 0.00
Process Cost: 0.00
Component Cost: 0.00
Rollup Cost: 0.00
Standard Cost: 0.00

CAD Part Parameters

Par #	Parameter Name	Value	UOM	Par #	Parameter Name	Value	UOM
1	Sheet_Length:	0.000000	inches	32	Min_Die_Cutout:		inches
2	Sheet_Width:	0.000000	inches	33	Up_Bends:	5	-
3	Blank_Length:	0.000000	inches	34	Int_Up_Bends:	0	-
4	Blank_Width:	0.000000	inches	35	Max_Up_Bend:	0.000000	-
5	Material_Thickness:	0.050000	inches	36	Down_Bends:	6	-
6	Perimeter:	299.885590	inches	37	Int_Down_Bends:	0	-
7	Flat_Length:	96.336549	inches	38	Max_Down_Bend:	0.000000	-
8	Flat_Width:	56.000000	inches	39	Fold_Count:	11	-
9	Round_Holes:	20	-	40	Hem_Count:	1	-
10	Round_Sizes:	2	-	41	Extrude_Count:	0	-
11	Obround_Holes:	1	-	42	Bend_Radius:	0.025000	inches
12	Obround_Sizes:	1	-	43	Cutting_Method:		
13	Rectang_Holes:	1	-	44	Cutter_Ref_Num:		
14	Rectang_Sizes:	1	-	45	Certified_Mtrl:		
15	Other_Holes:	2	-	46	Material:	304-4	
16	Other_Sizes:	1	-	47	Cutout_Distance:	380.320072	inches
17	Num_Cutouts:	24	-	48	Part_Distance:	68.597719	inches
18	Cutout_Perimeter:	308.998005	inches	49	Blank:		
19	Min_Bend_Length:	23.500000	inches	50	Emboss:		
20	Max_Bend_Length:	56.000000	inches	51	Turret:		
21	Min_Bend_Angle:	45.000000	inches	52	Laser:		
22	Max_Bend_Angle:	90.000000	inches	53	Plasma:		
23	Min_Flange_Width:	4.000000	inches	54	Water_Jet:		
24	Max_Flange_Width:	12.000000	inches	55	Press_Brake:		
25	Min_Pem_Gap:	0.346674	inches	56	Panel_Bender:		
26	Min_Dn_Pem_Gap:	1.800000	inches	57	Pem_Nuts:		
27	Min_Emboss_Gap:	3.000000	inches	58	Pem_Studs:		
28	Min_Dn_Emboss_Gap:		inches	59	Grain:		
29	Min_Louver_Gap:		inches	60	Weld:		
30	Min_Dn_Louver_Gap:		inches	61	Deburr:		
31	Min_Taper_Bl_Gap:	0.000000	inches	62	Paint:		

DateTime: 01-31-2025 14:34:49   Page: 1

8.50 x 11.00 in

11. Select **"DXF Image"** tab to display DXF Image:
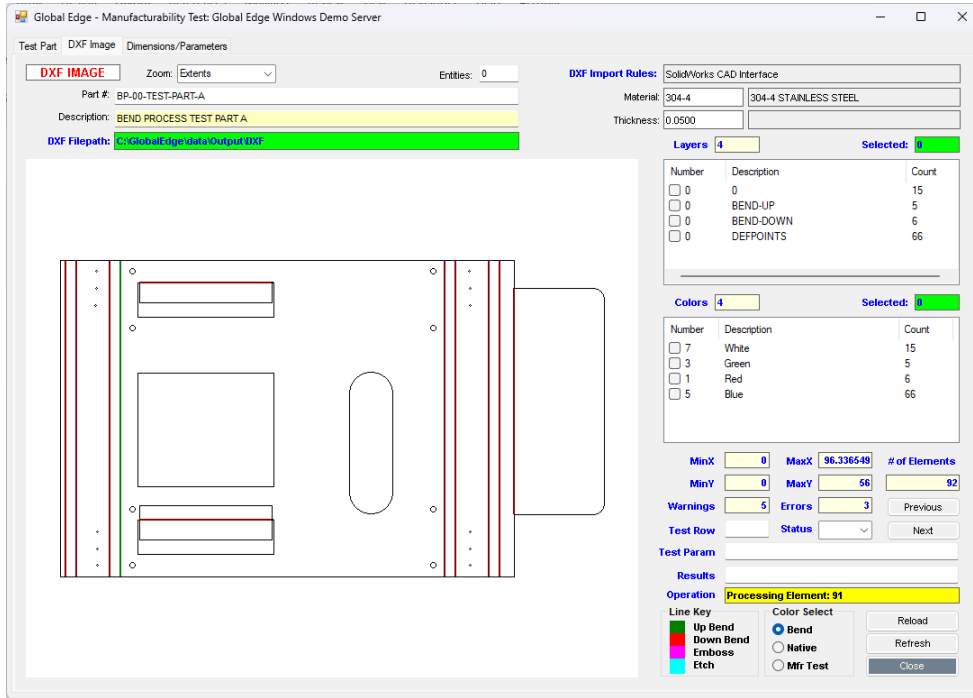
12. Select **"Dimension/Parameters"** tab to display the dimension part parameters for the current part:
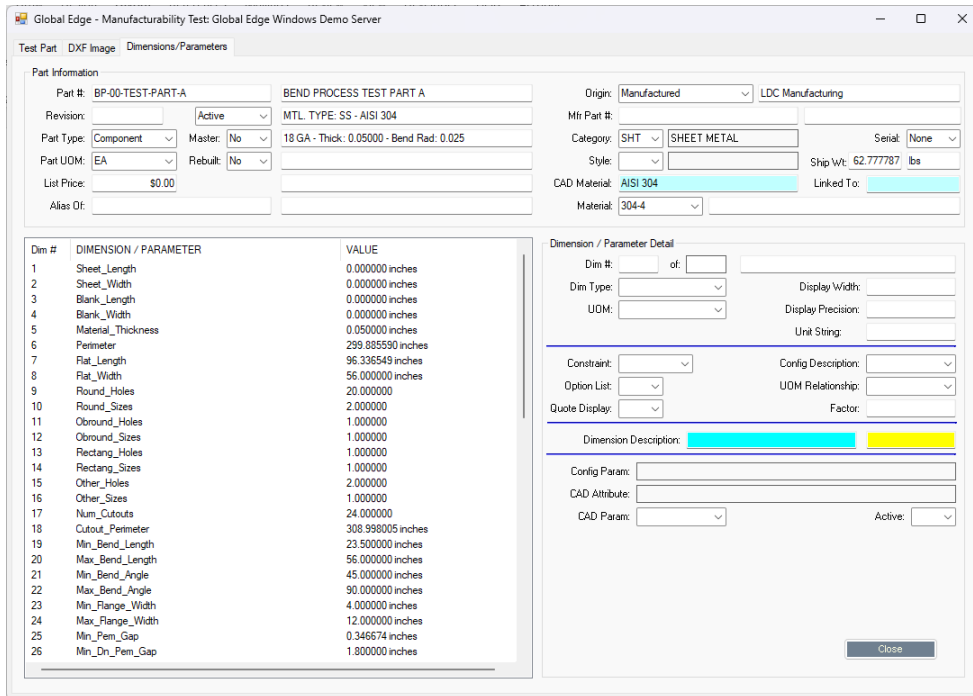
2.2 – Assembly Model Processing

These steps illustrate the processing of a SolidWorks assembly.

Workflow Steps

1. Select *"File > Open"* and select *"SLD-000-CAB-CRS-325616-0001.sldasm"* SolidWorks assembly file:
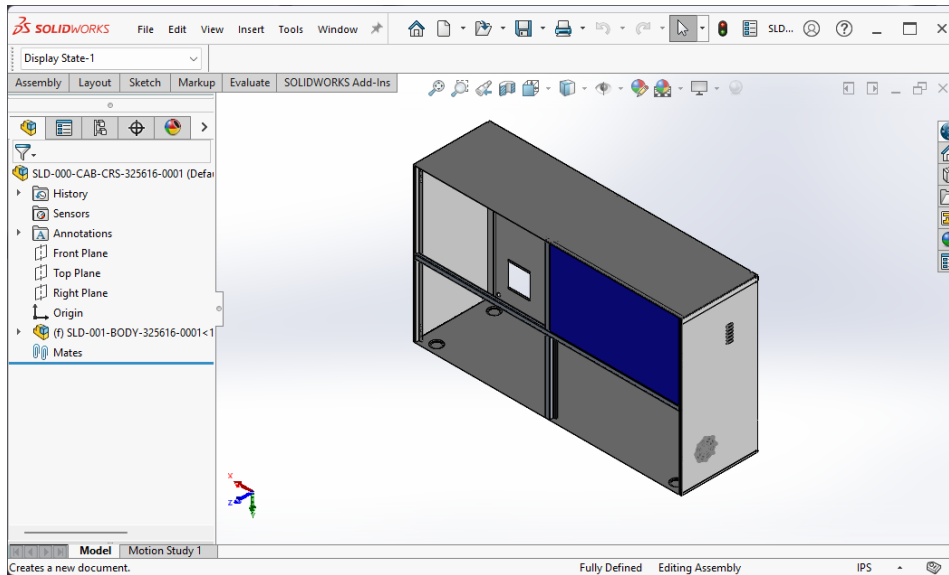
2. Select *"Tools > Global Edge > Export Files"* option to display the following screen form:
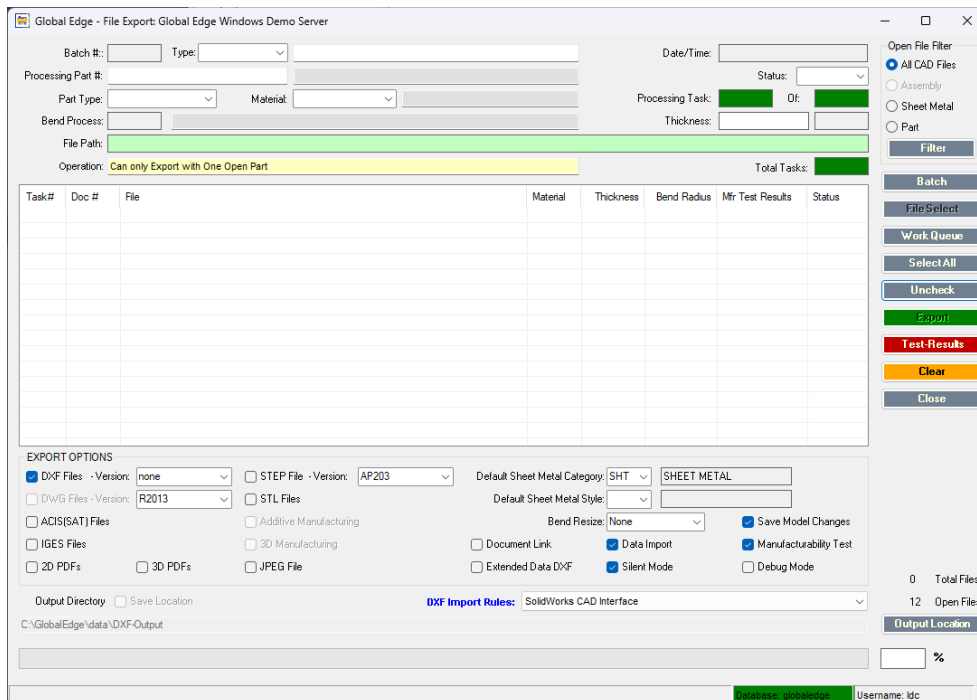
3. Check *"Sheet Metal"* option followed by *"Filter"* option to filter out sheet metal parts contained in the assembly:
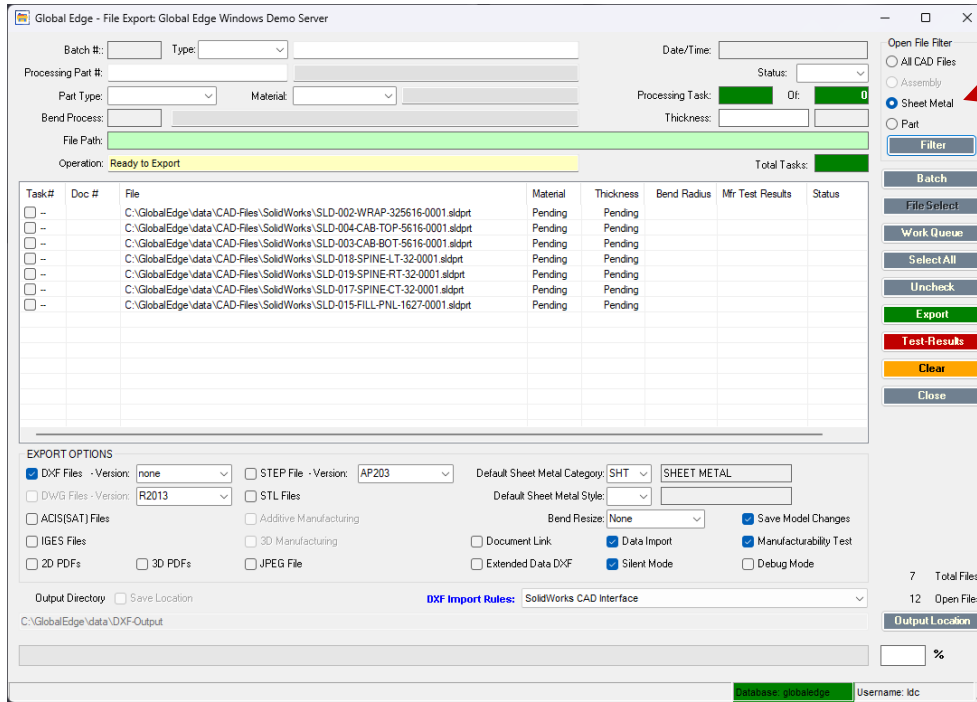
4. Select *"Batch"* option to create a *"Batch #"* including a Batch Description for the sheet metal part selected on the previous screen:
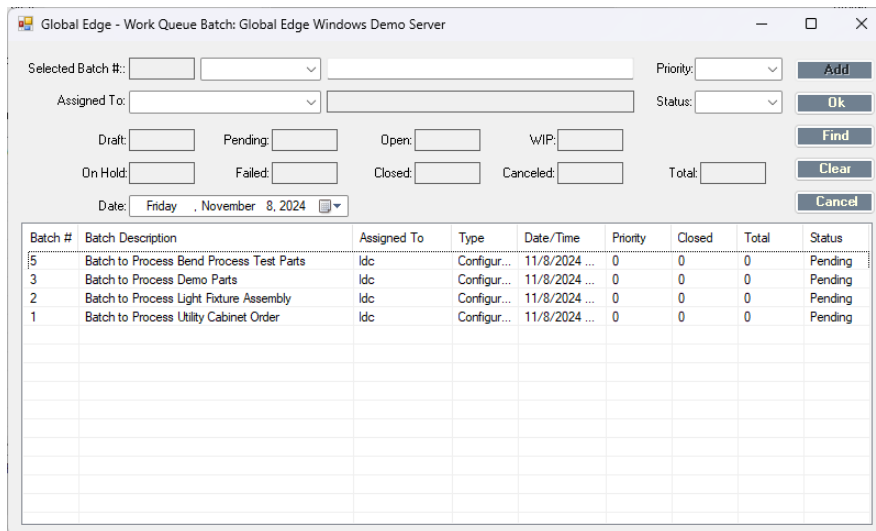
5. Select **"OK"** option to return to the previous screen:
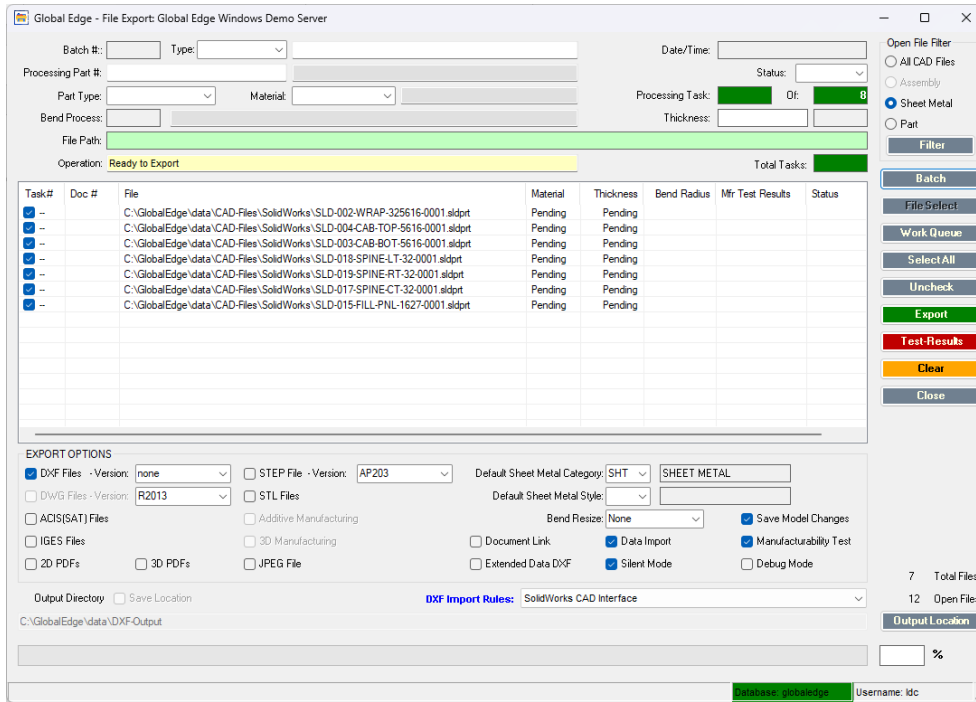
6. When the conversion process is completed, select **"OK"** and Export Screen will be updated:
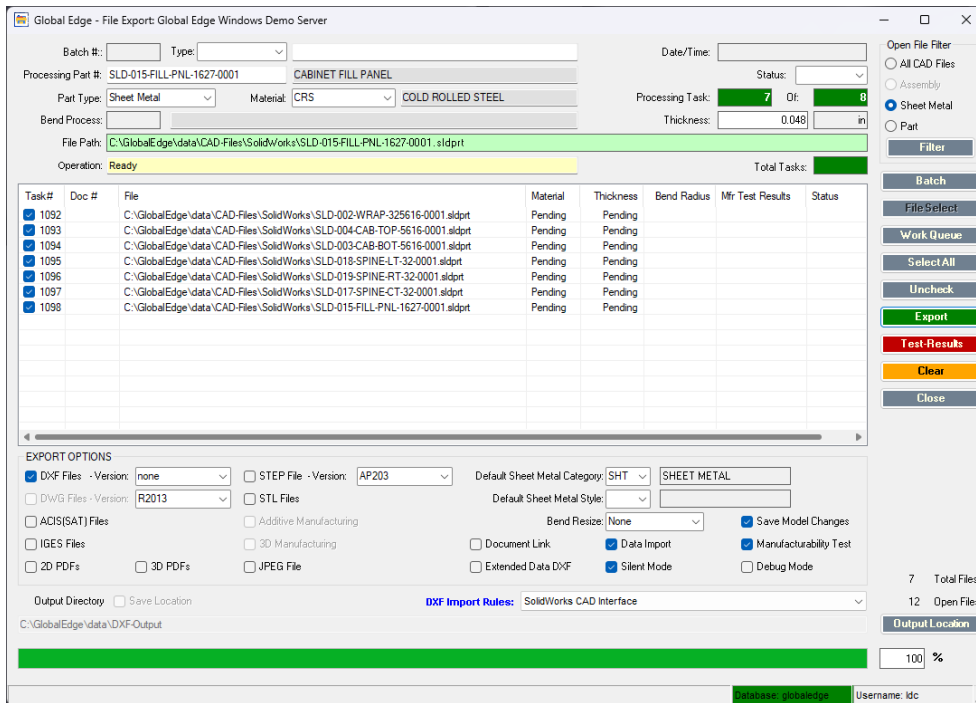
2.3 – Sheet Metal Part Batch Processing / Manufacturability Testing

These steps illustrate the processing of a batch of SolidWorks sheet metal parts.

Workflow Steps

1. The first step is to launch SolidWorks:
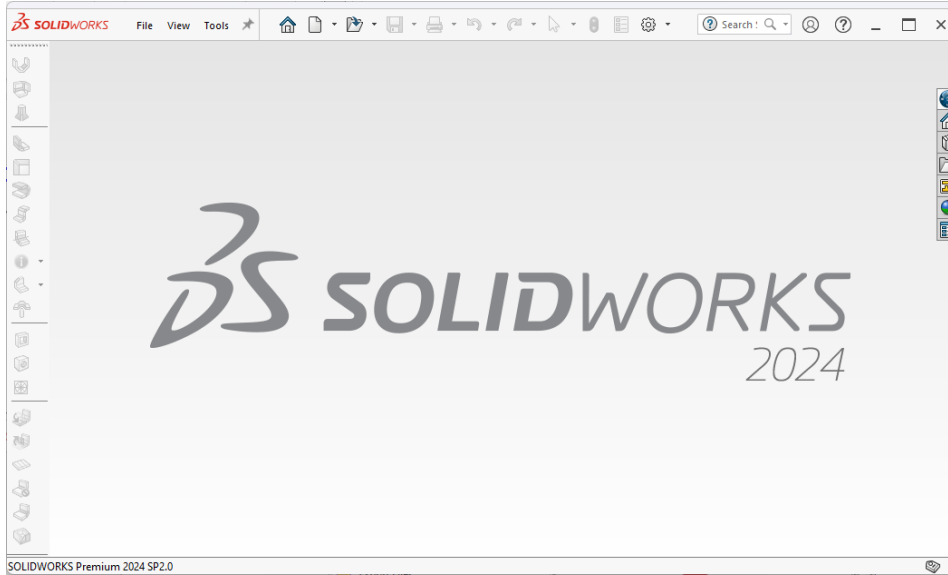
2. Select **"Tools > Global Edge > Export Files"** option:
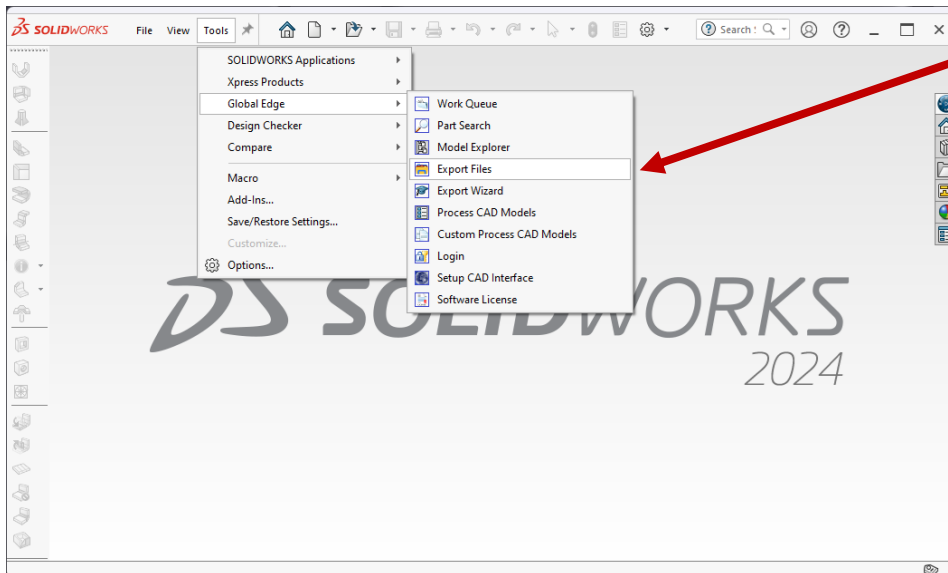
3. Select *"Batch"* option:
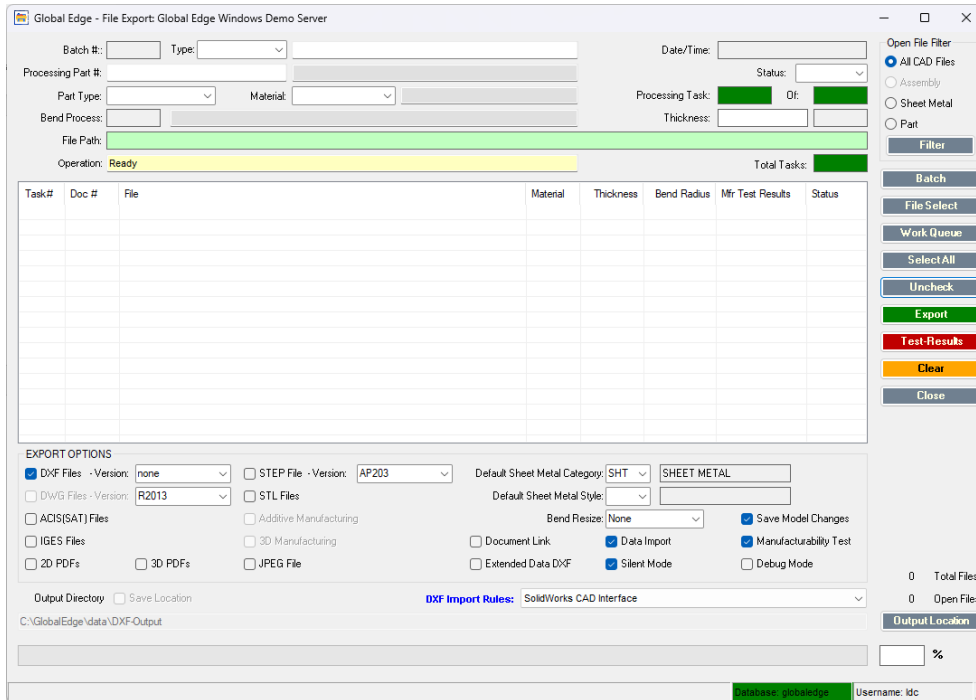
4. Highlight *"Batch #: 5"* followed by *"OK"* option:
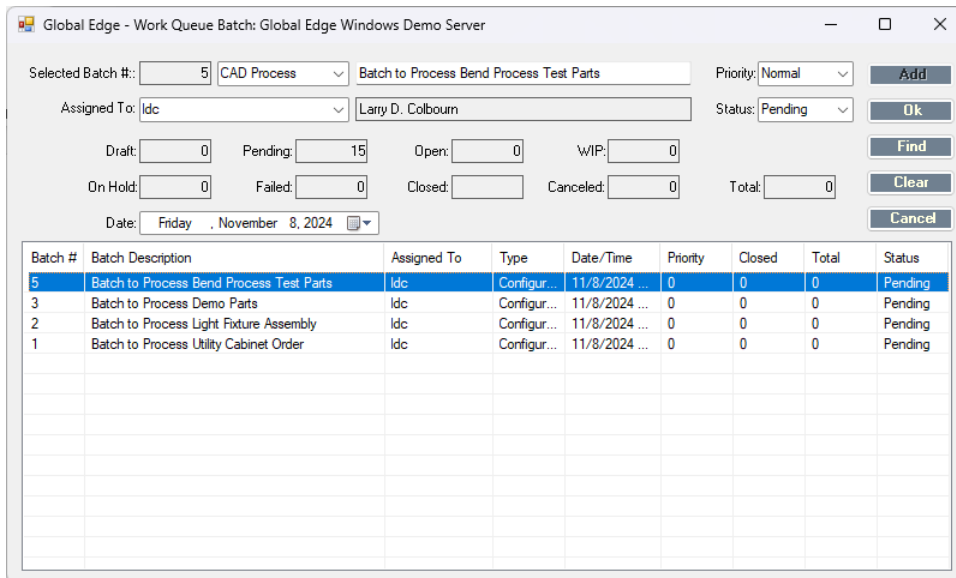
5. Check first five parts to process, then select *"Export"* option:
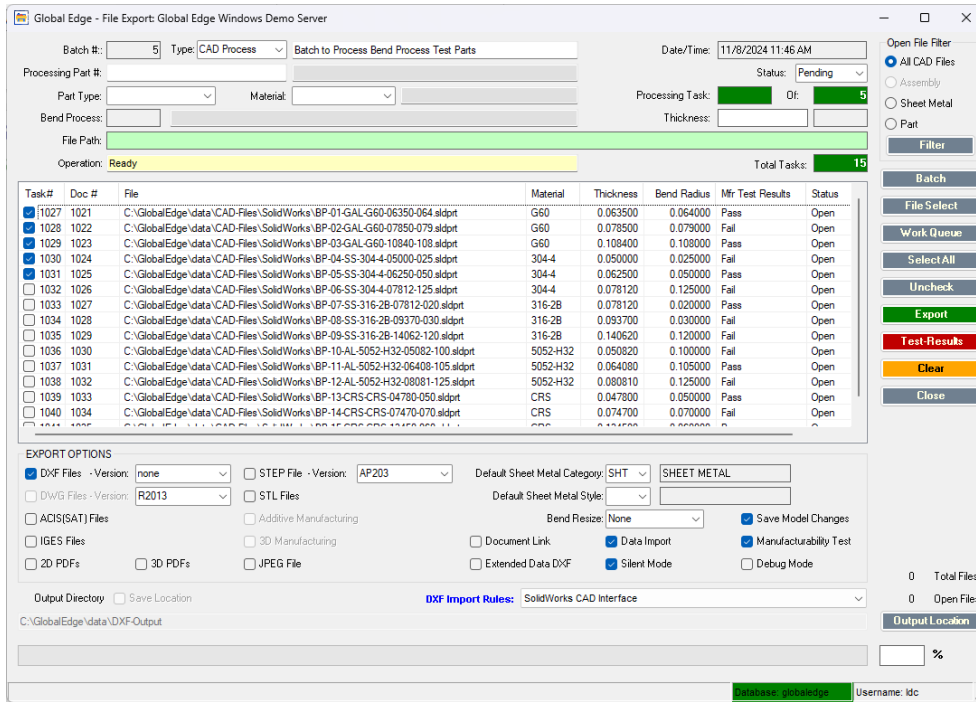
7. When the conversion process is completed, select *"OK"* and Export Screen will be updated:
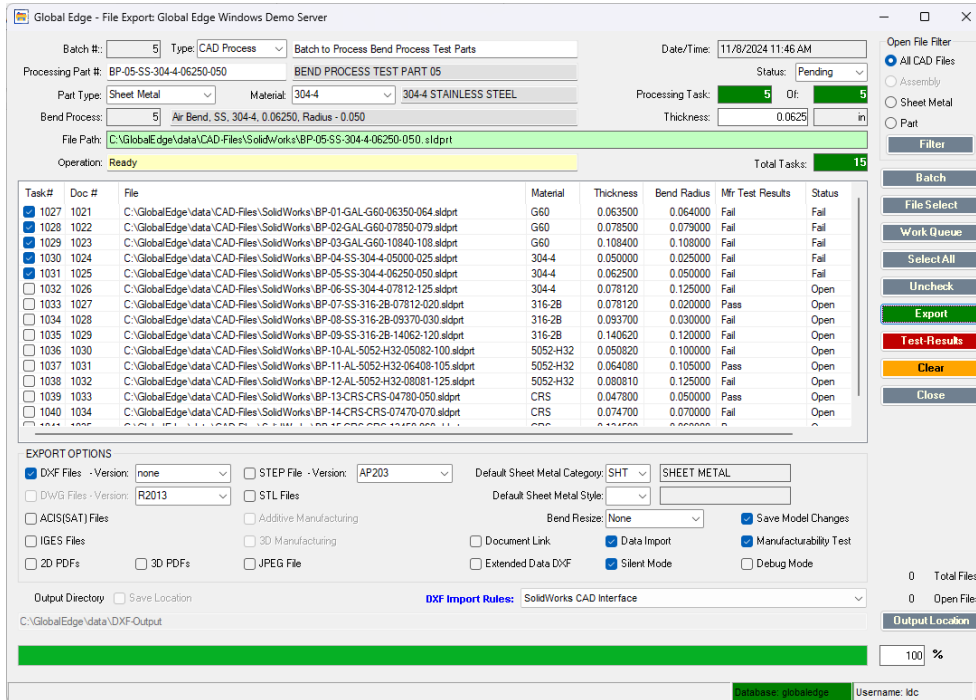
8. Highlight part and select *"Test Results"* option to display the following screen:

(T-603) "manufacture_test" – Manufacturability Test Table (T-603-dem_mfgt.unl)

TEST #	TEST DATE	TASK #	PART #	PROCESS	BP #	TEST RESULTS	STATUS
1	2023-05-26 13:00:30	1001	BP-01-GAL-G60-06350-064	BEND	1	Passed Bend Process Test with Warning	Pass
2	2023-05-26 13:00:30	1002	BP-02-GAL-G60-07850-079	BEND	2	Failed Bend Process Test	Fail
3	2023-05-26 13:00:30	1003	BP-03-GAL-G60-10840-108	BEND	3	Passed Bend Process Test with Warning	Pass
4	2023-05-26 13:00:30	1004	BP-04-SS-304-4-05000-025	BEND	4	Failed Bend Process Test	Fail
5	2023-05-26 13:00:30	1005	BP-05-SS-304-4-06250-050	BEND	5	Passed Bend Process Test with Warning	Pass
6	2023-05-26 13:00:30	1006	BP-06-SS-304-4-07812-125	BEND	6	Failed Bend Process Test	Fail
7	2023-05-26 13:00:30	1007	BP-07-SS-316-2B-07812-020	BEND	7	Passed Bend Process Test with Warning	Pass
8	2023-05-26 13:00:30	1008	BP-08-SS-316-2B-09370-030	BEND	8	Failed Bend Process Test	Fail
9	2023-05-26 13:00:30	1009	BP-09-SS-316-2B-14062-120	BEND	9	Failed Bend Process Test	Fail
10	2023-05-26 13:00:30	1010	BP-10-AL-5052-H32-05082-100	BEND	10	Failed Bend Process Test	Fail
11	2023-05-26 13:00:30	1011	BP-11-AL-5052-H32-06408-105	BEND	11	Passed Bend Process Test with Warning	Pass
12	2023-05-26 13:00:30	1012	BP-12-AL-5052-H32-08081-125	BEND	12	Failed Bend Process Test	Fail
13	2023-05-26 13:00:30	1013	BP-13-CRS-CRS-04780-050	BEND	13	Passed Bend Process Test with Warning	Pass
14	2023-05-26 13:00:30	1014	BP-14-CRS-CRS-07470-070	BEND	14	Failed Bend Process Test	Fail
15	2023-05-26 13:00:30	1015	BP-15-CRS-CRS-13450-060	BEND	15	Passed Bend Process Test with Warning	Pass

Demo Section 3: Document Interface / Quoting

Global Edge® Integrated Manufacturing starts with the process of receiving RFQ (Request for Quote) information from a potential customer. The quoting stage includes the automated capture, organization, and storage of additional RFQ information such CAD files and product specifications that need to be analyzed for the purpose of developing and accurate sales quote. The sections within this quoting stage include:

3.1 – Outlook Interface / Incoming Information

3.2 – DXF Flat File Processing / Manufacturability Testing

3.3 – Automated Sales Quote / Routing Generation

Section 3: Document Interface / Quoting Overview

The following is an overview of Section 3 and what is illustrated within each of the steps.

- **3.1 – Outlook Interface / Incoming Information:** The steps within this section illustrate how the *Global Edge* software can optionally automate the task of managing incoming request for quote information. Automated tasks illustrated include:
    - o **Automated Capture of Incoming Email Information**
    - o **Automated Generation of Sales Opportunities Linked to Prospect / Customer Record**
    - o **Automated Organization and Storage of Received RFQ Information**

- **3.2 – DXF Flat File Processing / Manufacturability Testing:** The steps within this section illustrate how *Global Edge* automates the importation DXF flat files and the testing of sheet metal parts to help ensure they can be successfully fabricated before reaching the shop floor. Automated tasks illustrated include:
    - o **Automated Importation and Analysis of Sheet Metal Part Parameters**
    - o **Manufacturability Testing**

- **3.3 – Automated Sales Quote Generation:** The steps within this section illustrate how the *Global Edge* software can automatically generate routings based on part parameters from imported DXF Files and rolled up time and material costs. Automated tasks illustrated include:
    - o **Automated Generation of Sales Quote with Imported Parts Attached**
    - o **Automatically Generates Routings from Part Parameters**
    - o **Automatically Rolls Up Costs for Multiple Quantity Production Runs**
    - o **Contact / Sales Opportunity Management**

3.1 – Outlook Interface / Incoming Information

These steps illustrate how the automated quoting process can automatically capture, organize and store incoming RFQ (Request For Quote) information.

Sample Request For Quote – Fabricated Sheet Metal Parts

PAGE: 001

ABC Manufacturing

REQUEST FOR QUOTATION

ABC Manufacturing Company
5000 West Industrial Way
Milwaukee, WI 55555
Phone: 414-555-1100   Fax: 414-555-1101

RFQ #:	ABC-1001-08132017
SUBMIT DATE:	08/14/2017
QUOTE DUE DATE:	08/21/2017
REQ. DELIVERY DATE:	09/20/2017
SHIP METHOD:	Truck
CONTACT:	Robert Smith, V.P. of Engineering
E-MAIL:	rsmith@abc-manufacturing.com
PHONE:	414-555-1100
EXT:	101
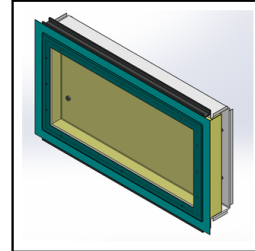
SUBMITTED TO:

LDC Manufacturing, Incorporated
1000 West Product Avenue
P.O. Box 5544
Productionville, WI 55555-5544
United States of America

RFQ INSTRUCTIONS

This Request for Quote is to build a prototype for quality testing prior to full scale production. We would like cost estimates for prototype model and cost estimates for production levels that include: Monthly production runs of: 100 Units, 200 Units, 350 Units, and 500 Units.

ITEM #	PART NUMBER	DESCRIPTION	QTY	UOM	NOTES	IMAGES
1	DEMO-00-LIGHT	LIGHT FIXTURE ASSEMBLY		each	Requires 24.000 x 48.000 inch Outside dimension	
2	DEMO-01-LENSE-FRAME	LIGHT FIXTURE LENSE FRAME	1.000	each		
3	DEMO-02-LENSE	LIGHT FIXTURE LENSE	1.000	each	Receive from ABC Mfg. for Assembly	
4	DEMO-03-LENSE-BRACKET	LIGHT FIXTURE LENSE BRACKET	1.000	each		
5	DEMO-04-HOUSING-FLANGE	LIGHT FIXTURE HOUSING FLANGE	1.000	each		
6	DEMO-05-LENSE-RET-BRKT	LIGHT FIXTURE LENSE RETAINING BRACKET	1.000	each		
7	DEMO-06-FIXTURE-HOUSING	LIGHT FIXTURE HOUSING	1.000	each		
8	DEMO-07-YOKE-BRACKET	LIGHT FIXTURE YOKE BRACKET	1.000	each		
9	DEMO-10-BOLT	LIGHT FIXTURE BOLT	4.000	each	Requires chrome plated bolt	
10	DEMO-08-DOOR-GASKET	LIGHT FIXTURE DOOR GASKET	1.000	each		
11	DEMO-09-FRAME-CHANNEL	LIGHT FIXTURE FRAME CHANNEL	2.000	each		
12	DEMO-11-NUT	LIGHT FIXTURE NUT	4.000	each	Requires chrome plated nut	

NON-STANDARD CUSTOMIZATIONS

Based on projected steel prices, please recommend optimal choices for next 12 months.

COMMENTS / NOTES

Potential delivery would be by the 15th of each month.

Workflow Steps

1. Receive RFQ (Request For Quote) in Microsoft Outlook including attachments:
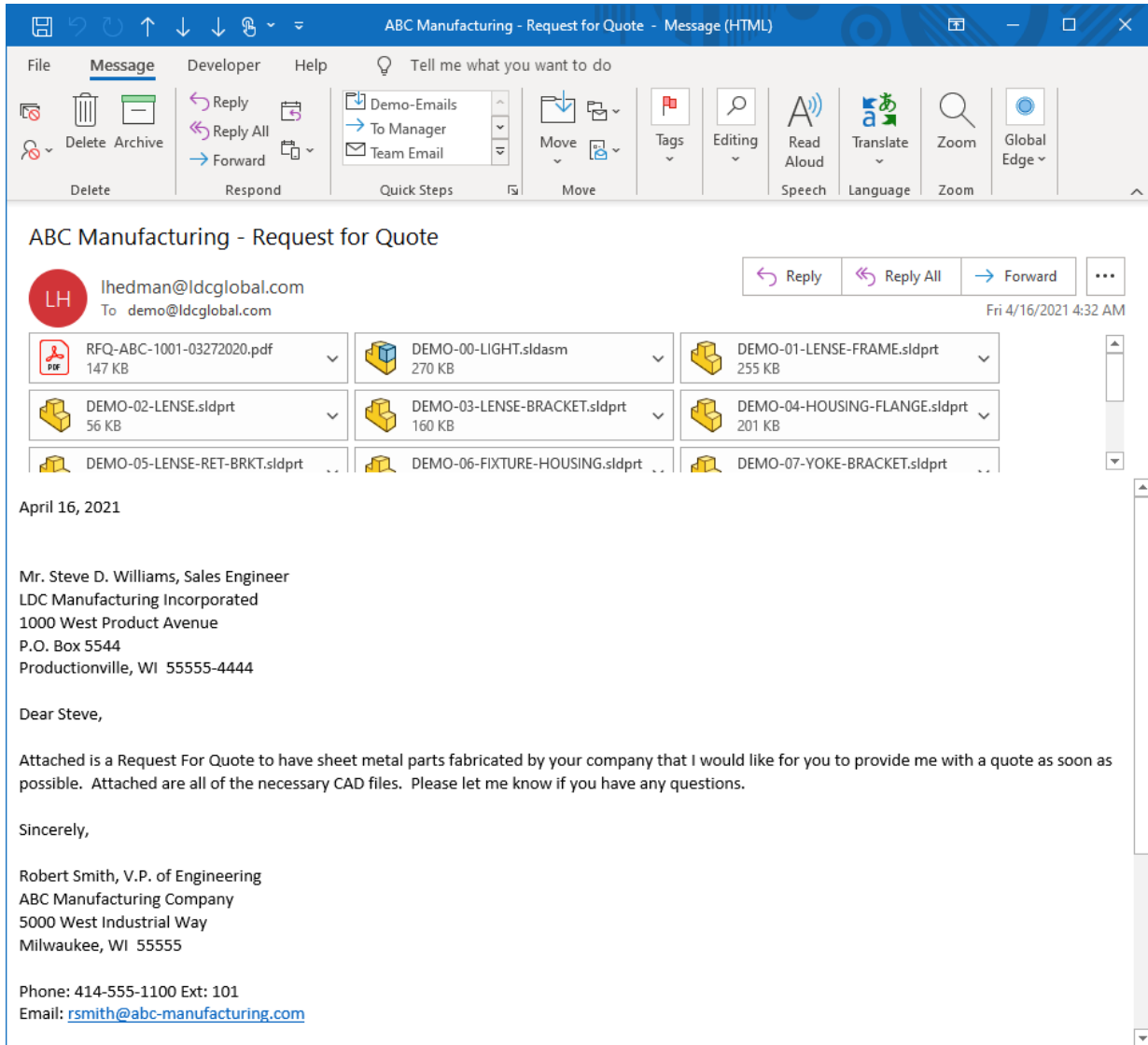
2. Select **"Global Edge > Inbound"** icon to execute capturing attachments of inbound email:
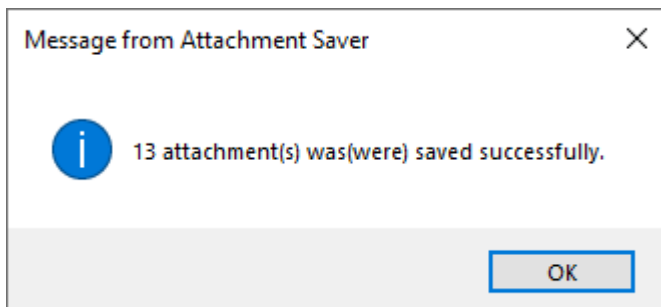
3. After selecting *"OK"*, the following *Global Edge – Outlook Interface* screen is displayed:

4. Select the *"Opportunity"* option to display the current Sales Opportunities that are attached the existing ABC MANUFACTURING customer record stored in the *Global Edge* database:

5. Fill in upper-right portion of screen with Sales Opportunity information, then select *"Add/Save"* option:
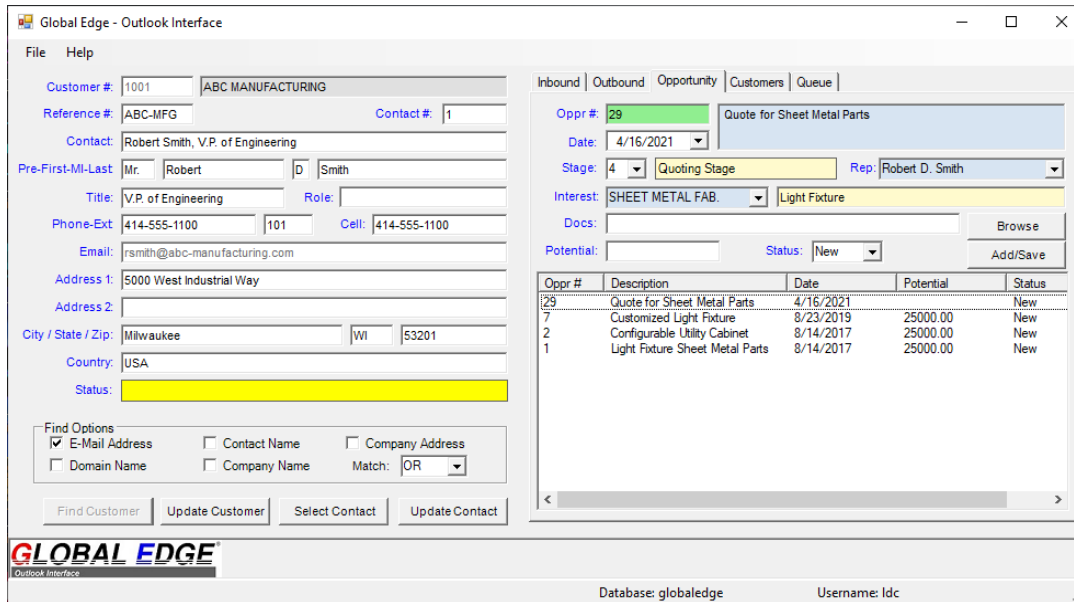
6. Select *"Browse"* option and the following prompt is displayed:
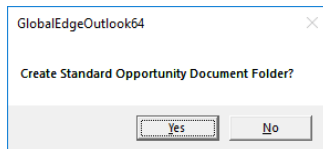
7. When answering *"Yes"* option, the following screen is displayed:
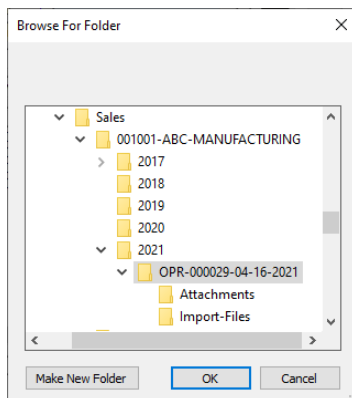
8. Highlight new Sales Opportunity folder and select **"OK"** option and the following prompt is displayed:
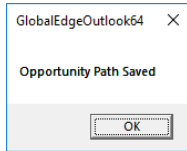
9. Select **"OK"** option which adds the selected document path to the below screen:
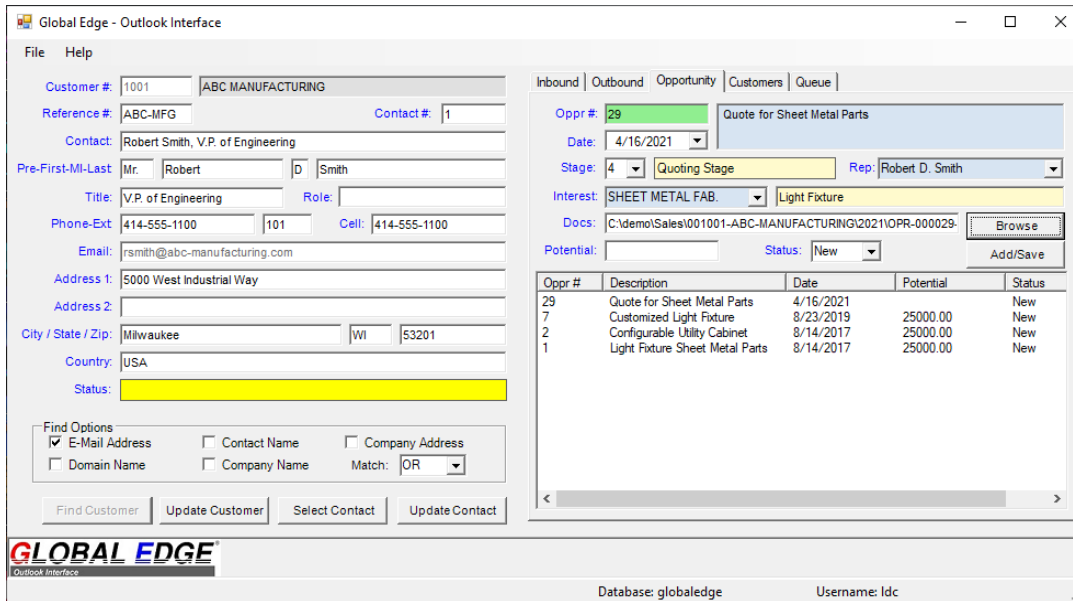
10. Select **"Inbound"** tab, then select the **"Link E-Mail"** option to update database and move selected attachments to Sales Opportunity folder:
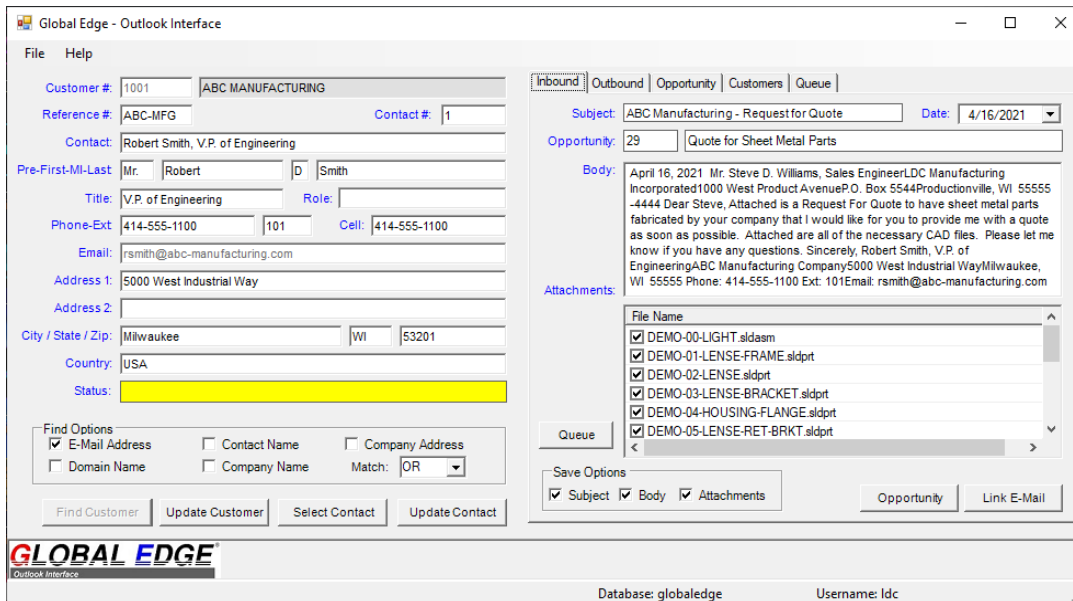
11. Upon completion of software execution, the following message is displayed:
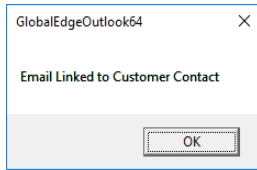
12. The following shows a sample of the folders that are automatically created when a Sales Opportunity is generated and attached to a customer record in the **Global Edge** database including how that attached files are stored:
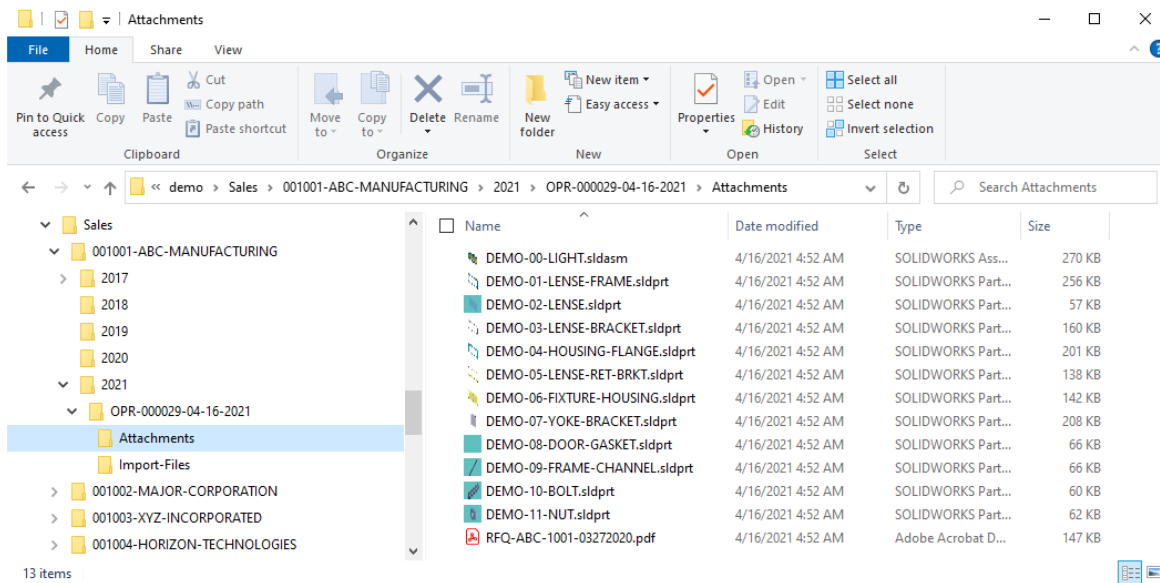
Light Fixture CAD Models
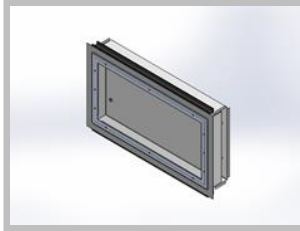
LIGHT-00-LIGHT
LIGHT FIXTURE ASSEMBLY
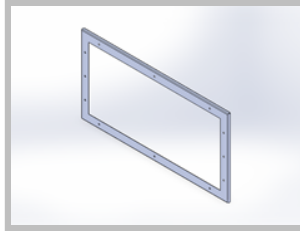
LIGHT-01-LENSE-FRAME
LIGHT FIXTURE LENSE FRAME
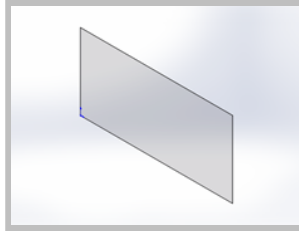
LIGHT-02-LENSE
LIGHT FIXTURE LENSE
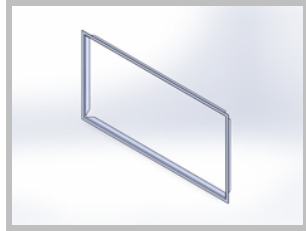
LIGHT-03-LENSE-BRACKET
LIGHT FIXTURE LENSE BRACKET
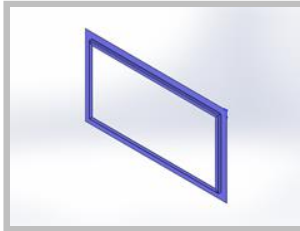
LIGHT-04-HOUSING-FLANGE
LIGHT FIXTURE HOUSING FLANGE
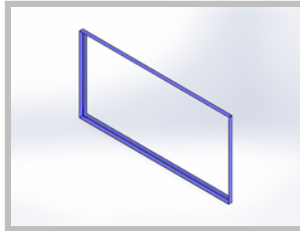
LIGHT-05-LENSE-RET-BRKT
LIGHT FIXTURE LENSE RET. BRACKET
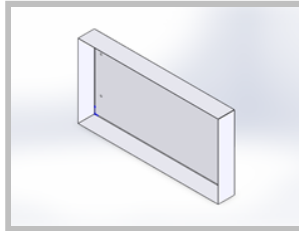
LIGHT-06-FIXTURE-HOUSING
LIGHT FIXTURE HOUSING
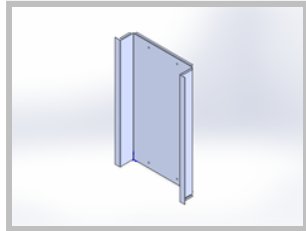
LIGHT-07-YOKE-BRACKET
LIGHT FIXTURE YOKE BRACKET
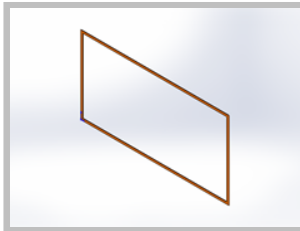
LIGHT-08-DOOR-GASKET
LIGHT FIXTURE DOOR GASKET

LIGHT-09-FRAME-CHANNEL
LIGHT-09-FRAME-CHANNEL
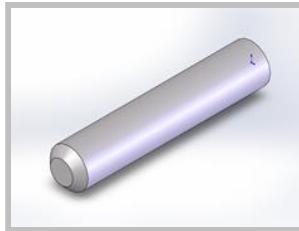
LIGHT-10-BOLT
LIGHT FIXTURE BOLT
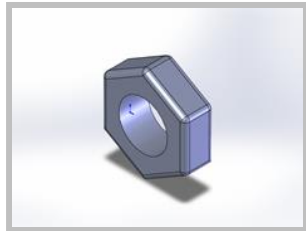
LIGHT-11-NUT
LIGHT FIXTURE NUT

3.2 – DXF Flat File Processing / Manufacturability Testing

Global Edge® Engineering Assistant provides automated CAD model analysis to automatically analyze CAD part parameters and store these parameters in an SQL database. These CAD part parameters can then be utilized to automatically generate optimal routings including time and material cost rollups. Additionally, these CAD part parameters can be incorporated into DXF flat files to facilitate automated bend program generation for both press brakes and panel benders.

Workflow Steps

1. The first step is to open the ***Global Edge® Engineering Assistant*** software by clicking on the following desktop icon:
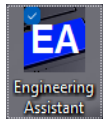
2. This will display the following screen form and menu options. Select ***"Import > Import CAD Files"*** option to display Import CAD Files screen. Select ***"Create DXF(s)"*** option to automatically generate 2D DXF Flat Files from 3D SolidWorks CAD Models. This process includes automatically embedding Extended Data into the 2D DXF Flat Files to drive Automated Bend Program Generation, Automated Routing Generation, and Automated Sales Quote Generation:
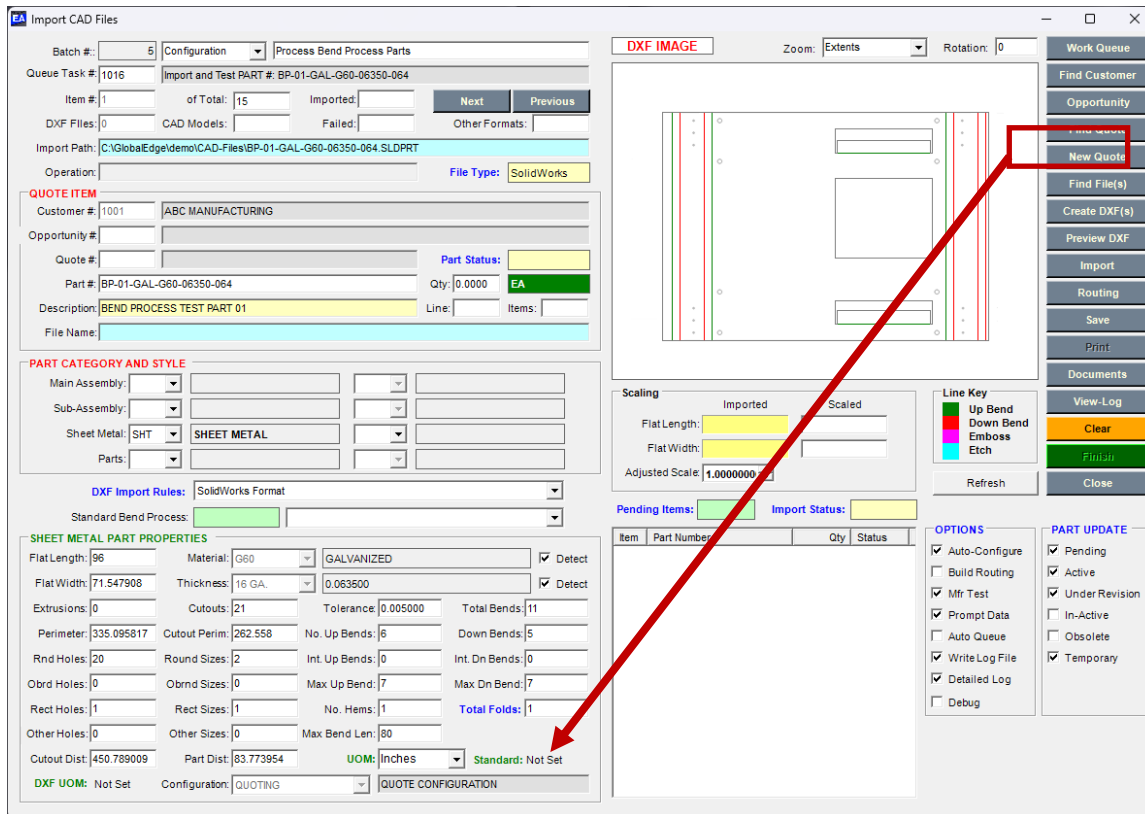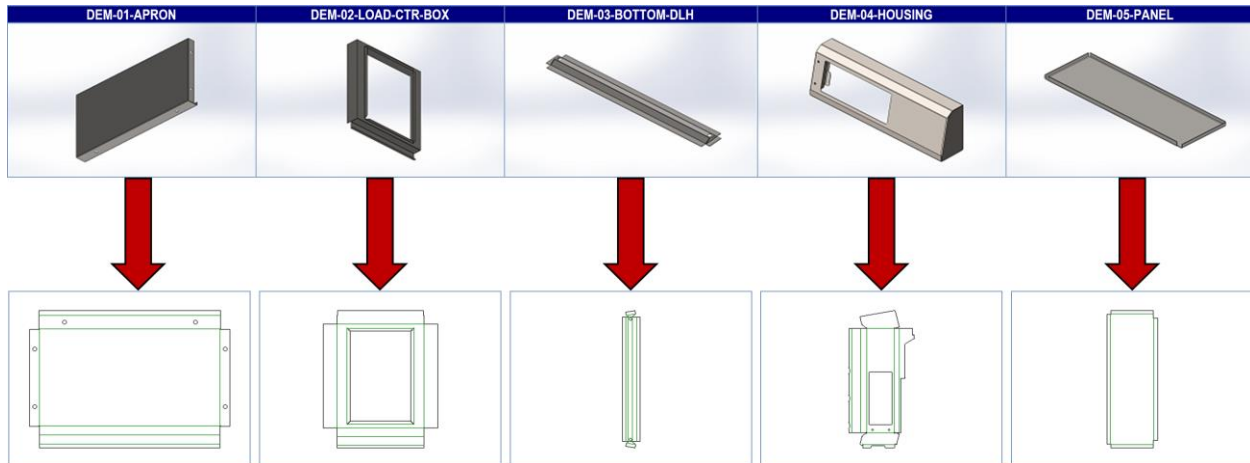
3. Select *"Find File(s)"* option and select the DXF file(s) to process with the Select File screen:
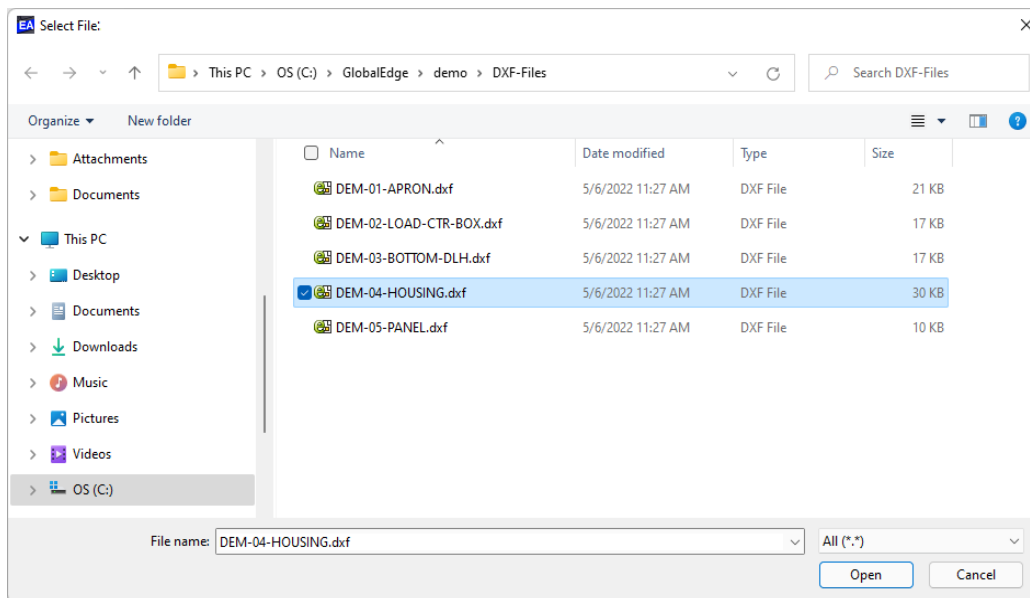
DXF File Processing (without CAD System)

Global Edge® Engineering Assistant provides the capability to process DXF Flat Files without the use of a 3D CAD System such as SolidWorks, Solid Edge, Inventor, Pro/ENGINEER (Creo), Catia, etc. This includes the same capabilities included in the *Global Edge SolidWorks CAD Interface* minus the capability of producing the DXF Flat File from the associated 3D Sheet Metal Part Model.

1. This displays the selected DXF file on the Import CAD Files screen:

Global Edge – Import DXF Files screen provides an easy method to import 2D DXF Sheet Metal Parts. The purpose of this functionality is to import the drawing attribute information into the *Global Edge* Engineering Data Warehouse for the purpose of Automated Routing Generation. Once a sheet metal part is imported, information such as: Part Height, Part Width, Part Perimeter, Number of Folds, Number of Hems, Number of Cutouts, and Cutout Perimeter is then stored in the *Global Edge* system.

The *Global Edge Engineering Assistant* provides the ability to process DXF Flat Files without the need of a 3D CAD system. The only required user input is specifying Material, Thickness, and Bend Radius if this is not included in the DXF Flat File. The above screen provides the ability to automatically launch an available 3D CAD system such as SolidWorks, Solid Edge, Inventor, Pro/ENGINEER (Creo), Catia, etc. This allows the user to produce DXF Flat Files with the appropriate 3D CAD system and make these files a part of the complete workflow of the *Global Edge* system including Manufacturability Testing and the incorporation Extended Data to each DXF Flat File to facilitate Automated Bend Program Generation.

1. The next step is to select the option to have the software automatically generate routings for the selected part:

Select the **"Build Routing"** check box to have the software automatically generate routings with the ROUTING CONFIGURATION selected in the lower portion of the screen.
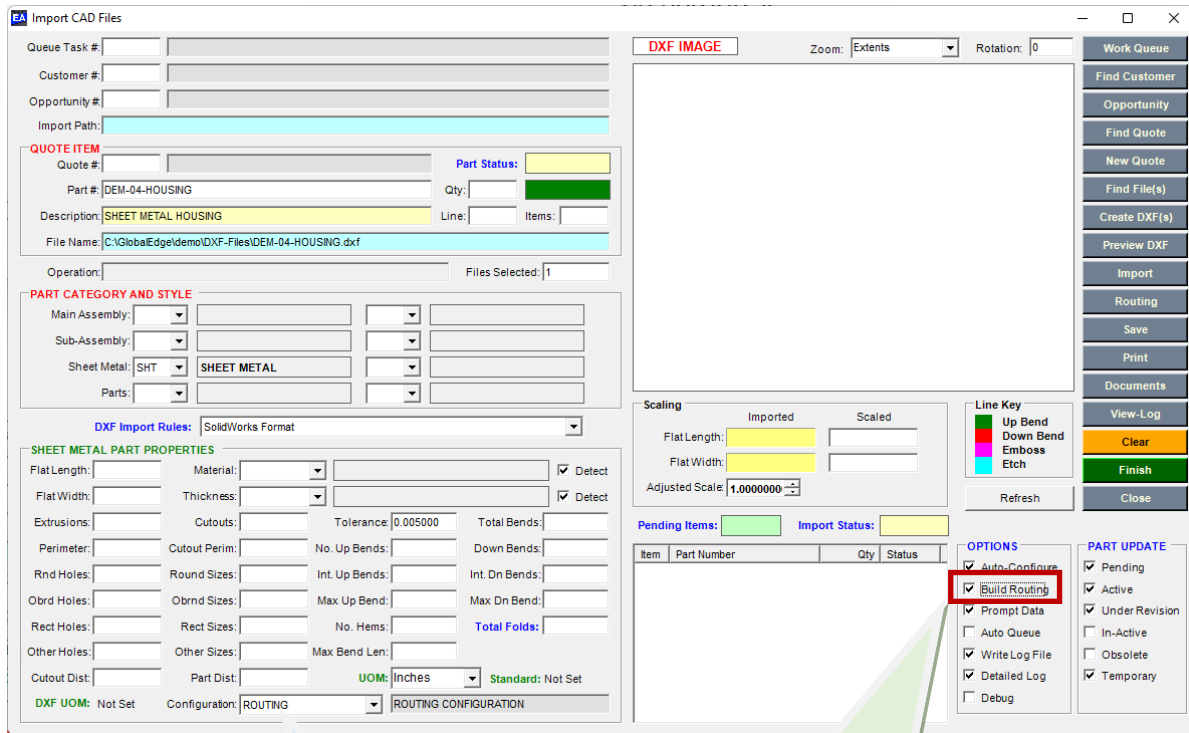
The **Global Edge Engineering Assistant** provides the capability to define routing configuration rules that can generate routings based on imported CAD part parameters. These routing rules provides the ability to automatically calculate laser cut times based on material, thickness and specific laser capabilities that include:

- Laser Cut Speed
- Perimeter Cut Speed
- Cutout Cut Speed
- Piercing Time
- Load / Unload Time

This also includes machine time for punching, bending, welding, painting, assembly, and other related machine times that can be utilized for things like quoting, cost estimating and scheduling.

1. Select **"Import"** option which will display the Part Master Update screen:

The **Global Edge Engineering Assistant** provides the ability to define routing rules that are executed by the built-in routing configurator. This includes the automated generation of cutting times. The choices in the drop-down include:

- Laser
- Turret
- Open

When selecting the **"Open"** option, the routing configurator will determine the optimal method to cut part based on cost and/or delivery time.

The **"Material Properties"** that are comprised of Material and Thickness are automatically displayed if they are defined in the original CAD model. If they are not defined, the user can select the proper material and thickness that will then subsequently be added to the DXF flat file as extended data.

Part Master Update

Part Number: DEM-04-HOUSING
SHEET METAL HOUSING

Customer #:
Cust Part #:

Category/Style
Category: SHT — SHEET METAL
Style:

No Bend Process M: Active — ☑ Auto-Configure

Scaling

	Imported	Scaled
Flat Length:	19.699142	19.699142
Flat Width:	42.193245	42.193245

Adjusted Scale: 1.00000000

Material Properties
Material: 304-4 — 304-4 STAINLESS STEEL
Thickness: 14 GA. — 0.075
Certified: No — UOM: Inches
Default Sheet:
Sheet Length: 0 — Width: 0
Blank Length: 0 — Width: 0
Pieces per Sheet:

Cutting Process
Cutting Method: Laser
Asset #:
Config: ROUTING — ROUTING CONFIGURATION

Standard Bend Process
Process #:
Radius: — UOM:
Model IR:

Editable Part Parameters
UOM inches

Extrusions:	0	Down Bends:	8
No. Up Bends:	0	Int. Dn Bends:	0
Int. Up Bends:	0	Max Dn Bend:	0
Max Up Bend:	0	Hem Count:	
Total Bends:	8	Total Folds:	0
Min Bend Length:	0	Max Bend Length:	0
Min Bend Angle:	10	Max Bend Angle:	93
Min Flange:	0	Max Flange:	0
Min PEM Gap:	0	Min Dn PEM Gap:	0
Min Emboss Gap:	0	Min Dn Emboss:	0
Min Louver Gap:	0	Min Dn Louver:	0
Min Taper Gap:	0	Min Die Cutout:	0
Bend Direction:	As Drawn		

Flip Bends

Processes
- ☐ Blank
- ☐ Emboss
- ☐ Turret
- ☑ Laser
- ☐ Press Brake
- ☐ Panel Bender
- ☐ Pem Nut
- ☐ Pem Stud
- ☐ Grain
- ☐ Weld
- ☐ Deburr
- ☐ Paint

OK — Cancel

Status:

The *Global Edge Engineering Assistant* provides the ability to define routing rules that are executed by the built-in routing configurator. This includes the automated generation of cutting times. The choices in the drop-down include:

- Laser
- Turret
- Open

When selecting the *"Open"* option, the routing configurator will determine the optimal method to cut part based on cost and/or delivery time.

The *"Editable Part Parameters"* section provides a list of 24 CAD part parameters. These 24 CAD part parameters can optionally be changed by the user need be. The software also analyzes an additional 24 CAD part parameters for a total of 48 CAD part parameters.

This section includes a *"Flip Bends"* option that allows the user to flip Up Bends to Down Bends or vice versa. This is to correct the bend direction from the original CAD model if it does not match the proper machine tool bend direction.

The *Global Edge Engineering Assistant* will automatically add extended data to the DXF file with the information contained on the above screen. The software additionally includes a total of 48 CAD part parameters that can be added to the DXF file and routing steps that are outlined on the next screen. Refer to Page ## for a list of information that can be added as extended data to the DXF file.

This column of check boxes allows you to select routing steps to be executed on the selected part. This includes the following manufacturing processes to execute:

- Blank
- Emboss
- Turret
- Laser
- Press Brake
- Panel Bender
- Pem Nut / Stud
- Grain
- Weld
- Deburr
- Paint

The software will generate routings including time calculations for accurate machine process times.

1. After selecting **"OK"** option, and if **"Routing Check Box"** was checked, the following Part Routing screen is displayed with the generated manufacturing steps:

These columns calculate / display the cost estimate to fabricate a single part. The software can also calculate the cost for various levels of production.

Part Routing

| Part Number: | DEM-04-HOUSING | | SHEET METAL HOUSING | | | | |

Route

Route #:	1	Description:	STANDARD PART ROUTING	Set Up:	$142.50
Type:	Standard		Optimization: None	Component:	$43.63
Loca. Level:	None		Optimization Quantity: 1	Process:	$24.77
Operation:	14 Operations Found ...			Total Cost:	$210.91

Refresh · Export · Close · Config # 15

Standard Bend Process

Process #:   Radius: UOM:

Seq #	Routing	Routing Description	Type	Units / Hour	Estimated Cost	Mach #	Mach Ref
1	LASER-CUT	Laser Cut Operation	Process	200.00	15.0000	1003	LASER-1003
2	BEND	Press Brake Bending Operation	Process	100.00	0.7500	1007	PB-1007
3	TIG-WELD	TIG Weld	Process	6.67	6.7500	1010	WELD-1010
4	DEBURR	Deburring Operation	Process	14.53	3.0971	1011	FINISH-1011
5	SAND-PAINT-PREP	Sand / Paint / Preparation Operation	Process	62.36	0.6414	1018	PAINT-1018
6	HANGING	Hanging Operation	Process	50.00	0.5000	1015	HANG-1015
7	WASHING	Washing Operation	Process	100.00	0.2500	1016	WASH-1016
8	PAINTING	Painting Operation	Process	31.18	1.2828	1017	PAINT-1017
9	CURING	Curing Operation	Process	20.00	1.2500	1019	OVEN-1019
10	ASSEMBLY	Assembly Operation	Process	20.00	2.5000	1021	ASSM-1021
11	GENERAL-LABOR	General Labor Operation	Process	20.00	2.5000	1025	LABOR-1025
12	FINAL-INSPECT	Final Inspection Operation	Process	20.00	1.7500	1026	INSPECT-1026
13	PACKAGE	Package Operation	Process	20.00	1.7500	1027	PACK-1027
14	SHIPPING	Shipping Operation	Process	20.00	1.7500	1028	SHIP-1028

The **Global Edge Engineering Assistant** includes a configuration engine that runs in the background to generate routings based on the CAD part parameters and simple to define routing rules.

These columns (Units / Hour, Estimated Cost, Mach #) are automatically generated with the configuration engine which includes how many units can be produced per hour and the estimated cost per unit based on the machine tool selected for each specific process.

1. After selecting **"OK"** option, the following screen form is displayed upon completion of Import CAD Files process:

The **Global Edge Engineering Assistant** provides the ability to automatically analyze CAD part parameters. This includes a total of 48 CAD part parameters to drive:

- Automated Bend Program Generation
- Automated Routing Generation
- Manufacturability Testing
- Automated Sales Quote Generation
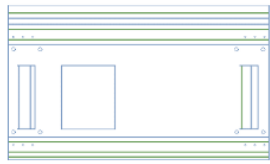
Refer to Page 13 for a listing of the information that is analyzed and generated with the CAD part importation process.

2. Select the **"Print"** option to generate Part DXF Import Report:

CAD Part Parameter Report (Part 1 of 3)

The first portion of the *CAD Part Parameter Report* includes the following 48 CAD part parameters that are analyzed and recorded in an SQL database. These CAD part parameters provide the foundation for the automated generation of bend programs for press brakes, panel benders and other robotic folders. This is accomplished with the *Global Edge Engineering Assistant* software comparing the CAD part parameters with your available machine tool tooling such as part size, bend angles, hem counts, pem and louver gaps from bend lines, etc.:

Part Number	Description	UOM	Type	Cat.	Style	Mtl.
BP-06-SS-304-4-075-125	BEND PROCESS TEST PART 06	EA	C	SHT	-	304-4

Setup Cost: 104.2500	Material: 304-4-STAINLESS STEEL
Process Cost: 18.7399	Ship Weight: 110.97
Component Cost: 525.1589	Ship Weight UOM: lbs
Rollup Cost: 648.1488	Standard Cost: 648.1488

CAD Part Parameters

Par. #	Parameter Name	Value	UOM	Par. #	Parameter Name	Value	UOM
1	Sheet Length:	0.000000	inches	25	Minimum Pem Gap:	1.200000	inches
2	Sheet Width:	0.000000	inches	26	Minimum Down Pem Gap:	1.800000	inches
3	Blank Length:	0.000000	inches	27	Minimum Emboss Gap:	3.000000	inches
4	Blank Width:	0.000000	inches	28	Minimum Down Emboss Gap:	1.200000	inches
5	Material thickness:	0.078120	inches	29	Minimum Louver Gap:	2.000000	inches
6	Perimeter:	312.338773	inches	30	Minimum Down Louver Gap:	0.000000	inches
7	Flat Length:	98.000000	inches	31	Min. Taper Bend Line Gap:	0.000000	inches
8	Flat Width:	58.169387	inches	32	Minimum Die Cutout:	0.000000	inches
9	Round Hole Count:	20.000000	-	33	Up Bend Count:	6.000000	-
10	Round Sizes Count:	2.000000	-	34	Internal Up Bends Count:	0.000000	-
11	Obround Hole Count:	0.000000	-	35	Maximum Up Bend:	0.000000	inches
12	Obround Sizes Count:	0.000000	-	36	Down Bend Count:	5.000000	-
13	Rectangular Hole Count:	1.000000	-	37	Internal Down Bends Count:	0.000000	-
14	Rectangular Sizes Count:	1.000000	-	38	Maximum Down Bend:	0.000000	inches
15	Other Hole Count:	0.000000	-	39	Fold Count:	11.000000	-
16	Other Sizes Count:	0.000000	-	40	Hem Count:	1.000000	-
17	Number of Cutouts:	21.000000	-	41	Extrude Count:	0.000000	-
18	Cutout Perimeter:	262.558000	inches	42	Bend Radius:	0.125000	inches
19	Minimum Bend Length:	35.000000	inches	43	Cutting Method:	Open	-
20	Maximum Bend Length:	80.000000	inches	44	Cutter Ref. Number:	-	-
21	Minimum Bend Angle:	45.000000	degrees	45	Certified Material:	No	-
22	Maximum Bend Angle:	90.000000	degrees	46	Material:	304-4	-
23	Minimum Flange Width:	4.000000	inches	47	Cutout Distance:	382.601221	inches
24	Maximum Flange Width:	12.000000	inches	48	Part Distance:	78.084693	inches

CAD Part Parameter Report (Part 2 of 3)

The second portion of the *CAD Part Parameter Report* includes a list of the routing steps generated by the Routing Configurator built into the *Global Edge Engineering Assistant*. These routing steps are based on user defined routing rules that utilize the CAD part parameters to generate accurate process times based on part size, material and thickness including an accurate rollup of costs:

Part Routing

Trans #	Seq. #	Process	Description	UOM	Setup Time	Setup Cost	Process Time	Std. Proc. Cost
986	1	LASER-CUT	Laser Cut Operation	hours	0.010000	1.50	0.100000	15.0000
987	2	BEND	Press Brake Bending Operation	hours	0.500000	37.50	0.010000	0.7500
988	3	TIG-WELD	TIG Weld	hours	0.500000	22.50	0.150000	6.7500
989	4	DEBURR	Deburring Operation	hours	0.200000	9.00	0.068824	3.0971
990	5	SAND-PAINT-PREP	Sand / Paint / Preparation Operation	hours	0.150000	6.00	0.016035	0.6414
991	6	HANGING	Hanging Operation	hours	0.150000	3.75	0.020000	0.5000
992	7	WASHING	Washing Operation	hours	0.150000	3.75	0.010000	0.2500
993	8	PAINTING	Painting Operation	hours	0.150000	6.00	0.032069	1.2828
994	9	CURING	Curing Operation	hours	0.250000	6.25	0.050000	1.2500
995	10	ASSEMBLY	Assembly Operation	hours	0.250000	12.50	0.050000	2.5000
996	11	GENERAL-LABOR	General Labor Operation	hours	0.250000	12.50	0.050000	2.5000
997	12	FINAL-INSPECT	Final Inspection Operation	hours	0.250000	8.75	0.050000	1.7500
998	13	PACKAGE	Package Operation	hours	0.250000	8.75	0.050000	1.7500
999	14	SHIPPING	Shipping Operation	hours	0.150000	5.25	0.050000	1.7500
					3.210000	$144.00	0.706928	$39.7713

CAD Part Parameter Report (Part 3 of 3)

The third portion of the *CAD Part Parameter Report* includes Manufacturability Test Results. These test results are the result of comparing CAD part parameters with user defined bend processes which provides the allowable limits of your tooling sets. The left-hand portion of the report includes the bend process limits while the right-hand portion includes the CAD part parameters:

Manufacturability Test Results

Process #:	4	Bnd Proc., SS 304-4, 0.075, Rad - 0.120			DEM-04-HOUSING		SHEET METAL HOUSING	
Mtl. Code:	304-4	Pass			46	Material:	304-4	-
Thickness:	0.075000	Pass	Linear UOM:	inches	5	Material thickness:	0.075000	inches
Min. Thickness:	0.072000		Max. Thickness:	0.077000				
Upper Tool Set:	2		Upper Part #:	BIU-817				
Lower Tool Set:	7		Lower Part #:	OZU-318				
Inside 90 Radius:	0.120000	Pass	Radius Tol:	0.010000	42	Bend Radius:	0.120000	inches
K Factor 90:	0.445000		Bend Allowance 90:	0.008000				
Gage Allowance 90:	0.003000		Tons Per Foot:	25.000000				
Min. Flat Length:	4.000000	Pass	Max. Flat Len:	72.000000	7	Flat Length:	19.699142	inches
Min. Flat Width:	2.000000	Pass	Max. Fl. Width:	48.000000	8	Flat Width:	42.193245	inches
Max. Bend Len:	72.000000	-	Max. Tonnage:	150.000000				
Max. Part Weight:	125.000000	-	Mass UOM:	lbs				
Min. Angle:	39.000000	Fail			21	Minimum Bend Angle:	37.000000	degrees
Max. Angle:	180.000000	Pass			22	Maximum Bend Angle:	93.000000	degrees
Min Length:	0.750000	Pass			19	Minimum Bend Length:	8.451000	inches
Max Length:	96.000000	Pass			20	Maximum Bend Length:	32.210000	inches
Min. Flange Width:	1.200000	Pass			23	Minimum Flange Width:	0.927000	inches
Max. Flange Width:	24.000000	Pass			24	Maximum Flange Width:	5.296000	inches

TRANS #	SEQ. #	PROCESS	DESCRIPTION	WC #	ASSET #	SETUP	SETUP	STD. COST
912	1		Cutting Group					
913	2	SHEAR	Sheet Metal Shear Operation	1	1109	0.250000	$13.75	$55.0000
914	3	PUNCH	Turret Punch Operation	4	1007	0.250000	$18.75	$75.0000
915	4	EMBOSS	Embossing Operation	4	1007	0.250000	$18.75	$75.0000
916	5	LASER-CUT	Laser Cut Operation	3	1123	0.100000	$14.00	$140.0000
917	6		End of Operation Group					
918	7		Forming Group					
919	8	BEND	Press Brake Bending Operation	7	1011	0.500000	$37.50	$75.0000
920	9	PANELBEND	Panel Bender Bending Operation	7	1009	0.100000	$12.00	$120.0000
921	10		End of Operation Group					
922	11		Hardware / Pem Group					
923	12	INSTALL-PEM-NUTS	Install Pem Nuts	11	1110	0.350000	$17.50	$50.0000
924	13	INSTALL-PEM-STUDS	Install Pem Studs	11	1110	0.350000	$17.50	$50.0000
925	14		End of Operation Group					
926	15		Welding Group					
927	16	TIG-WELD	TIG Weld	9	1112	0.500000	$22.50	$45.0000
928	17	MIG-WELD	MIG Weld	9	1111	0.500000	$22.50	$45.0000
929	18		End of Operation Group					
930	20	DEBURR	Deburring Operation	8	1108	0.200000	$9.00	$45.0000
931	21	GRAIN	Graining Operation	8	1160	0.250000	$11.25	$45.0000
932	22	SAND-PAINT-PREP	Sand / Paint / Preparation Operation	10	1086	0.150000	$6.00	$40.0000
933	25	HANGING	Hanging Operation	10	1077	0.150000	$3.75	$25.0000
934	26	WASHING	Washing Operation	10	1082	0.150000	$3.75	$25.0000
935	27	PAINTING	Painting Operation	10	1084	0.150000	$6.00	$40.0000
936	28	CURING	Curing Operation	10	1089	0.250000	$6.25	$25.0000
937	31	ASSEMBLY	Assembly Operation	11	1094	0.250000	$12.50	$50.0000
938	32	RIVET	Riveting Operation	11	1119	0.250000	$12.50	$50.0000
939	33	GASKETING	Gasketing Operation	11	1092	0.250000	$8.75	$35.0000
940	34	GENERAL-LABOR	General Labor Operation	11	1125	0.250000	$12.50	$50.0000
941	37	FINAL-INSPECT	Final Inspection Operation	12	1099	0.250000	$8.75	$35.0000
942	38	PACKAGE	Package Operation	12	1099	0.250000	$8.75	$35.0000
943	39	SHIPPING	Shipping Operation	15	1104	0.150000	$5.25	$35.0000
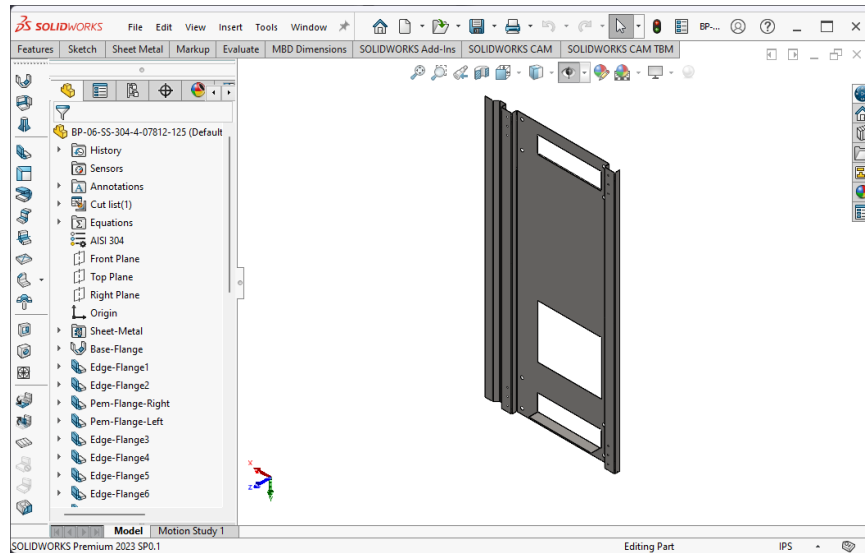
Sheet Metal Part Entities / Measurements

Global Edge® Integrated Manufacturing automatically identifies and stores the parameters contained in a sheet metal part including the specific measurements of each part:

Sheet Metal Part Parameters / Measurements
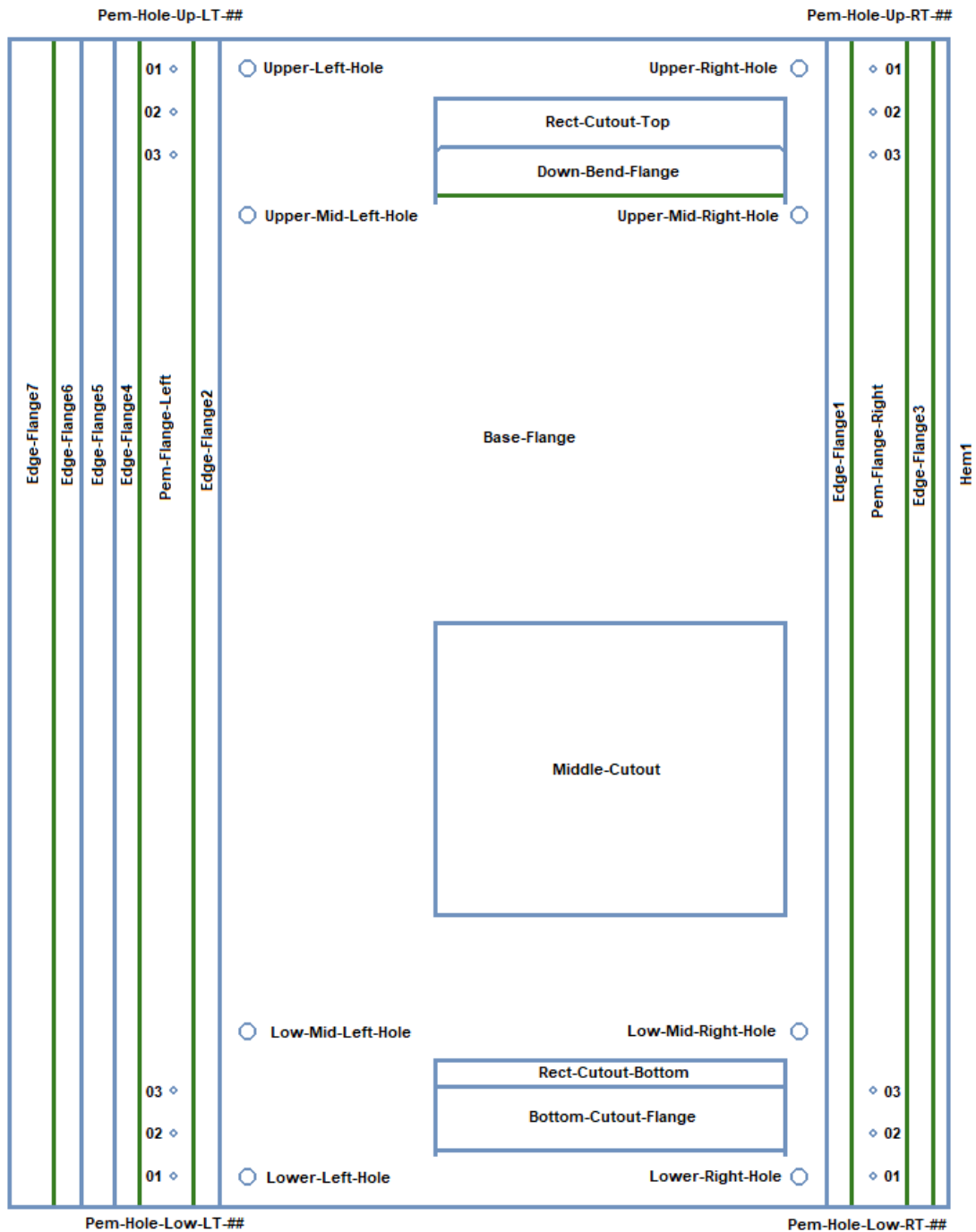
Sheet Metal Part Measurements

ELE. #	Element Name	Length	Width	Diameter	BL Dist. 1 (Inner)	BL Dist. 2 (Outer)
1	Overall Flat:	80.000	62.394	0.000	0.000	0.000
2	Base-Flange:	80.000	39.727	0.000	0.000	0.000
3	Edge-Flange1:	80.000	1.727	0.000	0.000	0.000
4	Edge-Flange2:	80.000	1.727	0.000	0.000	0.000
5	Pem-Flange-Right:	80.000	3.727	0.000	0.000	0.000
6	Pem-Flange-Left:	80.000	3.727	0.000	0.000	0.000
7	Edge-Flange3:	80.000	1.856	0.000	0.000	0.000
8	Edge-Flange4:	80.000	1.727	0.000	0.000	0.000
9	Edge-Flange5:	80.000	2.294	0.000	0.000	0.000
10	Edge-Flange6:	80.000	1.910	0.000	0.000	0.000
11	Edge-Flange7:	80.000	2.979	0.000	0.000	0.000
12	Hem1:	80.000	0.993	0.000	0.000	0.000
13	Rect-Cutout-Top:	6.658	24.000	0.000	0.000	0.000
14	Down-Bend-Flange:	3.294	24.000	0.000	0.000	0.000
15	Middle-Cutout:	20.000	24.000	0.000	0.000	0.000
16	Rect-Cutout-Bottom:	6.136	24.000	0.000	0.000	0.000
17	Bottom-Cutout-Flange:	4.364	24.000	0.000	0.000	0.000
18	Upper-Left-Hole:	0.000	0.000	1.000	0.000	0.000
19	Upper-Mid-Left-Hole:	0.000	0.000	1.000	0.000	0.000
20	Upper-Right-Hole:	0.000	0.000	1.000	0.000	0.000
21	Upper-Mid-Right-Hole:	0.000	0.000	1.000	0.000	0.000
22	Lower-Left-Hole:	0.000	0.000	1.000	0.000	0.000
23	Lower-Mid-Left-Hole:	0.000	0.000	1.000	0.000	0.000
24	Lower-Right-Hole:	0.000	0.000	1.000	0.000	0.000
25	Lower-Mid-Right-Hole:	0.000	0.000	1.000	0.000	0.000
26	Pem-Hole-Up-LT-01:	0.000	0.000	0.375	1.411	2.316
27	Pem-Hole-Up-LT-02:	0.000	0.000	0.375	1.411	2.316
28	Pem-Hole-Up-LT-03:	0.000	0.000	0.375	1.411	2.316
29	Pem-Hole-Low-LT-01:	0.000	0.000	0.375	1.411	2.316
30	Pem-Hole-Low-LT-02:	0.000	0.000	0.375	1.411	2.316
31	Pem-Hole-Low-LT-03:	0.000	0.000	0.375	1.411	2.316
32	Pem-Hole-Up-RT-01:	0.000	0.000	0.375	1.411	2.316
33	Pem-Hole-Up-RT-02:	0.000	0.000	0.375	1.411	2.316
34	Pem-Hole-Up-RT-03:	0.000	0.000	0.375	1.411	2.316
35	Pem-Hole-Low-RT-01:	0.000	0.000	0.375	1.411	2.316
36	Pem-Hole-Low-RT-02:	0.000	0.000	0.375	1.411	2.316
37	Pem-Hole-Low-RT-03:	0.000	0.000	0.375	1.411	2.316

Logic Design Corporation
Transforming Engineering & Manufacturing ...

13535 West Foxwood Court ● New Berlin, WI 53151-9506
Phone: 262-391-0540 ● Web Site: **www.ldcglobal.com**

3.3 – Automated Sales Quote / Routing Generation

Global Edge® Engineering Assistant includes Automated Sales Quote Generation by incorporating the CAD part importation capabilities into the quoting process. Within the previous section of the software, the user can look up a customer, generate a sales quote header and attach imported CAD parts to the sales quote. Once CAD part parameters are imported and stored in the SQL database, this section of the *Global Edge® Engineering Assistant* software provides the capabilities of a full functioning quoting system.

Workflow Steps

1. The first step is to open the *Global Edge® Engineering Assistant* software by clicking on the following desktop icon:

2. This will display the following splash screen and menu options:

Logic Design Corporation
Transforming Engineering & Manufacturing ...

13535 West Foxwood Court ⚫ New Berlin, WI 53151-9506
Phone: 262-391-0540 ⚫ Web Site: **www.ldcglobal.com**

3. The first step is to select **"CRM-Quoting > Prospect / Quote Management"** option to display the following screen:

4. Select **"Work-Queue"** option to display the following screen and menu options:

5. Select **"Execute-Task"** option and highlight workflow task to execute followed by **"OK"** option:

6. Select **"Yes"** option when prompted to **"Start Pending Task?"**, which will display the following screen form and menu options:

7. Select **"Items > Update"** option and highlight Part Number **"DEM-01-APRON"**:

8. Select **"OK"** option to display the following screen form and menu options:

9. Select **"Configure"** option to display the following prompt (Configure Part?) which will execute the Routing Configurator to generate routing steps for the selected part and automatically rollup the time and material costs based on the imported CAD part parameters:
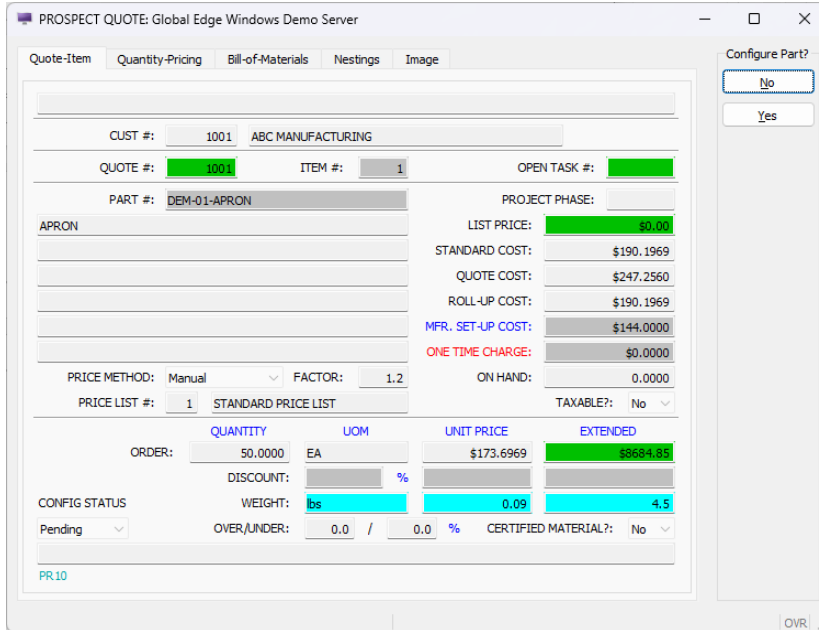
10. As the Configurator executes, the following prompts are made available:
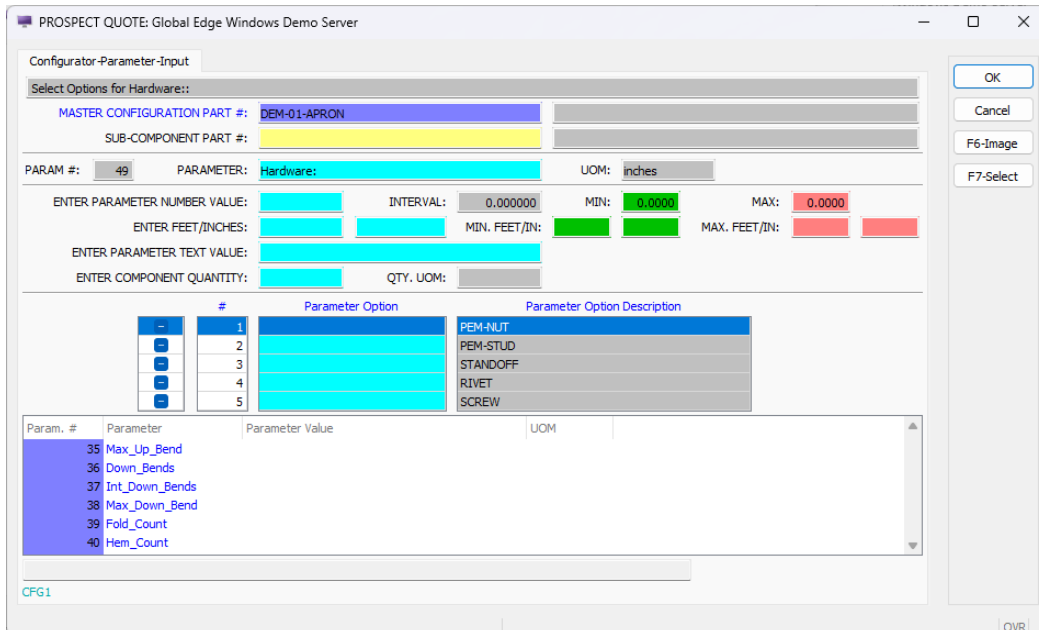
11. When prompted for **"Hardware:"**, select one or more of the available options (**"PEM-NUT"** and **"PEM-STUD"** selected)

12. When prompted for *"Part_Status:"*, select one of the available options (*"New"* selected)

13. When prompted for *"Program_Part:"*, select one of the available options (*"Simple Part"* selected)

14. When prompted for *"Setup_Master_File?"*, select one of the available options (*"No"* selected)

15. When prompted for *"Shear_Punch:"*, select one of the available options (*"Shearing"* selected)

16. When prompted for *"Pre-Form:"*, select one of the available options (*"Shake-Out"* selected)

17. When prompted for *"Pem_Options:"*, select one of the available options (*"1-Man"* selected)

18. When prompted for *"Form_Options:"*, select one of the available options (*"Form-2"* selected)

19. When prompted for *"Machine_Shop:"*, select one of the available options (*"Bench Work"* selected)

20. When prompted for *"Welding:"*, select one of the available options (*"MIG Weld"* selected)

21. When prompted for *"Assembly:"*, select one of the available options (*"General Assembly"* selected)

22. When prompted for *"Inspection:"*, select one of the available options (*"Inspect"* selected)

23. When prompted for *"Finishing:"*, select one of the available options (*"Powder Coat"*, *"Batch Oven"* selected)

24. When prompted for *"Shipping:"*, select one of the available options (*"Pack-for-Shipment"* selected)

25. The following screen form and menu options are displayed to enter the quantity of the required hardware:

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26. After selecting **"OK"** on the previous screen form the following screen form and menu options are displayed to enter the quantity of the additional components:

	QTY	PART NUMBER	DESCRIPTION	LIST PRICE	UOM	EXTENDED
Include	1.0000	PACKAGING	PACKAGING	$0.00	EA	$0.00
Entry		BOX-32X24X24	BOX, 32 X 24 X 24 (S-4453)	$0.00	EA	
Entry		BAG28-4-599	U-LINE S-2366 20IN X 30IN FLAT BAG	$0.00	EA	
Include	1.0000	BOX-30X24X20	U-LINE BOX S-4961	$0.00	EA	$0.00
Entry		SP-032-1	10-32 PEM NUTS	$0.00	EA	
Entry		832316	8-32 SELF TAPPING SCREWS	$0.00	EA	
Entry		MATERIAL-MARKUP	MATERIAL MARKUP	$0.00	EA	

OPTION LIST: DEMO COMPONENTS OPTIONS LIST

TOTAL: $0.00

OPTL

Enter Quantity to Include:

27. After selecting **"OK"** on the previous screen form the following screen form and menu options are displayed to enter the quantity of other charge components:

	QTY	PART NUMBER	DESCRIPTION	LIST PRICE	UOM	EXTENDED
Include	1.0000	TAPE	TAPE CHARGE	$0.00	EA	$0.00

OPTION LIST: DEMO OTHER CHARGES OPTIONS LIST

TOTAL: $0.00

OPTL

Enter Quantity to Include:

28. When prompted, select the process(es) in the *"Programming Group"*:

> The above screen form displays the available processes as the Configurator executes with each of the process groups that have been defined. This screen allows the user to select which processes applies to the imported part including the routing sequence.

29. When prompted, enter the *"UNITS/HOUR"* that can be done for the *"BENCH-WORK"* process:

30. When prompted, enter the *"UNITS/HOUR"* that can be done for the *"MIG-WELD"* process:

31. When prompted, enter the *"UNITS/HOUR"* that can be done for the *"GENERAL-ASSEMBLY"* process:

32. When prompted, enter the **"UNITS/HOUR"** that can be done for the **"INSPECT"** process:

33. When prompted, select the process(es) in the **"Finishing Group"**:

34. After selecting **"OK"** on the previous screen form the following screen form to enter Units Per Hour for **"PACK-FOR-SHIPMENT"**:

35. After the Configurator is done executing, the following screen form and menu options are displayed:

36. Select **"BOM"** option to display the following screen form and menu options:
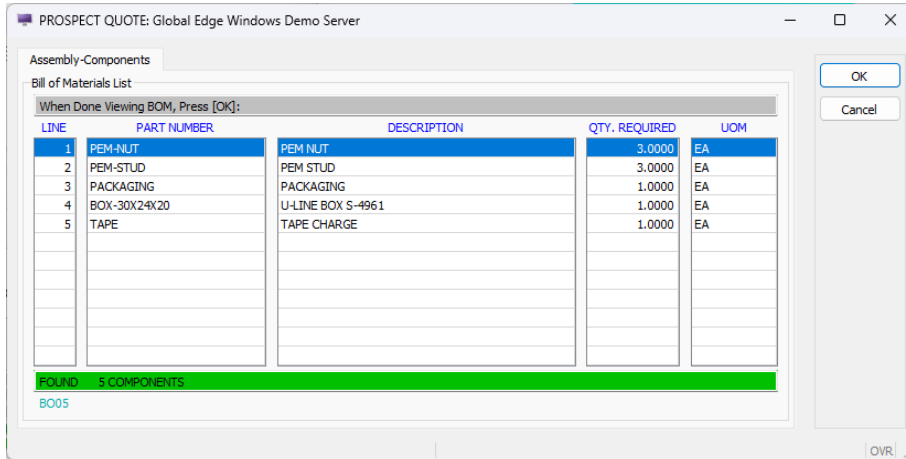
37. Select **"Cancel"** option to return to previous screen and select **"Documents"** option to display the following screen form and menu options:
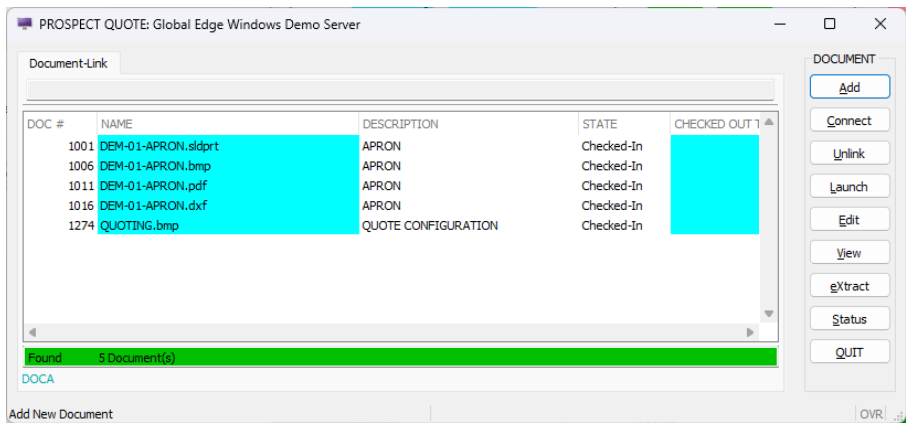
38. Select **"QUIT"** option to return to previous screen and select **"Routing"** option to display the following screen form and menu options:

39. Select **"QUIT"** option to return to QUOTE-ITEM menu to display the following screen form and menu options:

40. After the Configurator executes on a selected part, select the **"QUIT"** option, the software returns to the **"Quote-Item"** screen. Select **"Update"** option, fill in the remainder of the screen form with the proper information such as adding to the part description on the six descriptive lines located below the PART # field. Use the TAB key to move to the next data field. In the PRICE Method field, select **"Cost-Plus"** from the drop-down menu. In the FACTOR field, enter a factor as to what percentage the part should be marked up on the Sales Quote from the cost. Enter a factor of 1.5 to markup part. In the QUANTITY field, enter the quantity of parts to include on the Sales Quote:

41. For multiple price quantities, select the **"F10-Quantity"** option of right-hand menu to display the following **"Quantity-Pricing"** screen tab and fill in the various Quantity Prices in the QUANTITY field you want to appear on the Sales Quote:

42. Select **"OK"** option to display the following screen form and menu options:

43. Select **"QUIT"** option to return to QUOTE-ITEM menu to display the following screen form and menu options:

44. Select **"QUIT"** option to return to QUOTE menu to display the following screen form and menu options:

			PROSPECT QUOTE: Global Edge Windows Demo Server			— □ ✕

Quote-Header

Quote Header Information

CUST #:	1001	REF #:	ABC MANUFACTURING
QUOTE #:	1001	QUOTE REF #:	REVISION #:	STATUS: Entered
NOTE:	Fabricated Sheet Metal Parts		ENG. APPROVAL: No
LOCATION #:	1	CORP. HEADQUARTERS / MANUFACTURING	QUOTE DATE: 03/29/2024
CONTACT #:	1	Robert Smith	VALID THRU: 04/28/2024
OPPORTUNITY #:	1	Light Fixture Sheet Metal Parts	APPROVED:
PROJECT #:			SUBMITTED:
JOB #:			
QUOTE BY:	RDS	PURGE: No	PURGE DATE:
SALES REP:	RDS	Robert D. Smith	CLOSE %: 0.0	GEN PART: No
SHIP WEIGHT:	439.5	lbs	SHIP DAYS: 10	OPEN TASKS: 4
SHIP VIA:	UPS	UNITED PARCEL SER.	FOB LOCATION: Shipping Point	
PAY TERMS:	N30	NET 30 DAYS	NET CHARGE: $28254.43
METHOD:	Cost-Plus	FACTOR: 1.2	FREIGHT: $175.00
PRICE LIST:	1	STANDARD PRICE LIST	SALES TAX: $0.00
TAXABLE:	No	RATE: 0.0 % 0.0 %	QUOTE TOTAL: $28429.43

Quote Items

LINE	PART NUMBER	QUANTITY	UNIT	UNIT PRICE	EXTENDED	CFG STATUS
1	DEM-01-APRON	50.0000	EA	$173.6969	$8684.85	Complete
2	DEM-02-LOAD-CTR-BOX	25.0000	EA	$198.0316	$4950.79	Pending
3	DEM-03-BOTTOM-DLH	35.0000	EA	$168.2720	$5889.52	Pending
4	DEM-04-HOUSING	10.0000	EA	$210.9056	$2109.06	Pending
5	DEM-05-PANEL	40.0000	EA	$165.5053	$6620.21	Pending

PR08

QUOTE

Update
Items
Configure
Notes
Ship
··· Print
Letter
eXcel
Documents
Format
staTus
schedulE
Orders
Work-Queue
QUIT

Print Displayed Quote   OVR

45. Select **"Print"** option to display the following screen form and menu options:

	PROSPECT QUOTE: Global Edge Windows…	— □ ✕

Printer-List

SELECT REPORT PRINTER:

PRINTER:	Print to PDF	
PIPE:		
NUMBER OF COPIES:	1	
TRAY:		
PREVIEW: ☐	E-MAIL: ☐	

OK
Cancel

PRIN   OVR

Sample Sales Quote

PAGE: 001

PRICE QUOTATION

LDC
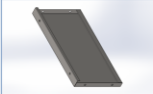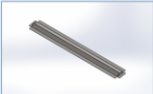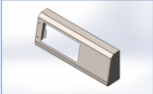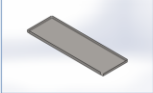
1000 West Product Avenue
P.O. Box 5544
Productionville, WI 55555
Phone: 262-695-1300   Fax: 262-695-1313
www.ldcglobal.com

SUBMITTED TO:

ABC Manufacturing Company
5000 West Industrial Way

Milwaukee, WI 55555
United States of America

SHIP TO:

ABC Manufacturing Company
5000 West Industrial Way

Milwaukee, WI 55555
United States of America

CUST ID: 1001
CONTACT: Robert Smith, V.P. of Engineering
E-MAIL: rsmith@abc-manufacturing.com
PHONE: 414-555-1100
FAX: 414-555-1105

QUOTE #	REV #	QUOTE DATE	VALID THRU	SHIP VIA	DAYS2SHIP	PAY TERMS	SALES REP.
1001		04/03/2022	05/02/2022	BEST WAY	10	NET 30 DAYS	Robert Smith

QTY. QUOTED	UOM	PART #	DESCRIPTION	TAX	UNIT QUOTE	EXTENDED
50.000	EA	DEM-01-APRON	APRON	N	173.6969	8,684.85
25.000	EA	DEM-02-LOAD-CTR-BOX	LOAD CENTER BOX	N	198.0316	4,950.79
35.000	EA	DEM-03-BOTTOM-DLH	BOTTOM DISPLAY LIGHT HOUSING	N	168.2720	5,889.52
10.000	EA	DEM-04-HOUSING	SHEET METAL HOUSING	N	210.9056	2,109.06
40.000	EA	DEM-05-PANEL	SHEET METAL PANEL	N	165.5053	6,620.21

** PAYMENT SCHEDULE **

QUOTE SUB-TOTAL:	28,254.43
SALES TAX:	0.00
FREIGHT:	175.00
QUOTE TOTAL:	**$28,429.43**

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Configurator Prompts

The following 8 dimensions / parameters were defined in addition to the 34 dimension / parameters that are included with DXF File import process. The following user prompts and options are displayed when the Configurator executes:

PART #: QUOTE-STANDARD

Dim #	Dim. Parameter / Option	UOM	Minimum	Maximum	Input Method
35	Blank_Before_Cut?				User Prompt
	Yes				
	No				
36	Embossed_Part?				User Prompt
	Yes				
	No				
37	Incl_Panel_Bender?				User Prompt
	Yes				
	No				
38	Hardware:				User Prompt
	PEM-NUT				
	PEM-STUD				
	STANDOFF				
	RIVET				
	SCREW				
39	Weld_Part?				User Prompt
	Yes				
	No				
40	Deburr_Part?				User Prompt
	Yes				
	No				
41	Grain_Part?				User Prompt
	Yes				
	No				
42	Paint_Part?				User Prompt
	Yes				
	No				

Configurator Routings

The following are the available Routings / Manufacturing Processes that have been defined for fabricated sheet metal parts. As the Configurator executes, the software will select the appropriate process based on user selection and/or routing formulas:

PART #: QUOTE-STANDARD

SEQ #	PROCESS	DESCRIPTION	PROC. RATE	SETUP TIME	SETUP COST	MACH #	TRANS #
2	SHEAR	Sheet Metal Shear Operation	$55.0000	0.250000	13.75	1109	463
3	PUNCH	Turret Punch Operation	$75.0000	0.250000	18.75	1007	464
4	EMBOSS	Embossing Operation	$75.0000	0.250000	18.75	1007	465
5	LASER-CUT	Laser Cut Operation	$140.0000	0.100000	14.00	1123	466
8	BEND	Press Brake Bending Operation	$75.0000	0.500000	37.50	1011	469
9	PANELBEND	Panel Bender Bending Operation	$120.0000	0.100000	12.00	1009	470
12	INSTALL-PEM-NUTS	Install Pem Nuts	$50.0000	0.350000	17.50	1110	473
13	INSTALL-PEM-STUDS	Install Pem Studs	$50.0000	0.350000	17.50	1110	474
16	TIG-WELD	TIG Weld	$45.0000	0.500000	22.50	1112	477
17	MIG-WELD	MIG Weld	$45.0000	0.500000	22.50	1111	478
20	DEBURR	Deburring Operation	$45.0000	0.200000	9.00	1108	481
21	GRAIN	Graining Operation	$45.0000	0.250000	11.25	1160	482
22	SAND-PAINT-PREP	Sand - Paint Preparation Operation	$40.0000	0.150000	6.00	1086	483
25	HANGING	Hanging Operation	$25.0000	0.150000	3.75	1077	486
26	WASHING	Washing Operation	$25.0000	0.150000	3.75	1082	487
27	PAINTING	Painting Operation	$40.0000	0.150000	6.00	1084	488
28	CURING	Curing Operation	$25.0000	0.250000	6.25	1089	489
31	ASSEMBLY	Assembly Operation	$50.0000	0.250000	12.50	1094	492
32	RIVET	Riveting Operation	$50.0000	0.250000	12.50	1119	493
33	GASKETING	Gasketing Operation	$35.0000	0.250000	8.75	1092	494
34	GENERAL-LABOR	General Labor Operation	$50.0000	0.250000	12.50	1125	495
37	FINAL-INSPECT	Final Inspection Operation	$35.0000	0.250000	8.75	1099	498
38	PACKAGE	Package Operation	$35.0000	0.250000	8.75	1099	499
39	SHIPPING	Shipping Operation	$35.0000	0.150000	5.25	1104	500

Demo Section 4: Engineering Management

Global Edge® *Integrated Manufacturing* provides full-functioned engineering management capabilities including the ability to configure configurable products such as sheet metal cabinets. The sections that illustrate these capabilities include:

■ **4.1 – Bill of Materials Management / Product Configuration**

■ **4.2 – Document Management / CAD Interface**

Stage 4: Engineering Management – Section Overview

The following is an overview of Stage 4 and what is illustrated within each of the steps.

- **4.1 – Bill of Materials / Product Configuration:** The steps within this section illustrate how the *Global Edge* software provides automated generation of bill of materials through the product configuration process which includes:

  - **Advanced Bill of Materials Management**

  - **Automated Product Configuration / Routing Generation**

- **4.2 – Document Management / CAD Interface:** The steps within this section illustrate how the *Global Edge* software provides integrated document management and automated CAD model generation which include:

  - **Document Launch**

  - **Automated CAD Model Generation / Model Explorer**

4.1 – Bill of Materials Management / Product Configuration

These steps illustrate bill of materials management and product configuration.

Workflow Steps

1. Select the *"Engineering"* option on the *Global Edge* main menu:

2. Select the *"BOM / Product Configuration"* option on the Engineering Management menu:
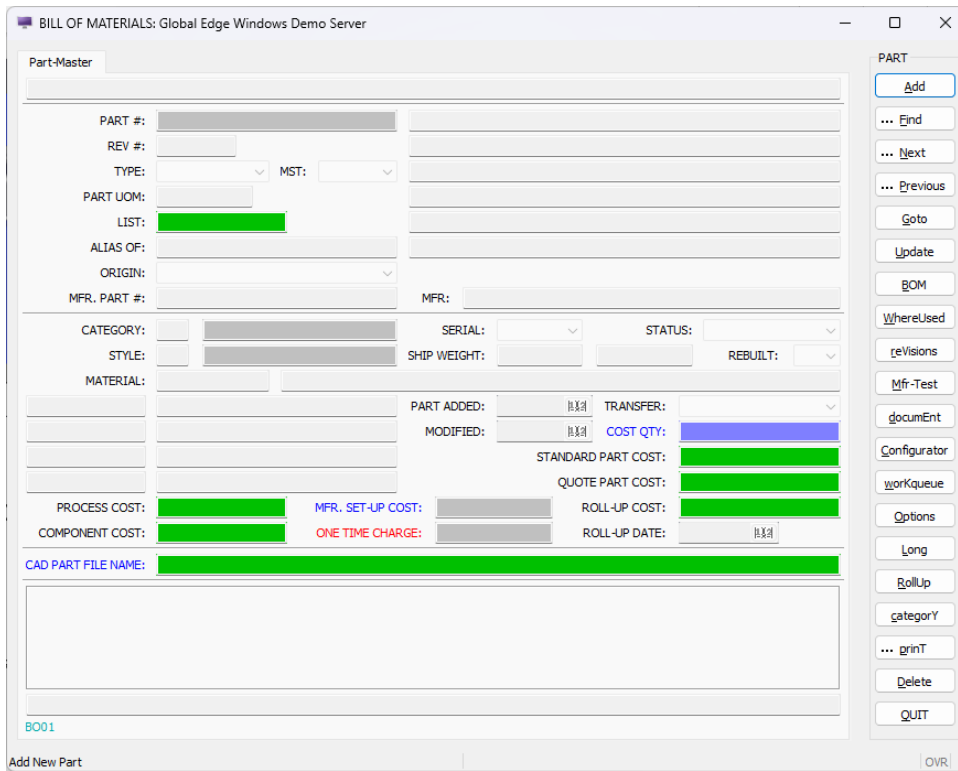
3. Select the *"Find"* option and retrieve **PART #: *"SLD-000-CABINET"*** which will display the following part menu options:
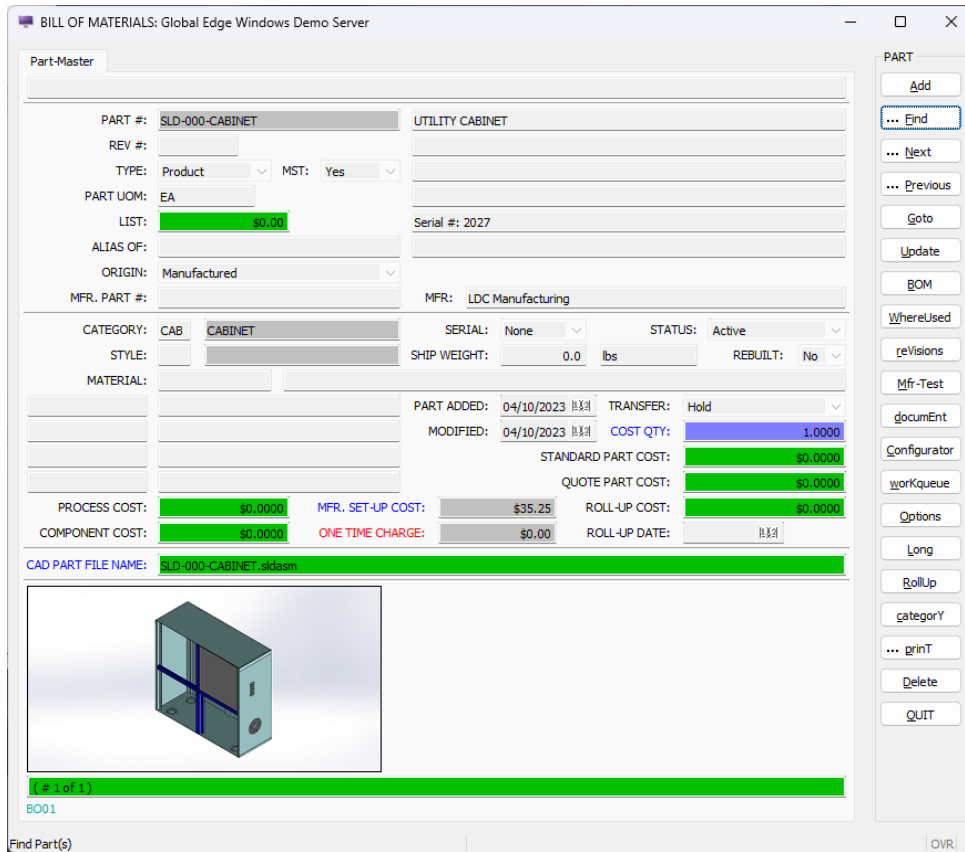
4. Select the *"BOM"* option to display the first level of assembly components:

5. Select the *"Routings"* option to display the following screen form and menu options:

6. Select the *"Update"* option and select **"ASSEMBLY"** row to display the following screen form and menu options:

Automated Product Configuration / BOM Update Workflow Diagram

Global Edge Integrated Manufacturing provides innovative product configuration capabilities for automated bill of materials and routing generation, including automated updating of ERP bill of materials to match CAD bill of materials.

Automatically Configure Products, Assemblies, and Parts with Input Parameters from Quoting Spreadsheets, Customer Web Portal or Manual Entry

Global Edge Configuration Engine

Automatic Update of CAD Bill of Materials to Match ERP Bill of Materials

Automatic Configuration of Complete Bill of Materials, Routings, 3D CAD Model Generation including Part Numbering and Document File Naming

Template CAD Drawings

The following are the BOM and CAD part numbers for the Utility Cabinet:
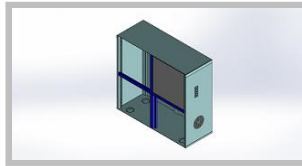
SLD-000-CABINET
UTILITY CABINET
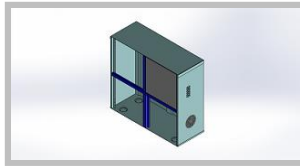
SLD-001-CABINET-BODY
CABINET BODY
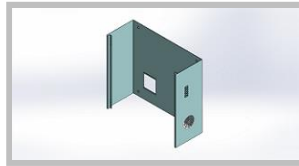
SLD-002-CABINET-BODY-WRAP
CABINET BODY WRAP
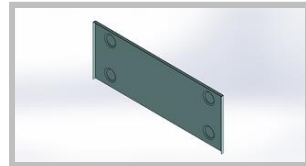
SLD-003-CABINET-BOTTOM
CABINET BODY WRAP
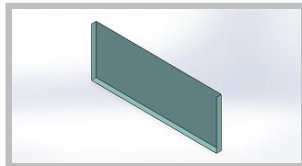
SLD-004-CABINET-TOP
CABINET BODY TOP
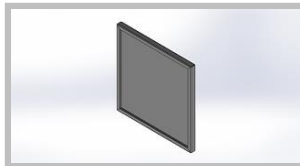
SLD-015-FILL-PANEL
CABINET FILL PANEL
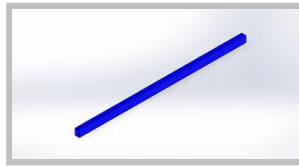
SLD-016-HORZ-DIVIDER
CABINET HORIZONTAL DIVIDER
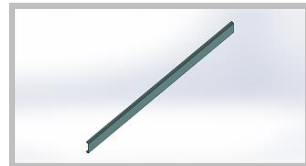
SLD-017-SPINE-CENTER
CABINET SPINE - CENTER
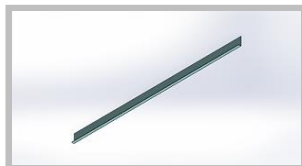
SLD-018-SPINE-CORNER-LT
CABINET SPINE - CORNER - LEFT
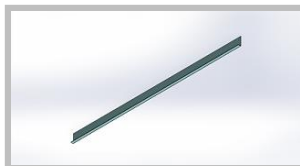
SLD-019-SPINE-CORNER-RT
CABINET SPINE - CORNER - RIGHT
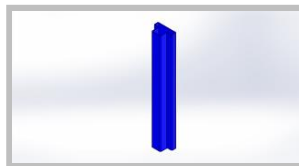
SLD-020-VERT-DIVIDER-BOT
CABINET VERTICAL DIVIDER - BOTTOM
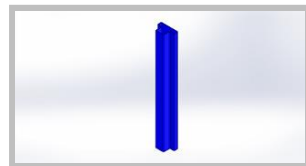
SLD-021-VERT-DIVIDER-TOP
CABINET VERTICAL DIVIDER - TOP
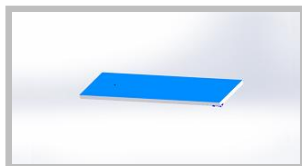
SLD-022-SHELF
SHELF

SLD-023-BACK
REMOVABLE BACK

SLD-000-CABINET

Configurator Prompts

The following are the 14 dimensions / parameters that were defined for the SolidWorks Utility Cabinet and will appear as the configurator executes for user input:

- **DIM. #1: Cabinet_Height** — **TYPE:** Number **UOM:** inches **Min:** 32.000 **Max:** 40.000 **Interval:** 0.001
- **DIM. #2: Cabinet_Width** — **TYPE:** Number **UOM:** inches **Min:** 32.000 **Max:** 60.000 **Interval:** 0.001
- **DIM. #3: Cabinet_Depth** — **TYPE:** Number **UOM:** inches **Min:** 18.000 **Max:** 30.000 **Interval:** 0.001
- **DIM. #4: Face_Pattern** — **TYPE:** Character

  Options
  - NONE
  - OPEN
  - VERTICAL SPLIT
  - HORIZONTAL SPLIT
  - VERTICAL SPLIT TOP
  - VERTICAL SPLIT BOTTOM

- **DIM. #5: Post_Height** — **TYPE:** Number **UOM:** inches **Min:** 6.000 **Max:** 18.000 **Interval:** 0.001
- **DIM. #6: Bottom_Post_Height** — **TYPE:** Number **UOM:** inches **Min:** 6.000 **Max:** 18.000 **Interval:** 0.001
- **DIM. #7: Fill_Panel?** — **TYPE:** Character

  Options
  - Yes
  - No

- **DIM. #8: Removable_Back?** — **TYPE:** Character

  Options
  - Yes
  - No

- **DIM. #9: Include_Shelf?** — **TYPE:** Character

  Options
  - Yes
  - No

- **DIM. #10: Include_Drawer?** — **TYPE:** Character

  Options
  - Yes
  - No

- **DIM. #11: Material** — **TYPE:** Character

  Options
  - Carbon
  - 304 Stainless
  - 316 Stainless

- **DIM. #12: Material_Thickness** — **TYPE:** Character

  Options
  - 14 Gauge (0.074000)
  - 18 Gauge (0.048000)
  - 20 Gauge (0.036000)

- **DIM. #13: Paint_Finish** — **TYPE:** Character

  Options
  - White
  - Red
  - Blue
  - Custom
  - None

- **DIM. #14: Custom_Color** — **TYPE:** Character

  Options
  - Prompt

7. Return to "Part-Master" screen and select **"Configurator > Run"** option followed by the **"New > No"** option to display the following screen form:

> The above screen form allows the operator to enter a specific description for the configuration that is about to be generated. The software will create a final Part Number based on the Part Numbering Rules that are defined.

8. When ready to execute the Configurator, select the **"Yes"** option to start the execution of the Configurator:

9. Enter *"Cabinet_Height"*, *"Cabinet_Width"*, and *"Cabinet_Depth"* when prompted:

10. Select *"Face_Pattern"* when prompted:

11. Enter a **"Post_Height"** a when prompted:

12. When prompted for **"Fill_Panel?"**, answer **"No"**.

13. When prompted for **"Removable_Back?"**, answer **"No"**.

14. When prompted for **"Include_Shelf?"**, answer **"No"**.

15. When prompted for **"Include_Drawer?"**, answer **"No"**.

16. When prompted for a **"Material"** select from one of the available options.

17. When prompted for a **"Material_Thickness"** select from one of the available options.

18. When prompted for a *"Paint_Finish"* select from one of the available options:

19. When the Configurator completes execution, the following screen form is displayed:

20. Select the *"BOM"* option to display the following:

21. Select the *"Documents"* option to display the following:
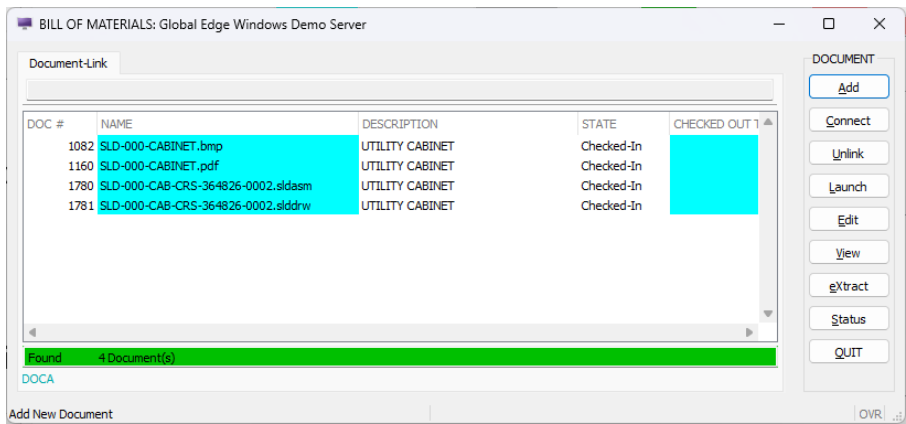
22. Select the *"Routings"* option to display the following:
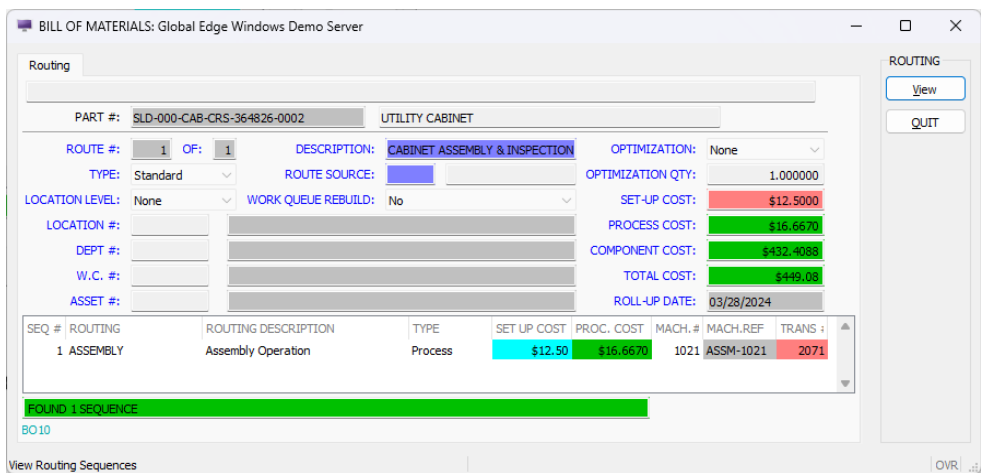
4.2 – Document Management / CAD Interface

These steps illustrate document management and automated CAD model generation.

Workflow Steps

1. Return to **"Part-Master"** menu and select **"Find > Configurations"** option and find newly configured cabinet assembly:
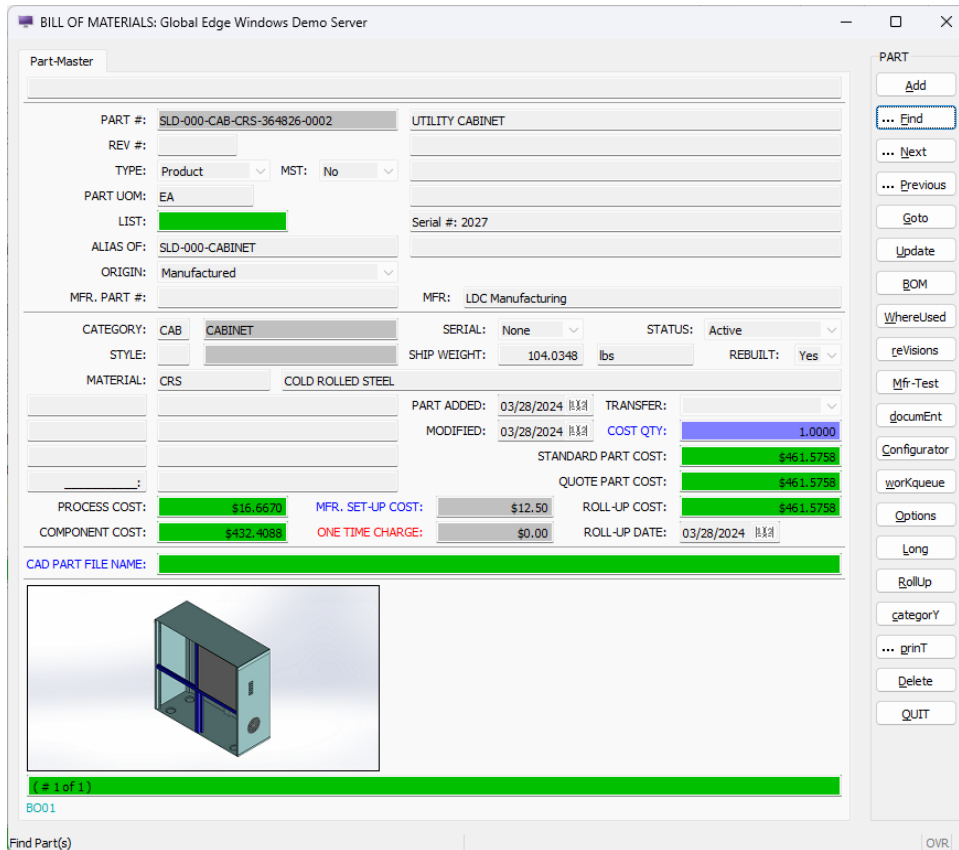
2. Select **"Document > Launch"** option and select document to launch into CAD editor:
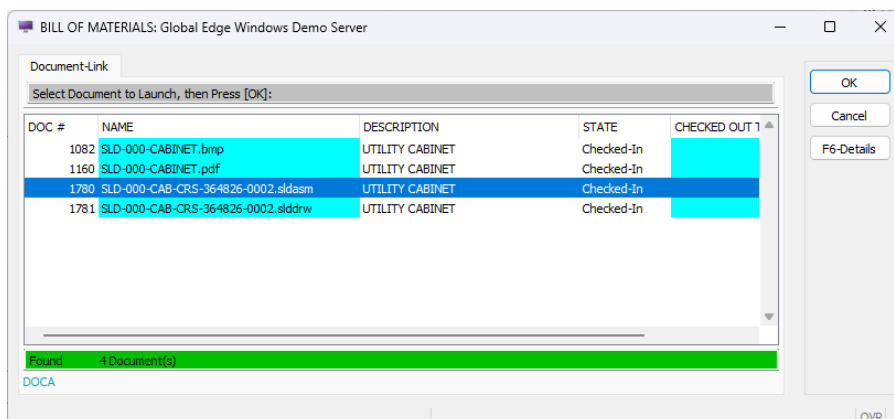
3. Select *"Document > Launch"* option and select document to launch into CAD editor. As the CAD files are checked out the document vault, they are displayed on the following screen:
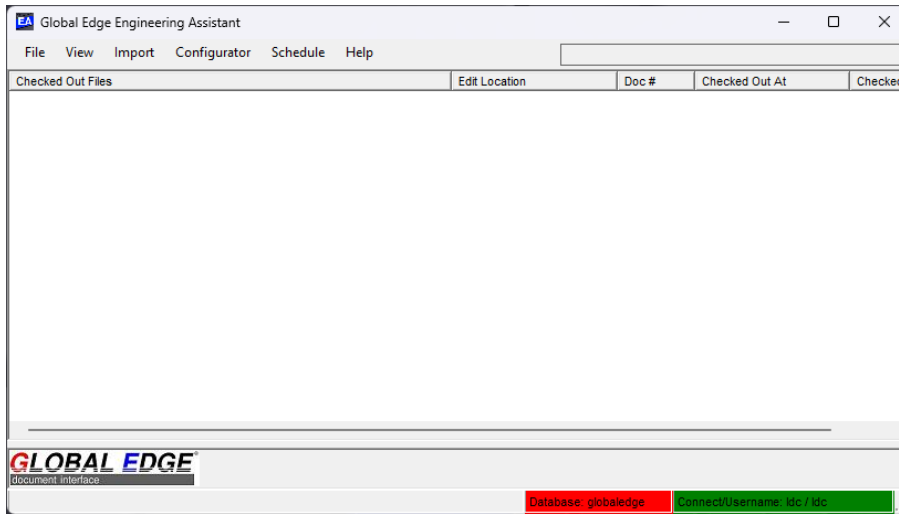
4. Once all the CAD files are checked out of the document vault, they are automatically launched into SolidWorks:
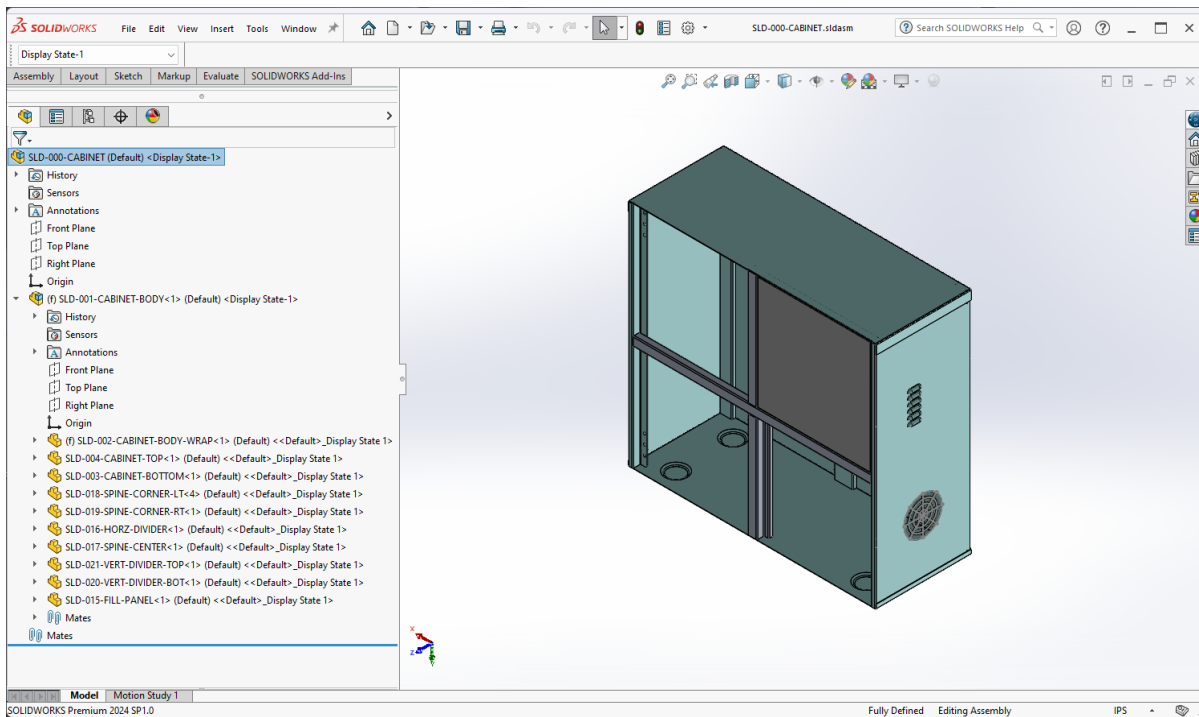
5. Select the *"Tools > Global Edge > Model Explorer"* option to display *Global Edge Model Explorer* screen:
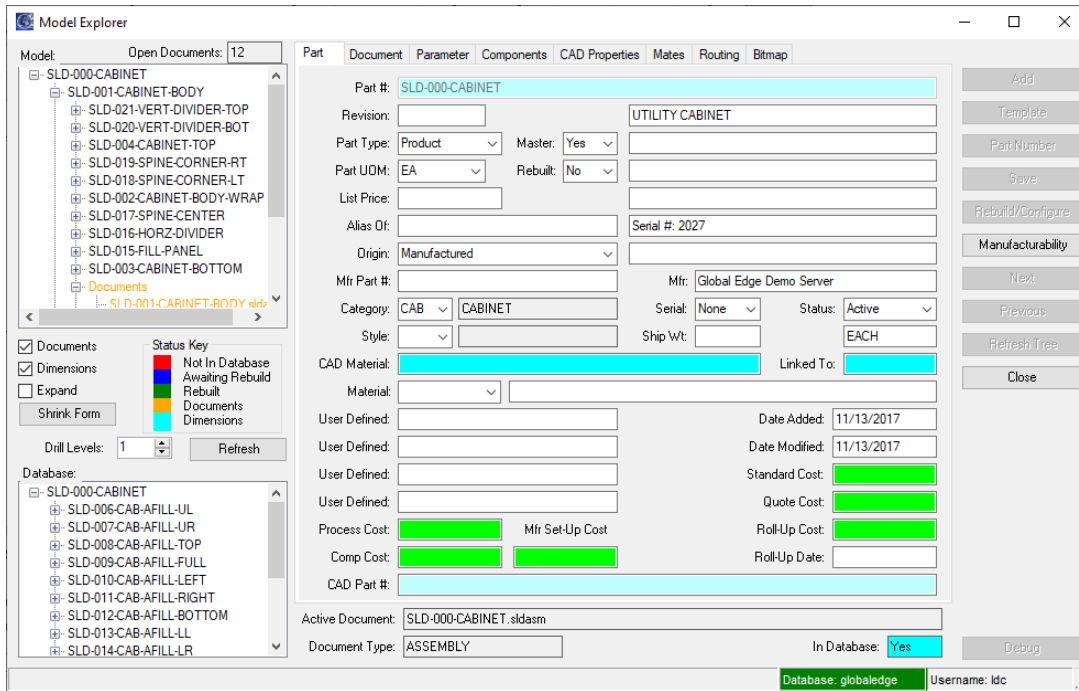
6. Select the *"Rebuild/Configure"* option to rebuild and configure the SolidWorks Cabinet Assembly to match the configuration run:
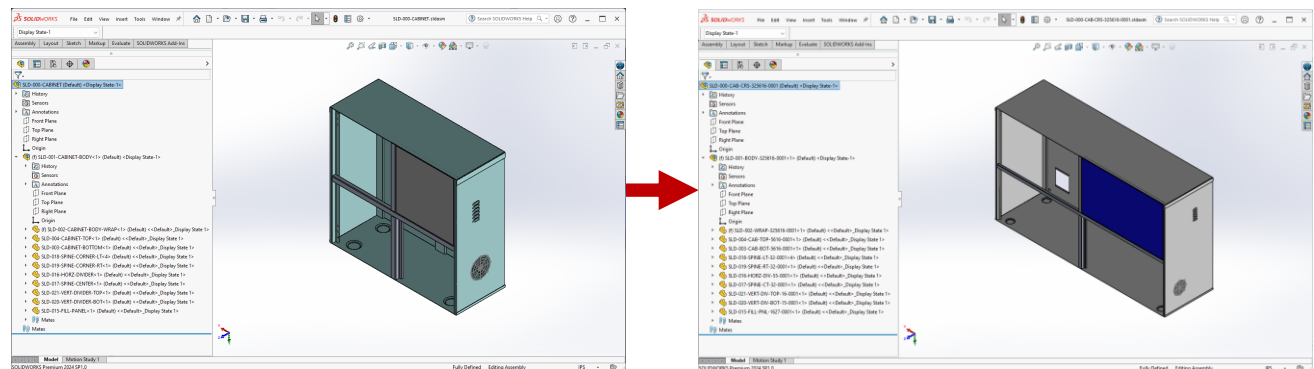
7. Open the Tree Widget in the left-hand panel and the *"Part"* tab to display the part information for the selected part that resides in the *Global Edge* database that matches the configured CAD Model:
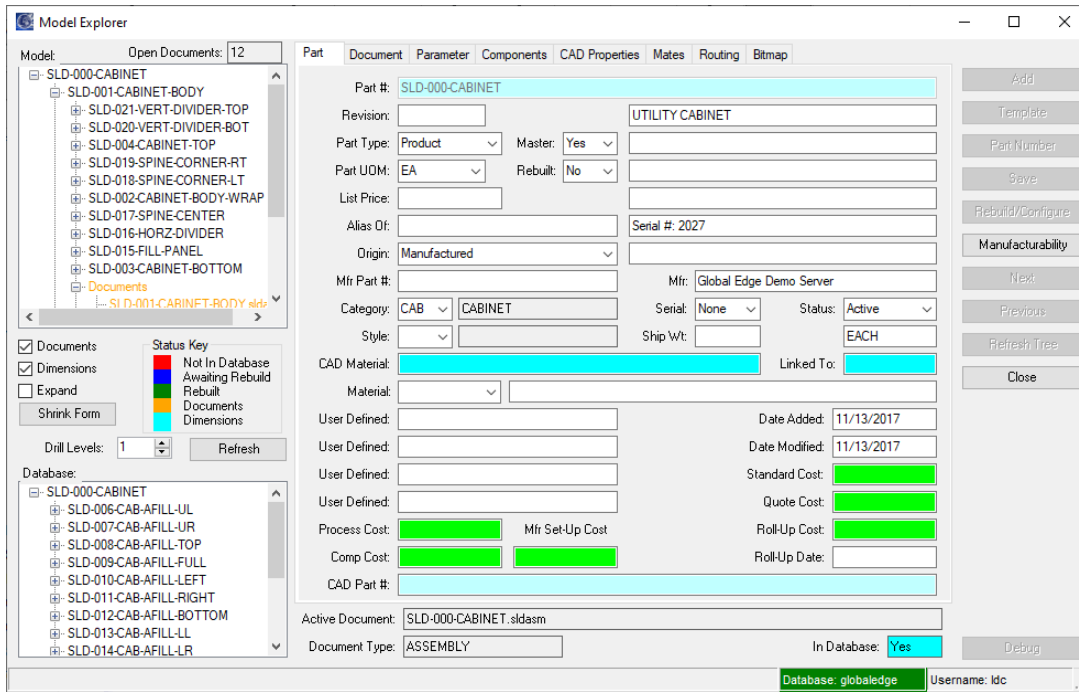
8. Select a Document in the left-hand panel and select the *"Document"* tab to display the document information for the selected part that resides in the *Global Edge* database that matches the configured CAD Model:
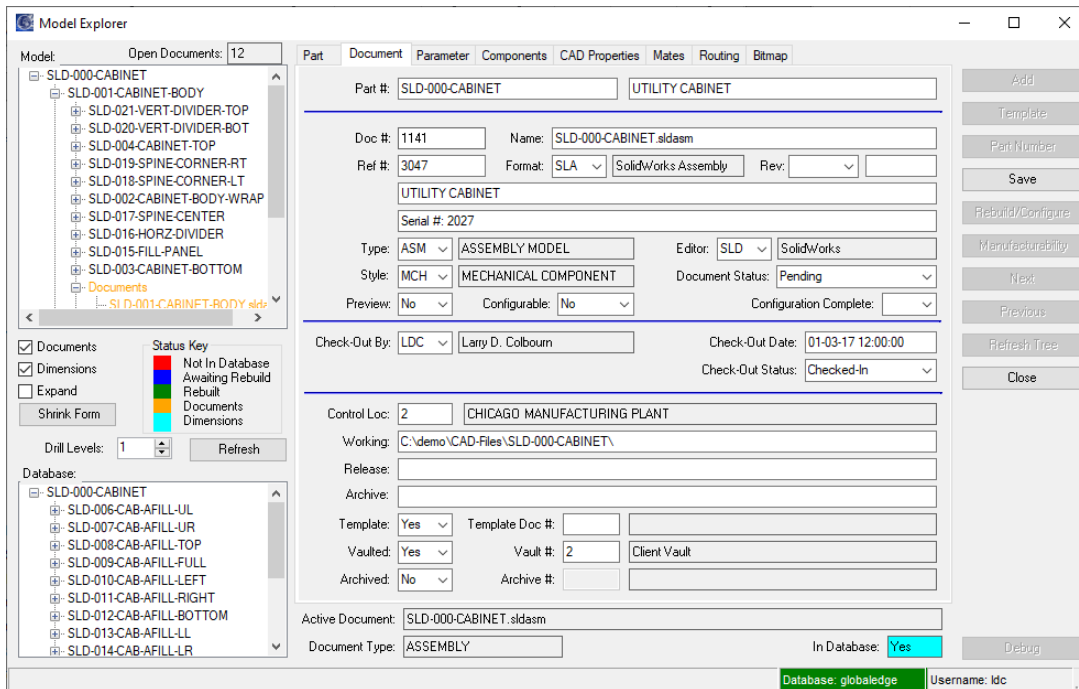
9. Select a Dimension in the left-hand panel and select the *"Parameter"* tab to display the parameter information for the selected part that resides in the *Global Edge* database that matches the configured CAD Model:
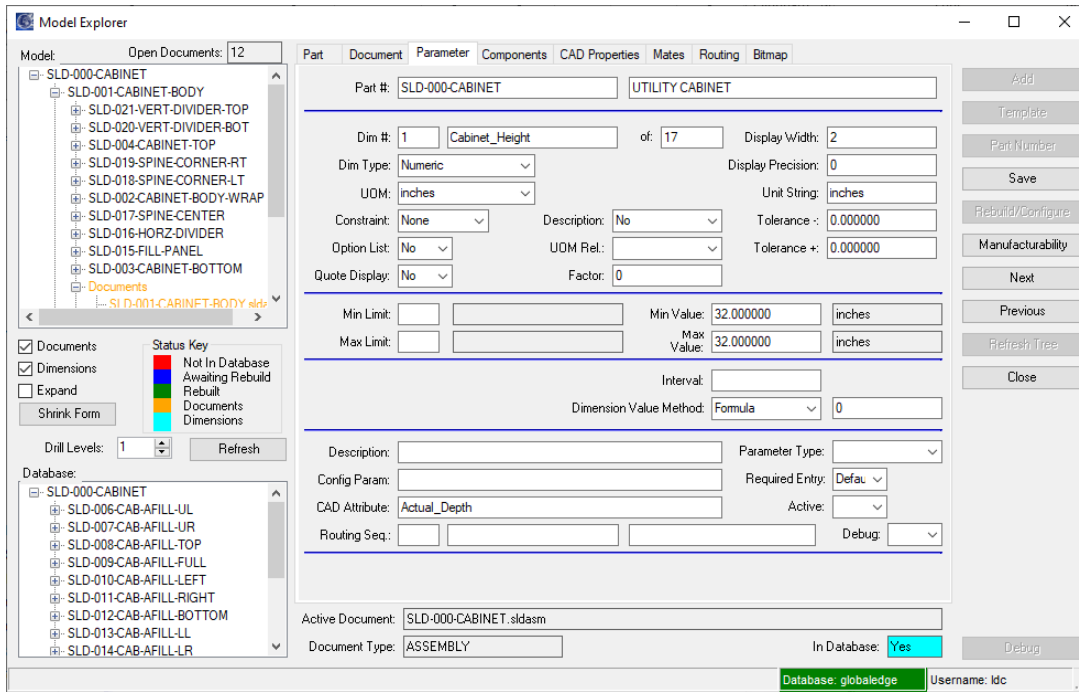
10. Select *"Components"* tab to display the assembly components for the selected part that resides in the *Global Edge* database that matches the configured CAD Model:
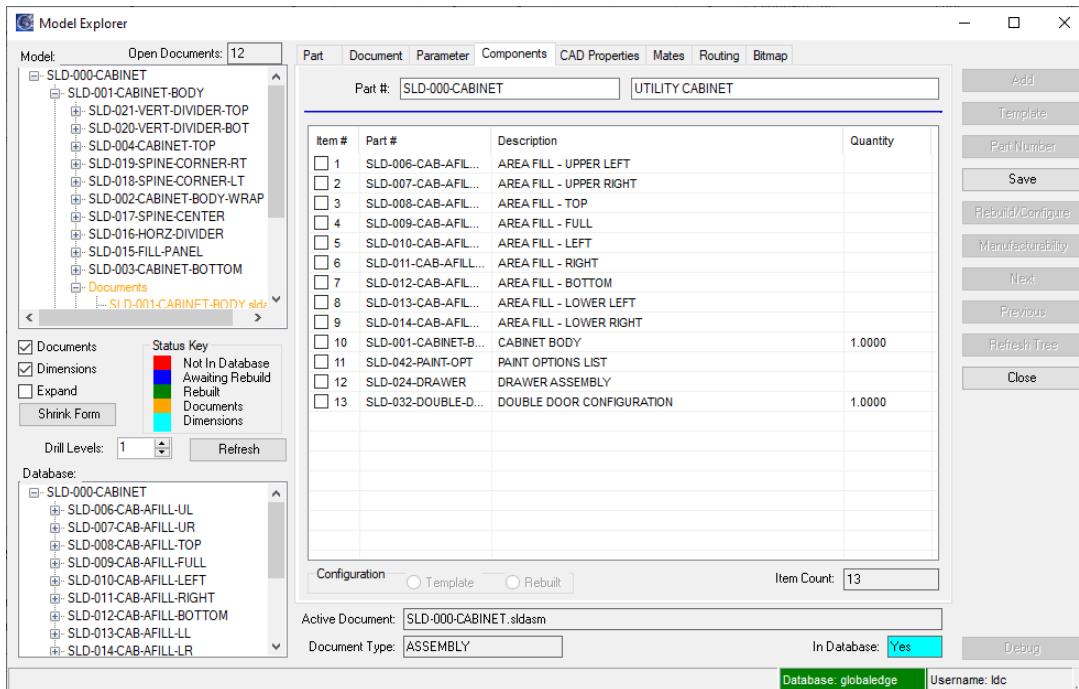
11. Select **"Mates"** tab to display the mate attributes for the selected part that resides in the **Global Edge** database that matches the configured CAD Model:
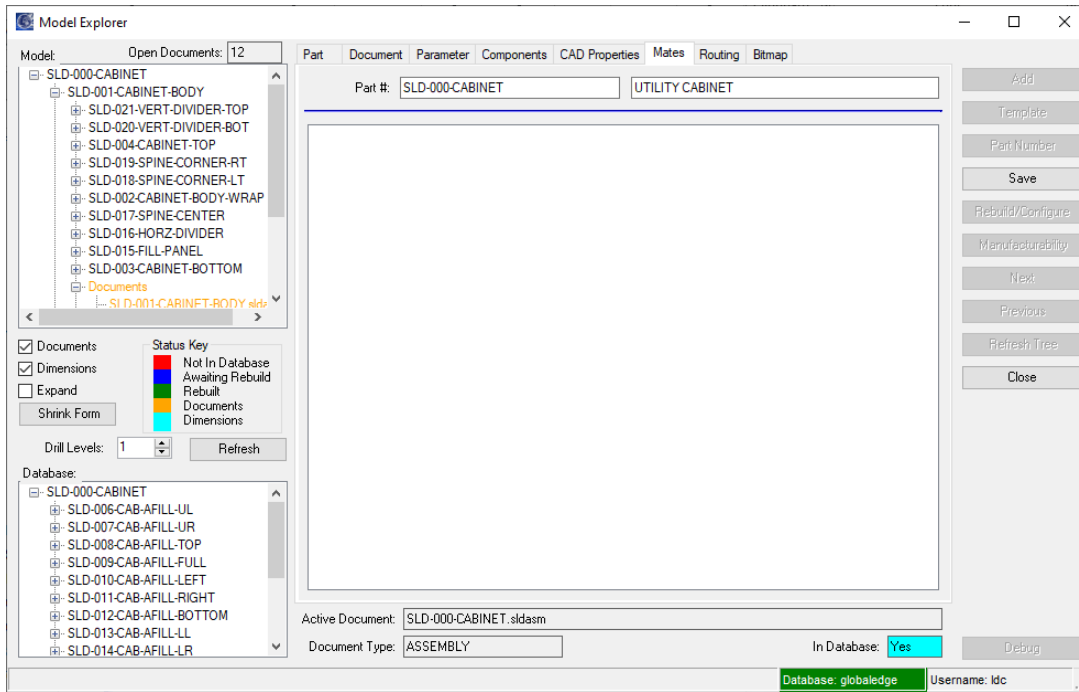
12. Select **"Routings"** tab to display the routings for the selected part that resides in the **Global Edge** database that matches the configured CAD Model:
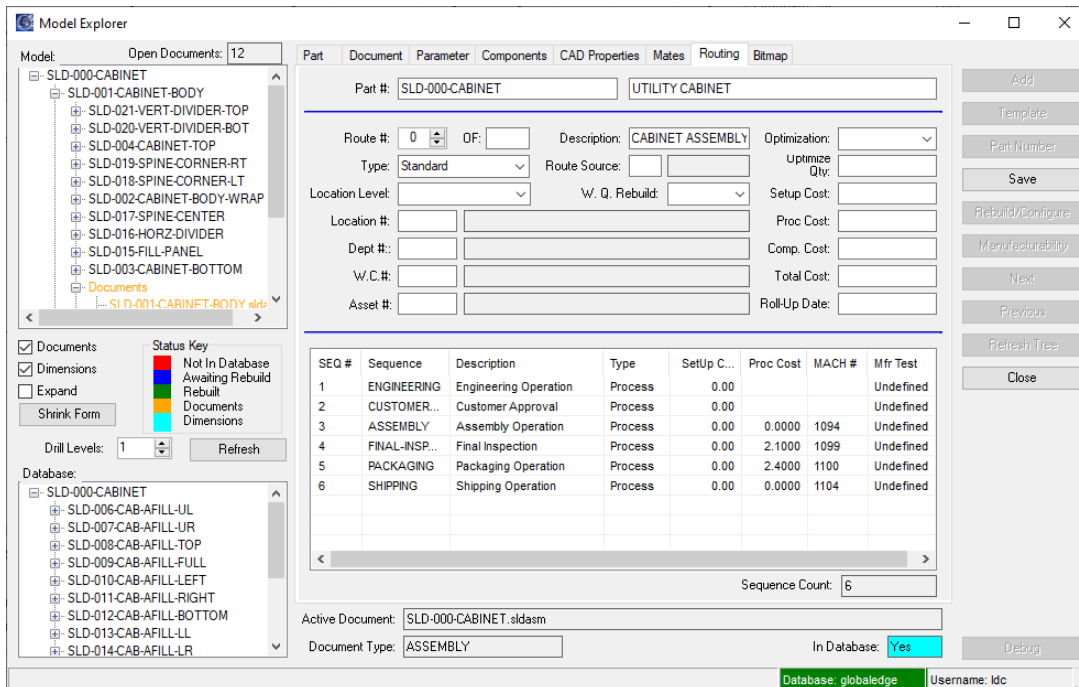
13. Select **"Bitmap"** tab to display BITMAP image for the selected part that resides in the **Global Edge** database that matches the configured CAD Model:

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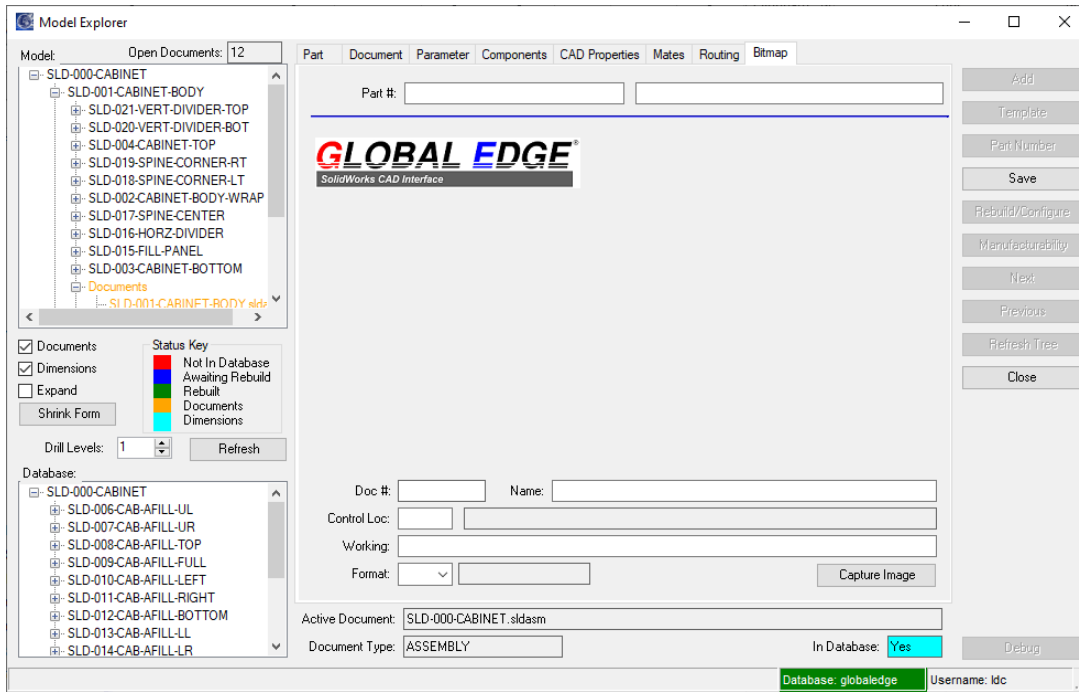
14. Select *"Manufacturability"* option to display the Manufacturability Test screen:

Demo Section 5: Integrated Manufacturing

Global Edge® Integrated Manufacturing includes functionality that automatically generates information to either drive an existing MES Manufacturing Execution System or provide complete capabilities manage your daily production which includes the following:

- **5.1 – Automated Job Build / Scheduling**
- **5.2 – Workstation Screen / Load Balancing / Schedule Export**
- **5.3 – Production Dashboard**
- **5.4 – Shop Floor Data Collection / IoT (Internet of Things)**
- **5.5 – Automated Production ERP Upload**

Demo Section 5: Integrated Manufacturing Overview

The following is an overview of Section 5 and what is illustrated within each of the steps.

- **5.1 – Automated Job Build / Scheduling:** The steps within this section illustrate how *Global Edge* can automatically generate complete job orders from orders that are downloaded from ERP. The automated tasks illustrated include:
  - o **Automated Job Build / Scheduling**

- **5.2 – Workstation Screen / Load Balancing / Schedule Export:** The steps within this section illustrate how *Global Edge* can schedule and manage production including load balancing, and the exporting of the workstation schedule to a CSV file to be imported into a third-party scheduling system. The automated tasks illustrated include:
  - o **Automated Production Order Generation**
  - o **Production Load Balancing**
  - o **Production Schedule Export**

- **5.3 – Production Dashboard:** The steps within this section illustrate how *Global Edge* can track real-time production results with a production dashboard. The automated tasks illustrated include:
  - o **Real-Time Production Monitoring by Work Center, Job, Process, Etc.**

- **5.4 – Shop Floor Data Collection / IoT (Internet of Things) Connectivity:** The steps within this section illustrate how *Global Edge* can integrate with the recording of production data on the shop floor. The automated tasks illustrated include:
  - o **Recording of PLC Production Counts**

- **5.5 – Automated Production ERP Upload:** The steps within this section illustrate how the *Global Edge* can upload production results / data back to ERP. The automated tasks illustrated include:
  - o **Upload of Production Results / Work in Process Inventory Transactions to ERP**

5.1 – Automated Job Build / Scheduling

Sample Job Orders (J-361 "job")

The following are sample Job Orders that are downloaded from ERP that will automatically build complete Production Orders that will illustrate the *"Production Scheduling / Execution"* capabilities of the *Global Edge* system:

JOB #	TYPE	JOB DATE	REQ. DATE	SCH. START	DESCRIPTION
1001	TEMPLATE				SHEET METAL PART FABRICATION
1002	TEMPLATE				SHEET METAL PARTS & ASSEMBLIES
1003	TEMPLATE				CUSTOM JOB TEMPLATE
1004	ORDER	TODAY	TODAY + 14	TODAY + 2	FABRICATE UTILITY CABINET
1005	ORDER	TODAY	TODAY + 14	TODAY + 2	FABRICATE LIGHT FIXTURE
1006	ORDER	TODAY	TODAY + 14	TODAY + 2	DEMO SHEET METAL PARTS

Sample Job Order Work Packs (J-424 "work_pack")

The *Global Edge* system provides the capability to divide Job Orders into Work Packs of similar manufacturing operations such as fabrication work packs, assembly work packs to improve shop floor efficiency. The following are sample Job Order Work Packs that will illustrate the *"Production Scheduling / Execution"* capabilities of the *Global Edge* system:

JOB #	W.P. #	SCH. START	SCH. END	START DATE	END DATE	% OF JOB	% COMPLETE	JOB DESCRIPTION
1001	1					100	0	Sheet Metal Components
1002	1					70	0	Sheet Metal Components
1002	2					30	0	Assembly Work Pack
1003	1					100	0	Template Work Pack

Sample Manufacturing Process / Routing Operation Data (R162 "process")

The following are sample Manufacturing Processes that are utilized with Routing Operations throughout the demonstration process:

PROCESS	DESCRIPTION	CLASS	TYPE	FORMED	SHEET MTL.	STD. COST	UOM
AIDA	AIDA Stamping Operation	FRM	F	1	1	75.0000	hours
ASSEMBLY	Assembly Operation	ASM	J	0	0	50.0000	hours
BATCH-OVEN	Batch Oven Operation	OVN	O	0	1	25.0000	hours
BEND	Press Brake Bend Operation	FRM	F	1	1	75.0000	hours
CHROMATE-ETCH	Chromating-Etching Operation	FIN	M	0	1	85.0000	hours
CORNER	Corner Bending Operation	FRM	F	1	1	35.0000	hours
CURING	Curing Operation	OVN	O	0	1	25.0000	hours
CUSTOMER-APPROVAL	Customer Approval	ENG	O	0	0	60.0000	hours
CUT-TO-LENGTH	Cut-to-Length Operation	SHR	M	0	1	55.0000	hours
DEBURR	Deburring Operation	FIN	M	0	1	45.0000	hours
DRESS	Dress Operation	WLD	J	0	0	45.0000	hours
EMBOSS	Embossing Operation	PNC	M	0	1	75.0000	hours
ENGINEERING	Engineering Operation	ENG	O	0	0	60.0000	hours
FINAL-INSPECT	Final Inspection	ISP	O	0	0	35.0000	hours
FLATTEN	Flatten Operation	FRM	F	1	1	75.0000	hours

Sample Manufacturing Process / Routing Operation Data (R162 "process") – Continued …

PROCESS	DESCRIPTION	CLASS	TYPE	FORMED	SHEET MTL.	STD. COST	UOM
FOLD	Folder Folding Operation	PNL	F	1	1	120.0000	hours
FORM	Forming Operation	FRM	F	1	1	75.0000	hours
FORM-2	Form 2 Person	FRM	F	1	1	75.0000	hours
GASKETING	Gasketing Operation	GSK	O	0	0	35.0000	hours
GENERAL-ASSEMBLY	General Assembly Operation	ASM	J	0	0	50.0000	hours
GENERAL-LABOR	General Labor	LBR	O	0	0	50.0000	hours
GRAIN	Graining Operation	FIN	M	0	1	45.0000	hours
HANGING	Hanging Operation	HNG	O	0	1	25.0000	hours
INSPECT	Inspection Operation	ISP	O	0	1	35.0000	hours
INSPECT-100	Inspect 100 Percent Operation	ISP	O	0	1	35.0000	hours
INSPECT-FINISH-DE	Insp.-Fin.+De-masking Operation	ISP	O	0	1	35.0000	hours
INSTALL-PEM-NUTS	Install Pem Nuts	PEM	J	0	0	50.0000	hours
INSTALL-PEM-STUDS	Install Pem Studs	PEM	J	0	0	50.0000	hours
LASER-CUT	Laser Cut Operation	LSR	M	0	1	140.0000	hours
MASKING	Masking Operation	PNT	L	0	1	40.0000	hours
MIG-WELD	MIG Weld Operation	WLD	J	0	0	45.0000	hours
PACKAGE	Package	PKG	O	0	0	35.0000	hours
PACKAGING	Packaging Operation	PKG	O	0	0	35.0000	hours
PACK-FOR-SHIPMENT	Pack for Shipment	PKG	O	0	0	35.0000	hours
PAINTING	Painting Operation	PNT	L	0	1	40.0000	hours
PANELBEND	Panel Bender Bending Operation	PNL	F	1	1	120.0000	hours
PEM	Pemsert Operation	PEM	J	0	0	25.0000	hours
PEM-2	Pemsert 2 Person Operation	PEM	J	0	0	25.0000	hours
POWDER-COAT	Powder Coat Operation	PNT	L	0	1	40.0000	hours
PROGRAM-NEW-PART	Program New Part Operation	PRG		0	0	50.0000	hours
PROGRAM-REV-PART	Program Revised Part Operation	PRG		0	0	50.0000	hours
PROOF-NEW-PART	Proof New Part Operation	PRF		0	0	50.0000	hours
PROOF-REV-PART	Proof Revised Part Operation	PRF		0	0	50.0000	hours
PUNCH	Turret Punch Operation	PNC	M	0	1	75.0000	hours
RIVET	Rivet Operation	ASM	J	0	0	50.0000	hours
SAND-PAINT-PREP	Sand / Paint / Preparation Operation	WPR	L	0	1	40.0000	hours
SCREEN-PRINT	Screen Printing Operation	PNT	L	0	1	40.0000	hours
SETUP-MASTER-FILE	Setup Master File Operation	PRG		0	0	50.0000	hours
SHAKE-OUT	Shake Out Operation	FIN	M	0	1	75.0000	hours
SHEAR	Shear Operation	SHR	M	0	1	55.0000	hours
SHIPPING	Shipping Operation	SHP	O	0	0	35.0000	hours
SPOT-WELD	Spot Welding Operation	WSP	J	0	0	45.0000	hours
STUD-WELDING	Stud Welding Operation	WST	J	0	0	45.0000	hours
TIG-WELD	TIG Weld Operation	WLD	J	0	0	45.0000	hours
TUMBLE-DEBURR	Tumble Deburr Operation	FIN	M	0	1	75.0000	hours
WASHING	Washing Operation	WSH	O	0	1	25.0000	hours
WASH-ONLY	Wash Only Operation	WSH	O	0	1	25.0000	hours
WELD-MD	Medium Seam-Tack Welding Operation	WLD	J	0	0	45.0000	hours
WELDING	Welding Operation	WLD	J	0	0	45.0000	hours
WHITNEY	Whitney Punch & Plasma Operation	PNC	M	0	1	75.0000	hours

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Sample Machine Tool Data (T-244 "fixed_assets")

The following are sample Machine Tools that are utilized throughout the demonstration process:

ASSET #	REF #	DESCRIPTION	CAT.	TYPE	WC #	COST RATE	BILL RATE
1001	SHEAR-1001	Squaring Shear with Return Feed	PRD	SHEAR	1	55.00	71.50
1002	SHEAR-1002	Shear Punch	PRD	SHEAR-PN	1	55.00	71.50
1003	LASER-1003	CNC Laser System	PRD	LASER	3	140.00	182.00
1004	TURRET-1004	CNC Turret Punch Press	PRD	TURRET	4	75.00	97.50
1005	TURRET-1005	Embossing Station	PRD	TURRET	4	35.00	45.50
1006	PEM-1006	Pemserter	PRD	PEMSERT	5	25.00	32.50
1007	PB-1007	CNC Hydraulic Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1008	PANEL-1008	CNC Panel Bender	PRD	PANEL-B	7	120.00	156.00
1009	WELD-1009	MIG Welder	PRD	WELDING	9	45.00	58.50
1010	WELD-1010	TIG Welder	PRD	WELDING	9	45.00	58.50
1011	FINISH-1011	Deburring Machine	PRD	FINISH	8	50.00	65.00
1012	FINISH-1012	Belt Sander	PRD	FINISH	8	25.00	32.50
1013	GRAIN-1013	Graining Machine	PRD	OTHER	8	45.00	58.50
1014	POLISH-1014	Polisher Station	PRD	POLISH	8	45.00	58.50
1015	HANG-1015	Hanging Station	PRD	HANGING	10	25.00	32.50
1016	WASH-1016	Wash Station	PRD	WASH	10	25.00	32.50
1017	PAINT-1017	Paint Booth	PRD	PAINT	10	40.00	52.00
1018	PAINT-1018	Sand-Paint Prep Station	PRD	PAINT	10	40.00	52.00
1019	OVEN-1019	Cure Oven	PRD	OVEN	10	25.00	32.50
1020	KITTING-1020	Kitting Station	PRD	KITTING	11	50.00	65.00
1021	ASSM-1021	Assembly Line	PRD	ASSEMBLY	11	50.00	65.00
1022	PRESS-1022	Press	PRD	ASSEMBLY	11	50.00	65.00
1023	ASSM-1023	Rivetor	PRD	ASSEMBLY	11	50.00	65.00
1024	GASKET-1024	Gasketing Station	PRD	GASKET	11	35.00	45.50
1025	LABOR-1025	General Labor	PRD	GENERAL	11	50.00	65.00
1026	INSPECT-1026	Inspection Station	PRD	INSPECT	12	35.00	45.50
1027	PACK-1027	Packaging Station	PRD	PACKAGE	14	35.00	45.50
1028	SHIP-1028	Shipping Station	PRD	SHIPPING	15	35.00	45.50
1029	WINDOWS	Windows Server	CMP			0.00	0.00
1030	CI-PB-1030	Cincinnati 135 MX8 Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1031	CI-PB-1031	Cincinnati 90 AF Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1032	CI-PB-1032	Cincinnati 135 AF Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1033	CI-PB-1033	Cincinnati 175 AF Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1034	CI-PB-1034	Cincinnati 230 AF Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1035	CI-PB-1035	Cincinnati 350 AF Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1036	FL-1-1036	Fork Lift #1	PRD	GENERAL		0.00	0.00
1037	FL-2-1037	Fork Lift #2	PRD	GENERAL		0.00	0.00
1038	CART #1-1038	Inventory Cart #1	PRD	GENERAL		0.00	0.00
1039	CART #2-1039	Inventory Picking and Stocking Cart	PRD	GENERAL		0.00	0.00
1040	GRIND-1040	Small Manual Grinding Station	PRD	WELDGRND	8	25.00	32.50
1041	CI-SHR-1041	Cincinnati HS Series Shear	PRD	SHEAR	1	55.00	71.50

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Sample Machine Tool Data (T-244 "fixed_assets") – Continued ...

ASSET #	REF #	DESCRIPTION	CAT.	TYPE	WC #	COST RATE	BILL RATE
1042	WELDING-1042	Medium Manual Door Bay Station (Line 1)	PRD	WELDING	9	45.00	58.50
1043	WLDSTUD-1043	Medium Manual Studding Mach (Capacitive)	PRD	WELDSTUD	9	45.00	58.50
1044	WLDTACK-1044	Medium Manual Tack Machine (Line 1)	PRD	WELDTACK	9	45.00	58.50
1045	WLDSPOT-1045	Medium Manual Spot Welding Station	PRD	WELDSPOT	9	45.00	58.50
1046	SCREEN-1046	Screen Printing Machine	PRD	OTHER	10	40.00	52.00
1047	CHROME-1047	Chromating / Etching Machine	PRD	OTHER	8	85.00	110.50
1048	MASK-1048	Masking Machine	PRD	OTHER	10	40.00	52.00
1049	DRESS-1049	Dressing Machine	PRD	OTHER	9	45.00	58.50
1050	SHAKE-1050	Shake-Out Machine	PRD	OTHER	8	75.00	97.50
1051	PUNCH-1051	Punch & Plasma Machine	PRD	OTHER	2	75.00	97.50
1052	STAMP-1052	Stamping Machine	PRD	OTHER	7	75.00	97.50
1053	WORK-1053	Work Bench Table	PRD	ASSEMBLY	11	50.00	65.00
1054	CORNER-1054	Corner Machine	PRD	OTHER	7	75.00	97.50
1055	PR-BRK-1055	JOG Press Brake	PRD	PR-BRAKE	7	75.00	97.50
1056	ROLLER-1056	Roller Machine	PRD	OTHER	7	75.00	97.50

Sample Workstation Screen

Once the Production Jobs are automatically generated scheduled from the downloaded ERP Job Orders, the **Global Edge** system assigns each of the jobs to the appropriate Workstation screen to execute production schedules for each work center (Work Cell). The following are sample Workstation schedules will illustrate the **"Production Scheduling / Execution"** capabilities of the **Global Edge** system.

Sample Workstation Production Schedule

Asset #	Machine Tool Description	Dept #	W.C. #
1006	Salvagnini L3Xe Fiber	8	3

Job #	Part Number	Process	Trans #	Prod. #	Card #	Sch. Start	Sch. End	Qty.
1008	SLD-002-WRAP-325616-0001	LASER-CUT	777	1001	46	5/24/2021	5/29/2021	5.0000
1008	SLD-003-CAB-BOT-5616-0001	LASER-CUT	779	1003	48	5/24/2021	5/29/2021	5.0000
1008	SLD-004-CAB-TOP-5616-0001	LASER-CUT	780	1004	49	5/24/2021	5/29/2021	5.0000
1008	SLD-015-FILL-PNL-1627-0001	LASER-CUT	781	1005	50	5/24/2021	5/29/2021	5.0000
1008	SLD-017-SPINE-CT-32-0001	LASER-CUT	784	1008	53	5/24/2021	5/29/2021	5.0000
1008	SLD-018-SPINE-LT-32-0001	LASER-CUT	786	1010	55	5/24/2021	5/29/2021	5.0000
1008	SLD-019-SPINE-RT-32-0001	LASER-CUT	788	1012	57	5/24/2021	5/29/2021	5.0000

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Asset #	Machine Tool Description	Dept #	W.C. #
1123	Cincinnati CL900 Laser	8	3

Job #	Part Number	Process	Trans #	Prod. #	Card #	Sch. Start	Sch. End	Qty.
1009	LIGHT-01-LENSE-FRAME	LASER-CUT	623	1026	71	5/25/2021	5/30/2021	10.0000
1009	LIGHT-03-LENSE-BRACKET	LASER-CUT	630	1028	73	5/25/2021	5/30/2021	10.0000
1009	LIGHT-04-HOUSING-FLANGE	LASER-CUT	637	1030	75	5/25/2021	5/30/2021	10.0000
1009	LIGHT-05-LENSE-RET-BRKT	LASER-CUT	644	1032	77	5/25/2021	5/30/2021	10.0000
1009	LIGHT-06-FIXTURE-HOUSING	LASER-CUT	651	1034	79	5/25/2021	5/30/2021	10.0000
1009	LIGHT-07-YOKE-BRACKET	LASER-CUT	658	1036	81	5/25/2021	5/30/2021	10.0000
1010	CI-01-4-11759_201A_07	LASER-CUT	794	1076	121	5/26/2021	5/31/2021	15.0000
1011	CI-02-4-11811_126_15	LASER-CUT	806	1088	133	5/27/2021	6/1/2021	20.0000
1012	CI-03-4-11811_126_131	LASER-CUT	818	1100	145	5/28/2021	6/2/2021	25.0000
1013	CI-04-09-1908-A	LASER-CUT	829	1111	156	5/29/2021	6/3/2021	30.0000
1014	CI-05-1000-018-B2-PLG	LASER-CUT	841	1123	168	5/30/2021	6/4/2021	35.0000

Asset #	Machine Tool Description	Dept #	W.C. #
1109	Cincinnati HS Series Shear	8	1

Job #	Part Number	Process	Trans #	Prod. #	Card #	Sch. Start	Sch. End	Qty.
1008	SLD-016-HORZ-DIV-55-0001	CUT-TO-LENGTH	782	1006	51	5/24/2021	5/29/2021	5.0000
1008	SLD-020-VERT-DIV-BOT-15-0001	CUT-TO-LENGTH	790	1014	59	5/24/2021	5/29/2021	5.0000
1008	SLD-021-VERT-DIV-TOP-16-0001	CUT-TO-LENGTH	792	1016	61	5/24/2021	5/29/2021	5.0000
1009	LIGHT-09-FRAME-CHANNEL	CUT-TO-LENGTH	851	1038	83	5/25/2021	5/30/2021	10.0000

Production Scheduling / Execution Workflow Diagram

Global Edge Integrated Manufacturing provides the capabilities to drive and record production on a real-time basis using the information generated throughout the integrated factory enterprise.

5.1 – Automated Job Build / Scheduling

These steps illustrate the automated job build and scheduling capabilities of orders that were downloaded from ERP.

Workflow Steps

1. Select the *"Manufacturing > Job Order Maintenance"* option on the *Global Edge* main menu:

2. The *"Job Maintenance"* screen is displayed:
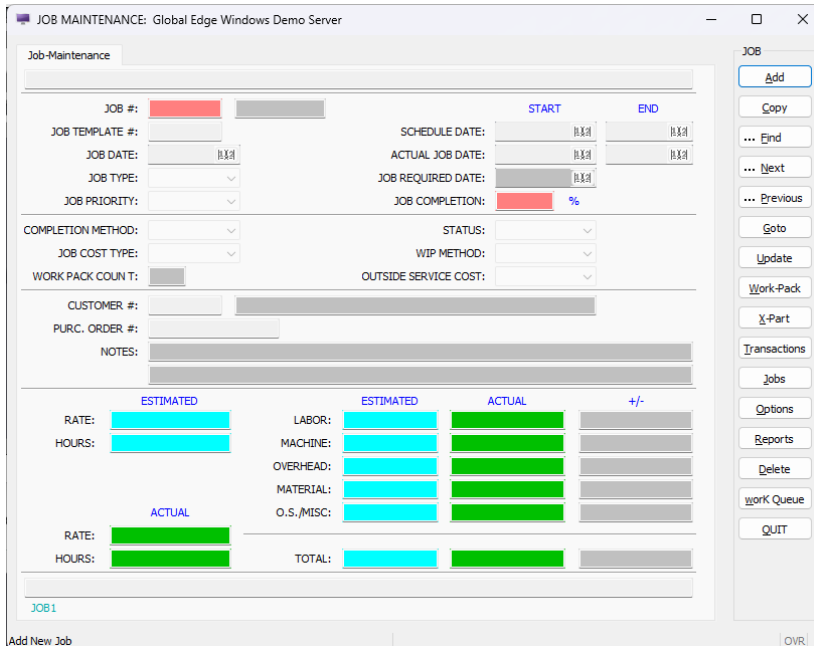
3. Select the *"Jobs"* option to display the *"Job Build"* screen:

> *Global Edge* provides the ability to automatically build jobs that have been downloaded from ERP that are structured and scheduled based on rules from template jobs that can be customized for specific product lines. During this process, *Global Edge* automatically matches each of the job orders with the appropriate user defined template jobs and then builds the job organizing and scheduling operations into optimized work packs that make efficient use of machine tools and people.

4. Select the *"Templates"* option to assign the appropriate TEMPLATE JOB to the downloaded jobs followed by the *"All"* option which will display the following:

5. Select the *"Build"* option to execute the automated build of the selected jobs. When the job build is complete, the following is displayed:

6. Select the *"Issue"* option to issue the Pending jobs that are selected by the check boxes. When the job issue is complete, the following is displayed:

7. Select the *"Schedule"* option to schedule the Issued jobs that are selected by the check boxes. When the job schedule generation is complete, the following is displayed:

5.2 – Workstation Screen / Load Balancing / Schedule Export

These steps illustrate the workstation screen including load balancing and the exporting of production schedules to a CSV file for the purpose of integration with a third-party scheduling system.

Workflow Steps

1. Select the *"Manufacturing > Workstation"* option on the *Global Edge* main menu:

2. This will display the following Workstation screen and menu options:
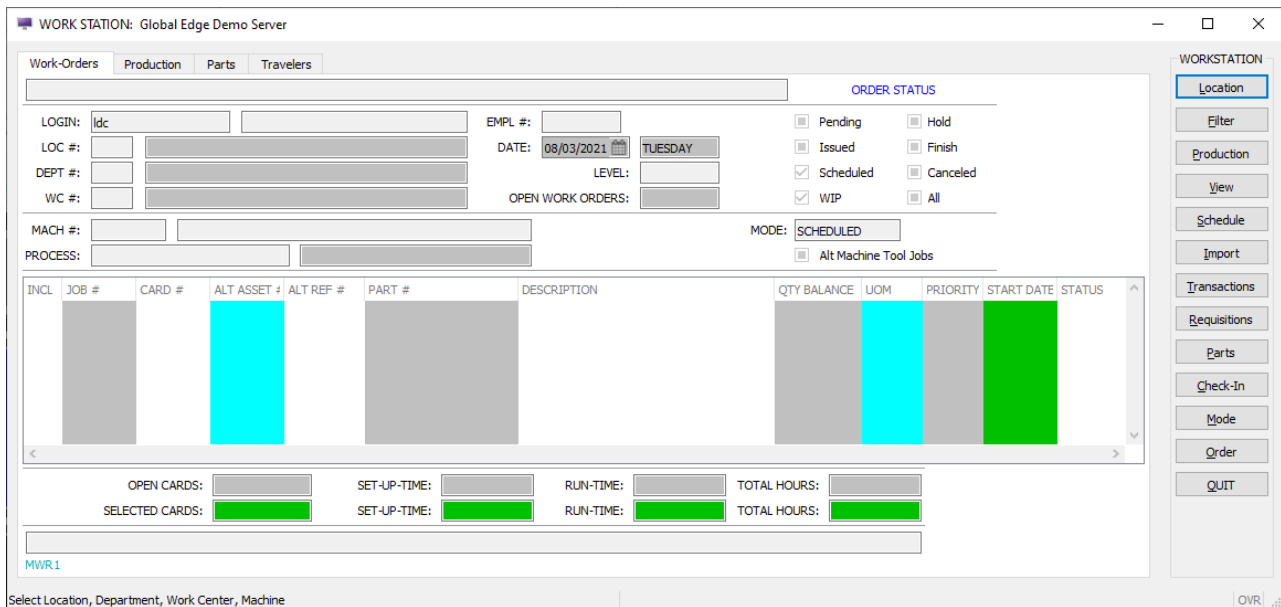
3. Select **"Location"** option and enter Location, Department and Work Center numbers including the Machine Tool number to access, followed by filling in the PROCESS field which will display the following Job Orders:

INCL	JOB #	CARD #	ALT ASSET #	ALT REF #	PART #	DESCRIPTION	QTY BALANCE	UOM	PRIORITY	START DATE	STATUS
☐	1010	1235			LIGHT-03-LENSE-BRACKET	LIGHT FIXTURE LENSE BRACKET	10.0000	each	3	08/06/2021	Scheduled
☐	1010	1242			LIGHT-04-HOUSING-FLA...	LIGHT FIXTURE HOUSING FLANGE	10.0000	each	3	08/06/2021	Scheduled
☐	1010	1249			LIGHT-05-LENSE-RET-BRKT	LIGHT FIXTURE LENSE RETAINING BRACKET	10.0000	each	3	08/06/2021	Scheduled
☐	1010	1256			LIGHT-06-FIXTURE-HOUS...	LIGHT FIXTURE HOUSING	10.0000	each	3	08/06/2021	Scheduled
☐	1010	1228			LIGHT-01-LENSE-FRAME	LIGHT FIXTURE LENSE FRAME	10.0000	each	3	08/06/2021	Scheduled
☐	1010	1263			LIGHT-07-YOKE-BRACKET	LIGHT FIXTURE YOKE BRACKET	10.0000	each	3	08/06/2021	Scheduled
☐	1011	1270			CI-01-4-11759_201A_07	APRON	50.0000	EA	3	08/07/2021	Scheduled
☐	1012	1284			CI-02-4-11811_126_15	LOAD CENTER BOX	125.0000	EA	3	08/08/2021	Scheduled

WORK STATION: Global Edge Demo Server

Work-Orders | Production | Parts | Travelers

ORDER STATUS

LOGIN: ldc
LOC #: 1 CORP. HEADQUARTERS / MANUFACTURING
DEPT #: 8 MANUFACTURING
WC #: 3 LASER CUTTING

EMPL #:
DATE: 08/03/2021 TUESDAY
LEVEL:
OPEN WORK ORDERS: 11

☐ Pending   ☐ Hold
☑ Issued   ☐ Finish
☑ Scheduled   ☐ Canceled
☑ WIP   ☐ All

MACH #: 1123 Cincinnati CL900 Laser
PROCESS: LASER-CUT   Laser Cut

MODE: SCHEDULED
☐ Alt Machine Tool Jobs

OPEN CARDS: 11   SET-UP-TIME: 1.10   RUN-TIME: 3.67   TOTAL HOURS: 4.77
SELECTED CARDS: 0   SET-UP-TIME: 0.00   RUN-TIME: 0.00   TOTAL HOURS: 0.00

MWR1

Select Location, Department, Work Center, Machine

OVR

WORKSTATION

Location
Filter
Production
View
Schedule
Import
Transactions
Requisitions
Parts
Check-In
Mode
Order
QUIT

4. Select *"Filter"* option and check the *"Alt Machine Tool Jobs"* check box followed by *"OK > View"* option to include production orders scheduled and assigned to other machine tools that can be run on the selected machine tool:

Global Edge provides a full functioned workstation screen that provides the shop floor operator to manage the work centers they oversee. This includes the ability to load balance orders between available machines and export schedules to third party scheduling software.

5. Select *"Production > Select"* option and select the Job to record production for:

WORK STATION: Global Edge Demo Server

Work-Orders | Production | Parts | Travelers

Select Work Order for Transactions, then Press [OK]:

ORDER STATUS

LOGIN:	ldc		
LOC #:	1	CORP. HEADQUARTERS / MANUFACTURING	
DEPT #:	8	MANUFACTURING	
WC #:	3	LASER CUTTING	

EMPL #:
DATE: 07/28/2021   WEDNESDAY
LEVEL:
OPEN WORK ORDERS: 30

☐ Pending   ☐ Hold
☐ Issued   ☐ Finish
☑ Scheduled ☐ Canceled
☑ WIP   ☐ All

MACH #: 1123   Cincinnati CL900 Laser   MODE: SCHEDULED
PROCESS: LASER-CUT   Laser Cut   ☑ Alt Machine Tool Jobs

INCL	JOB #	CARD #	ALT ASSET #	ALT REF #	PART #	DESCRIPTION	QTY BALANCE	UOM	PRIORITY	START DATE	STATUS
☐	1009	1036	1006	LASER-1006	SLD-017-SPINE-CT-32-00...	CABINET SPINE - CENTER	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1038	1006	LASER-1006	SLD-018-SPINE-LT-32-0001	CABINET SPINE - CORNER - LEFT	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1035	1006	LASER-1006	SLD-015-FILL-PNL-1627-...	CABINET FILL PANEL	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1040	1006	LASER-1006	SLD-019-SPINE-RT-32-00...	CABINET SPINE - CORNER - RIGHT	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1031	1006	LASER-1006	SLD-002-WRAP-325616-...	CABINET BODY WRAP	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1034	1006	LASER-1006	SLD-004-CAB-TOP-5616-...	CABINET BODY TOP	5.0000	EA	3	07/29/2021	Scheduled
☐	1009	1033	1006	LASER-1006	SLD-003-CAB-BOT-5616-...	CABINET BODY BOTTOM	5.0000	EA	3	07/29/2021	Scheduled
☐	1010	1057			LIGHT-03-LENSE-BRACKET	LIGHT FIXTURE LENSE BRACKET	10.0000	each	3	07/30/2021	Scheduled
☐	1010	1050			LIGHT-01-LENSE-FRAME	LIGHT FIXTURE LENSE FRAME	10.0000	each	3	07/30/2021	Scheduled
☐	1010	1085			LIGHT-07-YOKE-BRACKET	LIGHT FIXTURE YOKE BRACKET	10.0000	each	3	07/30/2021	Scheduled
☐	1010	1078			LIGHT-06-FIXTURE-HOUS...	LIGHT FIXTURE HOUSING	10.0000	each	3	07/30/2021	Scheduled
☐	1010	1071			LIGHT-05-LENSE-RET-BRKT	LIGHT FIXTURE LENSE RETAINING BRACKET	10.0000	each	3	07/30/2021	Scheduled
☐	1010	1064			LIGHT-04-HOUSING-FLA...	LIGHT FIXTURE HOUSING FLANGE	10.0000	each	3	07/30/2021	Scheduled
☐	1011	1092			CI-01-4-11759_201A_07	APRON	50.0000	EA	3	07/31/2021	Scheduled
☐	1012	1106			CI-02-4-11811_126_15	LOAD CENTER BOX	125.0000	EA	3	08/01/2021	Scheduled
☐	1013	1120			CI-03-4-11811_126_131	BOTTOM DISPLAY LIGHT HOUSING	75.0000	EA	3	08/02/2021	Scheduled
☐	1014	1134			CI-04-09-1908-A	SHEET METAL HOUSING	50.0000	EA	3	08/03/2021	Scheduled
☐	1015	1148			CI-05-1000-018-B2-PLG	SHEET METAL PANEL	100.0000	EA	3	08/04/2021	Scheduled
☐	1016	1165	1005	LASER-1005	DEMO-XFORM-BOTTOM	TRANSFORMER CABINET BOTTOM	20.0000	each	3	08/05/2021	Scheduled
☐	1016	1169	1005	LASER-1005	DEMO-XFORM-LID	TRANSFORMER CABINET LID	20.0000	each	3	08/05/2021	Scheduled
☐	1016	1167	1005	LASER-1005	DEMO-XFORM-FRONT	TRANSFORMER FRONT PANEL	20.0000	each	3	08/05/2021	Scheduled
☐	1016	1171	1005	LASER-1005	DEMO-XFORM-WRAPPER	TRANSFORMER BODY WRAPPER	20.0000	each	3	08/05/2021	Scheduled
☐	1017	1176	1005	LASER-1005	DEMO-XFORM-BOTTOM	TRANSFORMER CABINET BOTTOM	15.0000	each	3	08/06/2021	Scheduled
☐	1017	1180	1005	LASER-1005	DEMO-XFORM-LID	TRANSFORMER CABINET LID	15.0000	each	3	08/06/2021	Scheduled
☐	1017	1178	1005	LASER-1005	DEMO-XFORM-FRONT	TRANSFORMER FRONT PANEL	15.0000	each	3	08/06/2021	Scheduled
☐	1017	1182	1005	LASER-1005	DEMO-XFORM-WRAPPER	TRANSFORMER BODY WRAPPER	15.0000	each	3	08/06/2021	Scheduled
☐	1018	1193	1005	LASER-1005	DEMO-XFORM-WRAPPER	TRANSFORMER BODY WRAPPER	30.0000	each	3	08/07/2021	Scheduled
☐	1018	1191	1005	LASER-1005	DEMO-XFORM-LID	TRANSFORMER CABINET LID	30.0000	each	3	08/07/2021	Scheduled
☐	1018	1187	1005	LASER-1005	DEMO-XFORM-BOTTOM	TRANSFORMER CABINET BOTTOM	30.0000	each	3	08/07/2021	Scheduled
☐	1018	1189	1005	LASER-1005	DEMO-XFORM-FRONT	TRANSFORMER FRONT PANEL	30.0000	each	3	08/07/2021	Scheduled

OK
Cancel
F6-Detail

OPEN CARDS:	30	SET-UP-TIME: 1.80	RUN-TIME: 15.39	TOTAL HOURS: 17.19
SELECTED CARDS:	0	SET-UP-TIME: 0.00	RUN-TIME: 0.00	TOTAL HOURS: 0.00

MWR1

OVR

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5. Select **"OK"** to display the following screen form and menu options:

6. Select **"Finish"** option and record Quantity Produced and Quantity Scrapped including entering END DATE/TIME which will display the following prompt:

7. After answering *"Yes"*, the Production Transaction is displayed at the bottom of the screen:

8. Select *"QUIT > Transaction"* option to display the following screen form and menu options:

9. Select **"Approve"** option followed by the **"Post"** option to approve and post the Production, which will then display the following:

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5.3 – Production Dashboard

5.3 – Production Dashboard

These steps illustrate the capabilities provided by the *Global Edge* Production Dashboard for real-time monitoring of production.

Sample Production Orders

Once the *Global Edge* system downloads ERP Sales Orders / Job Orders and automatically builds more complete Job Orders, the process also includes the automatic generation of specific Production Orders within those Job Orders to be schedule and executed within specific Work Centers (Work Cells). The following are sample Production Orders that will illustrate the *"Smart Factory Shop Floor Integration"* capabilities of the *Global Edge* system.

Sample Production Orders

Prod. Order #	Part Number	Qty.	UOM	Job #	WP #	List #	Seq. Trans #	Rel. Date	Sch. Date
1001	SLD-002-WRAP-325616-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1002	SLD-002-WRAP-325616-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1003	SLD-003-CAB-BOT-5616-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1004	SLD-004-CAB-TOP-5616-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1005	SLD-015-FILL-PNL-1627-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1006	SLD-016-HORZ-DIV-55-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1007	SLD-016-HORZ-DIV-55-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1008	SLD-017-SPINE-CT-32-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1009	SLD-017-SPINE-CT-32-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1010	SLD-018-SPINE-LT-32-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1011	SLD-018-SPINE-LT-32-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1012	SLD-019-SPINE-RT-32-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1013	SLD-019-SPINE-RT-32-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1014	SLD-020-VERT-DIV-BOT-15-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1015	SLD-020-VERT-DIV-BOT-15-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1016	SLD-021-VERT-DIV-TOP-16-0001	5.0000	EA	1008	1	1	1	5/24/2021	5/24/2021
1017	SLD-021-VERT-DIV-TOP-16-0001	5.0000	EA	1008	1	1	2	5/24/2021	5/24/2021
1018	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	1	5/29/2021	5/29/2021
1019	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	2	5/29/2021	5/29/2021
1020	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	3	5/29/2021	5/29/2021
1021	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	4	5/29/2021	5/29/2021
1022	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	5	5/29/2021	5/29/2021
1023	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	6	5/29/2021	5/29/2021
1024	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	7	5/29/2021	5/29/2021
1025	SLD-001-BODY-325616-0001	5.0000	EA	1008	2	1	8	5/29/2021	5/29/2021

Shop Floor Data Collection / Dashboard Workflow Diagram

Global Edge Integrated Manufacturing provides the capabilities to drive and record production on a real-time basis using the information generated throughout the integrated factory enterprise.

Workstation Screen to Execute and Record Real-Time Shop Floor Production Closing the Loop on Industry 4.0 Integrated Factory

Dashboard Provides Real-Time Production and Machine Tool Performance Up Time Information

Dashboard / IoT Smart Factory Integration
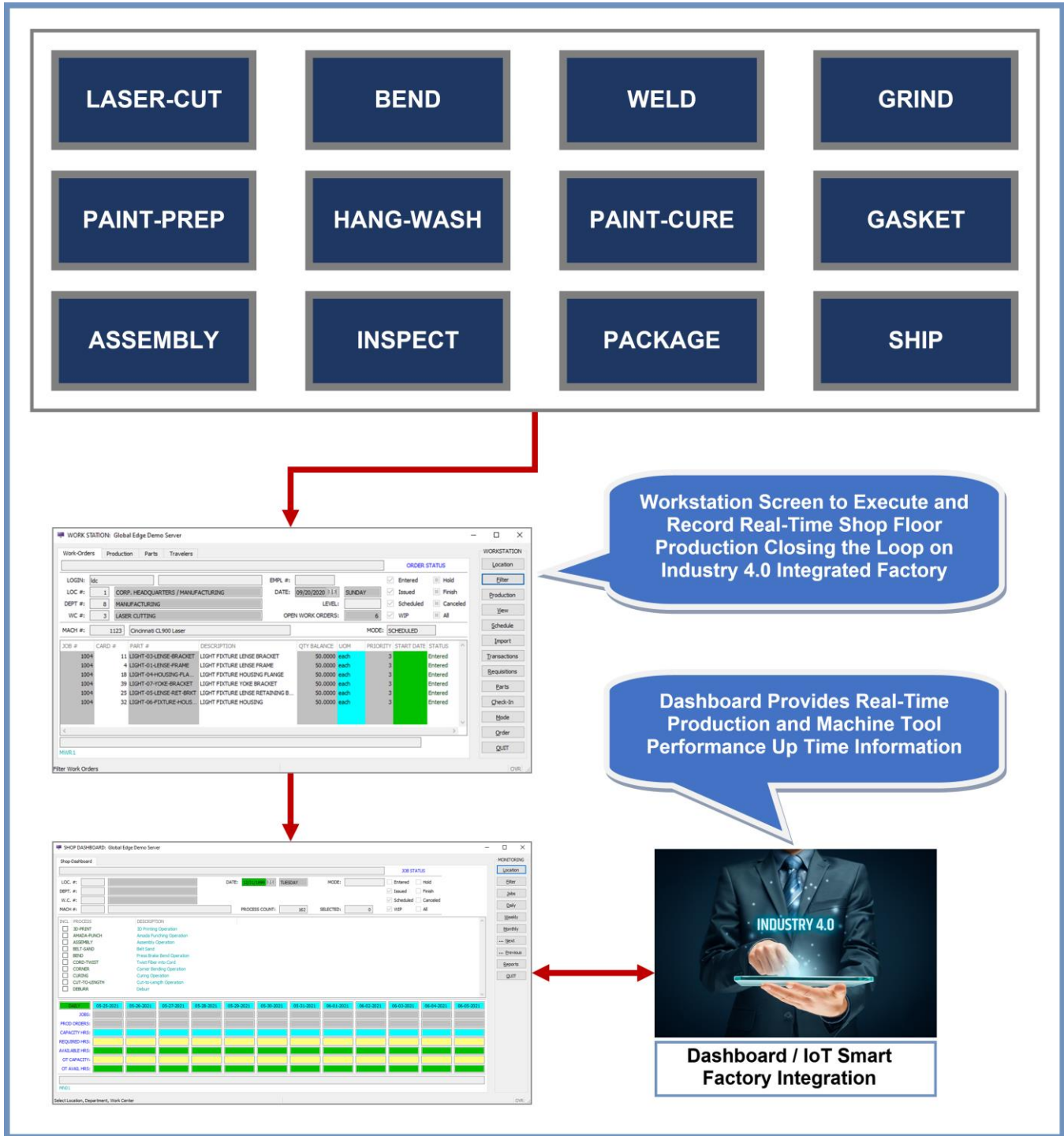
Workflow Steps

1. Select the *"Manufacturing > Shop Dashboard"* option on the *Global Edge* main menu:

2. This will display the Shop Dashboard screen and following menu options:
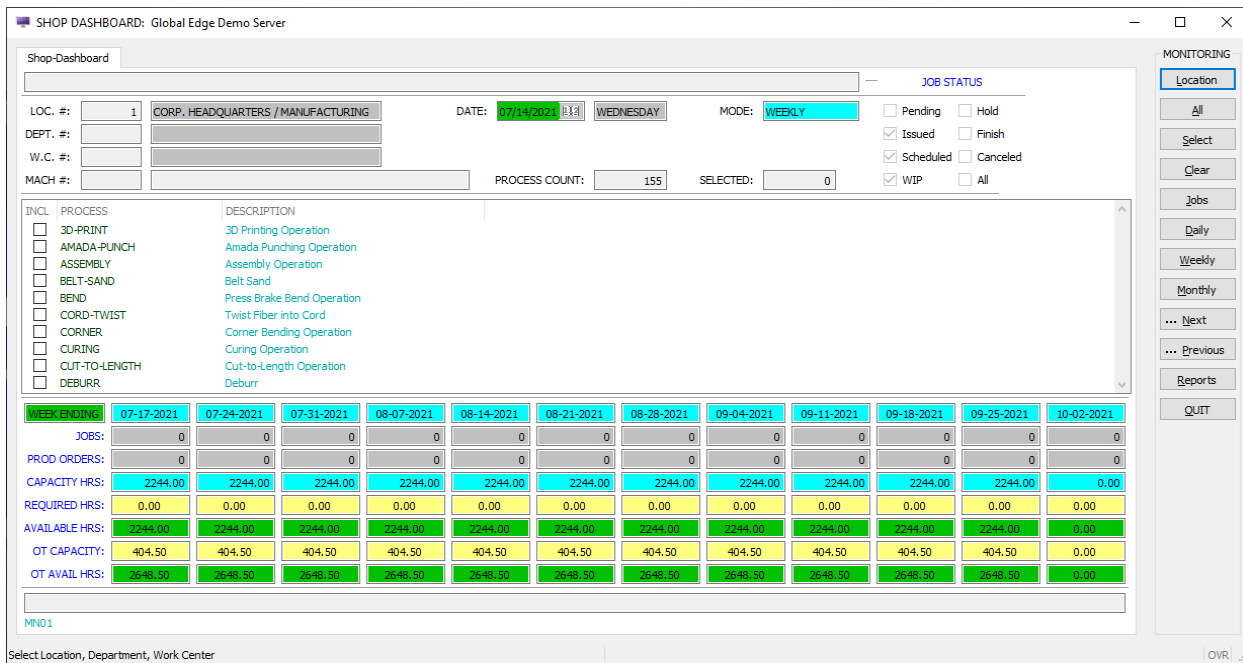
3. Select *"Location"* option and enter Location, Department, Work Center and Machine Tool Number followed by *"Select"* option to select manufacturing process for selected machine tool to view current production for:

5.4 – Shop Floor Data Collection / IoT (Internet of Things) Connectivity

Global Edge Integrated Manufacturing provides the capability to integrate directly with the shop floor machine tools utilizing IoT (Internet of Things) connectivity and store this information in the *"Engineering & Manufacturing Data Warehouse"*. The production counts collected from the machine tool PLCs are integrated directly with the Production Job Orders maintained in *Global Edge* that appear real-time in the Production Dashboard and are uploaded to ERP to provide full visibility of the manufacturing shop floor with Smart Factory Shop Floor Industry 4.0 integration capabilities.

5.5 – Automated Production ERP Upload

These steps illustrate the upload of shop floor production data back to an ERP system:

Workflow Steps

1. Launch the *Global Edge ERP Interface* to display the following screen:

2. Highlight *"Generic ERP Upload"* data map followed by *"Transfer"* option to initiate the upload of shop floor production data back to ERP.

Demo Section 6: Integrated Financials

Global Edge® *Engineering Assistant* provides full-functioned accounting / financial management capabilities that are directly integrated with quoting, sales, engineering, manufacturing, and supply chain. The sections that illustrate these capabilities include:

- **6.1 – Order Entry / Invoicing / Accounts Receivable**
- **6.2 – Accounts Payable / Purchase Order**
- **6.3 – Inventory Management**
- **6.4 – General Ledger / Bank Account**
- **6.5 – Payroll Time & Attendance**

Section 6: Integrated Financials Overview

The following is an overview of Section 6 and what is illustrated within each of the steps.

- **6.1 – Order Entry / Invoicing / Accounts Receivable:** The steps within this section illustrate how the *Global Edge* software provides the generation of sales orders, invoices and accounts receivable transaction which include:
  - o **Sales Order Generation**
  - o **Invoicing / Billing**
  - o **Accounts Receivables / Collection / Aging**

- **6.2 – Accounts Payable / Purchase Order:** The steps within this section illustrate how the *Global Edge* software processes accounts payable transactions and the generation of purchase orders which include:
  - o **Accounts Payable Management**
  - o **Purchase Order Generation**

- **6.3 – Inventory Management:** The steps within this section illustrate how the *Global Edge* software manages the inventory management process which include:
  - o **Inventory Maintenance**
  - o **Shipping / Receiving**
  - o **Picking & Stocking**

- **6.4 – General Ledger / Bank Account:** The steps within this section illustrate how the *Global Edge* software processes general ledger / bank account transactions which include:
  - o **G.L. Accounts / Transactions / Bank Account**
  - o **Fix Assets Management**
  - o **Month / Period / Year End Closing**

- **6.5 – Payroll Time & Attendance:** The steps within this section illustrate how the *Global Edge* software manages and processes payroll time and attendance which include:
  - o **Employee Payroll**
  - o **Payroll Set-Up**
  - o **Time & Expense Entry**

6.1 – Order Entry / Invoicing / Accounts Receivable

This step illustrates the order entry, invoicing, and accounts receivable process.

Workflow Steps

1. Select **"Financials"** on the *Global Edge* main menu:

2. Select **"Customer Management > Order Entry / Invoicing / A.R."** on the Customer Management menu:

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3. Select **"Find > Customer"** option and retrieve **CUSTOMER #: "1001"** which will display the following customer record and menu options:

ORDER ENTRY: Global Edge Windows Demo Server		

Customer-Maintenance

CUSTOMER

Add		

ID #: 1001   REF #: ABC-MFG   PHONE: 414-555-1100   EXT: 101

Find

ABC MANUFACTURING   FAX: 414-555-1105

Next

Robert Smith, V.P. of Engineering   LOC: 1   CORP. HEADQUARTERS / MANUFACTURING

Previous

5000 West Industrial Way   SALES REP: RDS   Robert D. Smith

Goto

TERRITORY: US1   USA - CENTRAL

Update

Milwaukee   WI   55555   SERVICE ZONE:

United States of America   CUSTOMER TYPE: MFR   MANUFACTURER

Orders

LEAD SOURCE: TRS   TRADE SHOW

opTions

ACTIVE?: Yes   COMMISSION?: No

Invoices

BILLING ADDRESS   TAXABLE?: Yes   TAX RATE: 0.0   0.0

Receivables

ABC MANUFACTURING   RESALE #: RESALE NUM 01   FINANCE?: No

Delete

RESALE EXPIRATION: DOC:

More

5000 West Industrial Way   PAYMENT TERMS: N30   NET 30 DAYS

Contracts

PRICE METHOD: Cost-Plus   FACTOR: 1.5

Work Queue

Milwaukee   WI   55555   PRICE LIST:

United States of America   BALANCE METHOD: Open-Item

STATUS: Credit-OK

QUIT

LAST SALE: 04/01/2022   YTD SALES: $4125.00   CREDIT LIMIT: $10000.00

NO. SALES: 1   TOTAL SALES: $4125.00   BEGIN MONTH: $0.00

DATE ADDED: 04/01/2022   DATE MODIFIED: 04/01/2022   BALANCE: $0.00

(# 1 of 1)

CUST

Find Existing Customer   OVR

4. Select **"Orders > Update"** option to retrieve **ORDER #: "1003"** on the following screen form:

ORDER ENTRY: Global Edge Windows Demo Server		

Sales-Order-List

Select Order to Update, then Press [OK]:   OK

Cancel

CUST #: 1001   REF #: ABC-MFG   ABC MANUFACTURING   Robert Smith, V.P. of Engineering

ORDER #	DATE	CUSTOMER PO	NOTES	PROJ #	JOB #	TOTAL	STATUS	FILLED
1003	11/10/23	ABC-1003	Sales Order for Demonstration Parts (ERP D		1006	$0.00		No
1002	11/10/23	ABC-1002	Sales Order for Light Fixture (ERP Downloa		1005	$0.00		No
1001	11/10/23	ABC-1001	Sales Order for Cabinet Body (ERP Downloa		1004	$0.00		No

OID1

OVR

5. This will display the following screen form and menu options:

6. Select **"Items"** option to display the following screen form and menu options:

7. Select **"Update"** option to retrieve first item for the attached Sales Order and make any necessary changes to Sales Order Item, the select **"OK"** to option to continue:

8. Select **"QUIT > QUIT"** option to return to **"Order-Header"** screen:

9. Select *"Release"* option to release Sales Order, then select *"QUIT"* twice to return to *"Customer-Maintenance"* screen. Select *"Invoices"* option to display following screen form and menu options:

10. Select *"Load"* option to select Sales Order to load into Invoice:

11. When prompted to *"Load Order Into Invoice?"* answer *"Yes"* to load Sales Order into Invoice, which will display following screen form:

12. After selecting *"Invoice Configuration"*, the following screen form and menu options are displayed:

13. Select **"Items > Fill > Order"** option which will display the following screen form and menu options:

14. Select **"Update"** option and select Invoice Item to display the following screen form and menu options:

15. Select **"OK"** option when done editing Invoice Item, then select **"QUIT"** twice to return to **"Invoice-List"** screen form and menu options:
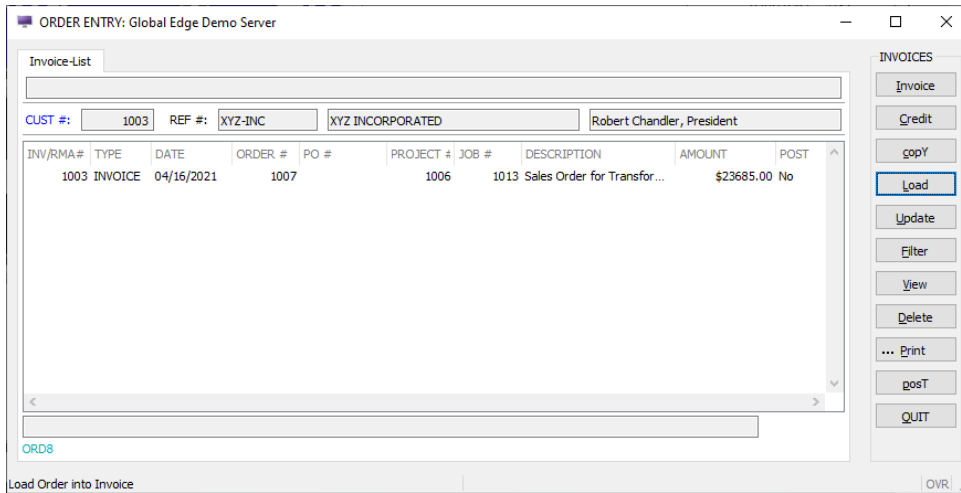
16. Select **"Post"** option and answer **"Yes"** to **"Are All Invoices & Credit Memos Correct?"** and **"Yes"** to **"Post Through to General Ledger"** which will display the following screen once the posting process is complete:

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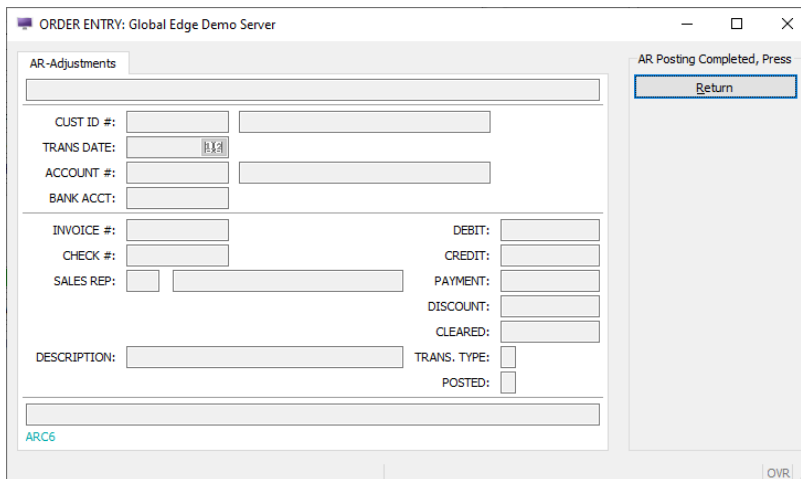
17. Select **"Return"** option followed by **"QUIT"** to return to **"Customer-Maintenance"** screen:

18. Select **"Invoices > Print"** option and select Invoice to print / generate PDF Invoice for.

Sample Invoice

PAGE: 001

LOGIC DESIGN
corporation

Invoice

2000 Industrial Blvd.
Milwaukee, WI 53201
Phone: 414-555-1300   www.ldcglobal.com

WEBSITE: www.ldcglobal.com
E-MAIL: ar@ldcglobal.com
PHONE: 414-555-1000 FAX: 414-555-1050

SERVICE & EXPENSE DATE RANGE	
FROM	TO

	DATE	INVOICE #
	09/09/2019	1004
	CUSTOMER #:	1003
	FOB:	Shipping Point

SUBMITTED TO:	SHIP TO:
XYZ INCORPORATED Robert Chandler, President 4000 North Gateway Blvd. Johnson City, MO 77777 USA	XYZ INCORPORATED Robert Chandler, President 4000 North Gateway Blvd. Johnson City, MO 77777 USA

ORDER #	ORDER DATE	SHIP DATE	SHIP VIA	P.O. NUMBER	PAYMENT TERMS	SALES PERSON
1007	09/01/2019	09/09/2019			NET 30 DAYS	SMITH INCORPORATED

QTY ORDERED	QTY SHIPPED	QTY B/O	UOM	PART NUMBER / DESCRIPTION	TAX	UNIT PRICE	EXTENDED
8.00	8.00	0.00	ea	DEMO-TRANSFORMER Three Phase Transformer	No	2,724.00	21,792.00
8.00	8.00	0.00	ea	DEMO-TRANSFORMER-PAD Three Phase Transformer Mounting Pad	No	236.63	1,893.00

SUB-TOTAL:	23,685.00
FREIGHT:	0.00
SALES TAX (0.00)%:	0.00
TOTAL DUE:	23,685.00

CURRENT CHARGES	30 DAYS	60 DAYS	90 DAYS	BALANCE DUE
23,685.00				23,685.00

Thank You For Your Business

19. Select **"QUIT"** to return to **"Customer-Maintenance"** screen:

20. Select **"Receivables > Transactions"** option to access **"Customer-Transition"** screen:

6.2 – Accounts Payable / Purchase Order

This step illustrates the accounts payable and purchase order generation process.

Workflow Steps

1. Select *"Financials"* on the *Global Edge* main menu:

2. Select *"Accounts Payable / Purchase Order"* option on the Integrated Financials menu:
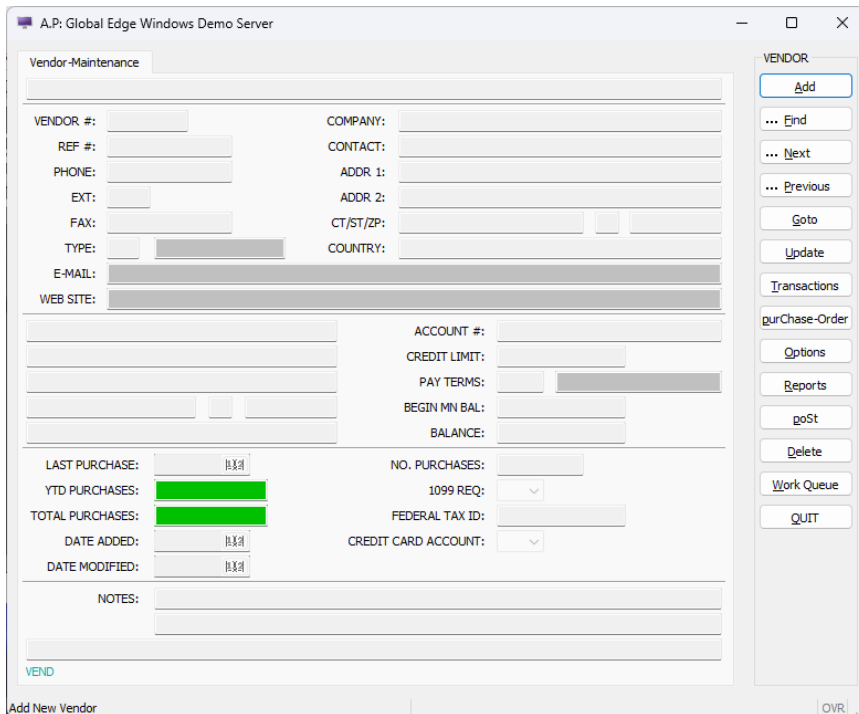
3. Select **"Find > Vendor"** option and retrieve **VENDOR #: "1001"** which will display the following vendor record and menu options:

A.P: Global Edge Windows Demo Server	— ☐ ✕

Vendor-Maintenance

		VENDOR
VENDOR #: 1001	COMPANY: UPS CUSTOMER CENTER	Add
REF #: UPS	CONTACT:	... Find
PHONE: 800-742-5877	ADDR 1: 12400 W. Bluemound Road	... Next
EXT:	ADDR 2:	... Previous
FAX:	CT/ST/ZP: Elm Grove WI 53122	Goto
TYPE: FRT FREIGHT VENDOR	COUNTRY:	Update
E-MAIL:		Transactions
WEB SITE:		purChase-Order

UPS CUSTOMER CENTER	ACCOUNT #:	Options
12400 W. Bluemound Rd.	CREDIT LIMIT: $5000.00	Reports
	PAY TERMS: N30 NET 30 DAYS	poSt
Elm Grove WI 53122	BEGIN MN BAL: $0.00	Delete
	BALANCE: $0.00	Work Queue

LAST PURCHASE:	NO. PURCHASES: 0	QUIT
YTD PURCHASES: $0.00	1099 REQ: No	
TOTAL PURCHASES: $0.00	FEDERAL TAX ID:	
DATE ADDED:	CREDIT CARD ACCOUNT: No	
DATE MODIFIED:		

NOTES:	

(# 1 of 1)
VEND

Find Vendor — OVR

4. Select **"Transactions"** option to display the following screen form and menu options:

A.P: Global Edge Windows Demo Server	— ☐ ✕

Vendor-Transaction-List

VENDOR #: 1001   REF #: UPS   UPS CUSTOMER CENTER

DATE	INVOICE NUMBER	TRANS	DESCRIPTION	DEBIT	CREDIT	POST
09/26/2019	ABC-453322	INVCE	Purchase of Steel Metal Stock		$29261.09	Yes
02/15/2019		ADJST	Canceled Payment		$750.00	No
09/27/2018		PAYMT	Payment Voided	$400.00		No
07/15/2018		PAYMT	Wire Transfer Canceled	$750.00		No
06/18/2018	ABC-987621	INVCE	Consulting fee		$750.00	No
05/16/2016		PAYMT	PAYMENT TO VENDOR	$24237.90		Clrd
04/13/2016	2384999999	INVCE	steel stock		$24237.90	Clrd
08/03/2014		PAYMT	PAYMENT TO VENDOR	$5191.94		Clrd
07/14/2014	23-8412342	INVCE	steel stock		$5191.94	Clrd
07/15/2013		PAYMT	PAYMENT TO VENDOR	$6762.29		Clrd
06/12/2013	23-8123213	INVCE	steel stock		$6762.29	Clrd
10/13/2012		PAYMT	PAYMENT TO VENDOR	$5191.94		Clrd
10/10/2012	22-30523	INVCE	steel stock		$5191.94	Clrd
06/30/2012		PAYMT	PAYMENT TO VENDOR	$6164.84		Clrd
06/12/2012	22-27888	INVCE	steel stock		$6164.84	Clrd

TRANSACTIONS
- Invoice
- Copy
- cRedits
- Payments
- Update
- Apply
- adJustments
- Examine
- Void
- poST
- uNpost
- GL-Reconcile
- Delete
- QUIT

POSTED BALANCE: $0.00
INCLUDING UNPOSTED: $350.00

APV1

Add Invoices — OVR

5. Select *"Invoice"* option to display the following screen form to enter incoming vendor invoice header information:

6. Select *"OK"* followed by *"Add"* option on the ITEMS menu to display the following screen form:

7. Select *"OK"* when done which will display the *"AP-Invoice-Edit"* screen:

8. Select *"QUIT"* twice to complete vendor invoice entry and return to TRANSACTIONS menu:

9. Select *"Post"* option to post all or selected accounts payable transactions to general ledger.

10. Select *"QUIT > Purchase-Order > Update"* option and select **"P.O. #: 1009"** on the following screen form:

11. Select *"OK"* option to display the following screen form and menu options:

12. Select **"Items > Update"** option and select **"LINE #: 1"** on the following screen form:

13. Select **"OK"** option to display the following screen form and menu options:

14. Select **"QUIT"** option twice to return to **"Purchase-Order-Header"** screen and select **"Print"** option to generate purchase order report.

Sample Purchase Order

PURCHASE ORDER

LOGIC DESIGN
corporation

2000 Industrial Blvd.
Milwaukee, WI 53201
Phone: 414-555-1300   www.ldcglobal.com

WEBSITE: www.ldcglobal.com
E-MAIL: sales@ldcglobal.com
PHONE: 414-456-1000 FAX: 414-456-1010

PAGE: 001

PURCHASE ORDER #: [1009]
P.O. DATE: [09/01/2019]
VENDOR #: [1001][VEND-1001   ]

Ship all UPS via UPS Collect Account
FREIGHT VENDOR: UPS CUSTOMER CENTER ACCT#: 444-99999999999999

Send immediate acknowledgement of receipt

SUBMITTED TO:

ABC METAL SUPPLY COMPANY
1000 North Ridegway Lane
Suite 205
West Allis, WI 55555-4444
United States of America
sales@ABCMetal.com

SHIP TO:

LDC MANUFACTURING INC.
2000 Industrial Blvd.

Milwaukee, WI 53201

VENDOR ACCOUNT #	FOB LOCATION	SHIP VIA	EXPECTED	PAY TERMS	REQUESTED BY
444-5677399	Shipping Point	BEST WAY	09/08/2019	NET 30 DAYS	Larry D. Colbourn

PART #	DESCRIPTION	QTY	UOM	TAX	UNIT	EXTENDED
CRS48----96----0.02400SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	75.00	ea	NO	17.27	1295.40
CRS48----96----0.03000SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	200.00	ea	NO	21.59	4318.00
CRS48----96----0.03600SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	50.00	ea	NO	25.91	1295.41
CRS48----96----0.04200SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	75.00	ea	NO	30.23	2266.96
CRS48----96----0.07500SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	150.00	ea	NO	53.98	8096.27
CRS48----96----0.10500SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	85.00	ea	NO	75.57	6423.04
CRS48----96----0.12000SHT GL ACCT#: 114001	STOCK METAL SHEET CRS COLD ROLLED STEEL	115.00	ea	NO	86.36	9931.42

INSTRUCTIONS:

SIGNATURE REQ'D: UNAUTHORIZED PURCHASE ORDER, WE WILL NOT HONOR   **DATE:** _____

NET CHARGE:	33626.50
SALES TAX (0.00) %:	0.00
FREIGHT:	0.00
PURCHASE ORDER TOTAL:	$33626.50

6.3 – Inventory Management

This step illustrates the inventory management capabilities.

Workflow Steps

1. Select *"Inventory"* option on the *Global Edge* main menu:

2. Select *"Inventory Maintenance > Inventory Management"* option on Inventory Management menu:
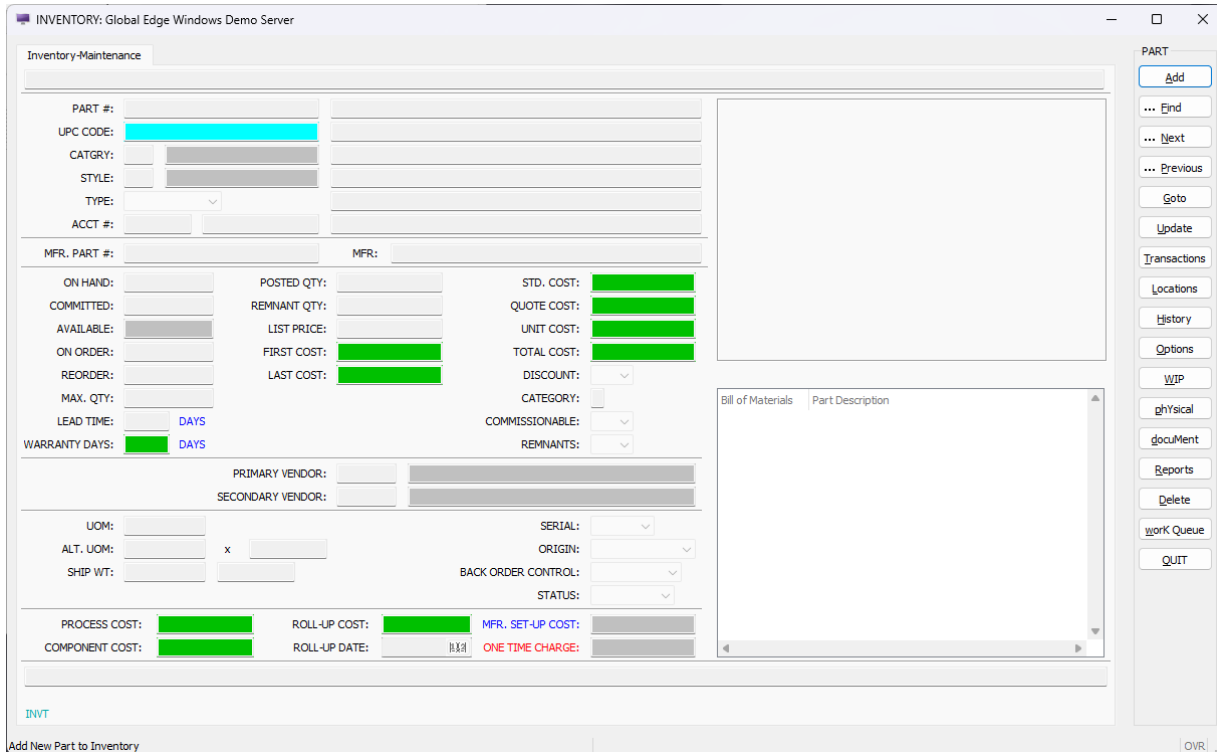
3. Select **"Find > Part"** option and retrieve **PART #: "SHEET-METAL-PANEL"** which will display the following PART menu options:

4. Select **"Transactions > Displayed"** option to display the following screen form and menu options:

5. Select *"QUIT"* followed by *"History"* option to display the following screen form and menu options:
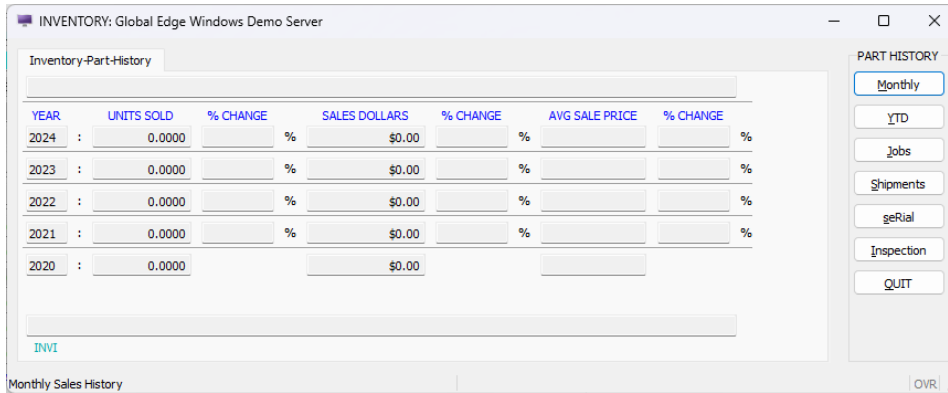
6. Select *"QUIT"* followed by *"Reports"* option to display the following report menu options:
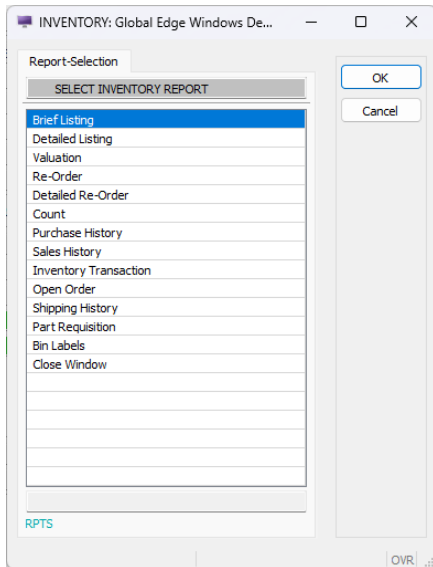
7. Select **"QUIT > Find > Part"** option and retrieve **PART #: "AL-*"** which will display the following PART menu options:

8. Select **"Locations"** option to display the following screen form and menu options:

9. Select *"Update"* option followed by *"OK"* to display the following screen form and menu options:

10. Select *"Bins > Update"* option followed by *"OK"* option to display following screen form:

Sample Data (Inventory Bin Table)

TRANS #	LOC	DEPT	WC	ASSET #	BIN #	DESCRIPTION	AISLE	BIN	CAPACITY	UOM	MAX. WT.	UOM
3	1	8	3	1207	SMSB-01	SHEET METAL STORAGE BIN 01		1	100.0000	each	4000.0000	lbs
4	1	8	3	1207	SMSB-02	SHEET METAL STORAGE BIN 02		2	100.0000	each	4000.0000	lbs
5	1	8	3	1207	SMSB-03	SHEET METAL STORAGE BIN 03		3	100.0000	each	4000.0000	lbs
6	1	8	3	1207	SMSB-04	SHEET METAL STORAGE BIN 04		4	100.0000	each	4000.0000	lbs
7	1	8	3	1207	SMSB-05	SHEET METAL STORAGE BIN 05		5	100.0000	each	4000.0000	lbs
8	1	8	3	1207	SMSB-06	SHEET METAL STORAGE BIN 06		6	100.0000	each	4000.0000	lbs
9	1	8	3	1207	SMSB-07	SHEET METAL STORAGE BIN 07		7	100.0000	each	4000.0000	lbs
10	1	8	3	1207	SMSB-08	SHEET METAL STORAGE BIN 08		8	100.0000	each	4000.0000	lbs
11	1	8	3	1207	SMSB-09	SHEET METAL STORAGE BIN 09		9	100.0000	each	4000.0000	lbs
12	1	8	3	1207	SMSB-10	SHEET METAL STORAGE BIN 10		10	100.0000	each	4000.0000	lbs
13	1	8	3	1207	SMSB-11	SHEET METAL STORAGE BIN 11		11	100.0000	each	4000.0000	lbs
14	1	8	3	1207	SMSB-12	SHEET METAL STORAGE BIN 12		12	100.0000	each	4000.0000	lbs
15	1	8	3	1207	SMSB-13	SHEET METAL STORAGE BIN 13		13	100.0000	each	4000.0000	lbs
16	1	8	3	1207	SMSB-14	SHEET METAL STORAGE BIN 14		14	100.0000	each	4000.0000	lbs

Sample Data (Inventory Locations Detail Table)

TRANS #	DEPT	WC	BIN TRAN	DESCRIPTION	QTY. ON HAND	REMANT QTY.	CAPACITY	UOM
14			3	SHEET METAL STORAGE BIN 01	0.0000	0.0000		
15			4	SHEET METAL STORAGE BIN 02	0.0000	0.0000		
16			5	SHEET METAL STORAGE BIN 03	0.0000	0.0000		
17			6	SHEET METAL STORAGE BIN 04	0.0000	0.0000		
18			7	SHEET METAL STORAGE BIN 05	0.0000	0.0000		
19			8	SHEET METAL STORAGE BIN 06	0.0000	0.0000		
20			9	SHEET METAL STORAGE BIN 07	0.0000	0.0000		
21			10	SHEET METAL STORAGE BIN 08	0.0000	0.0000		
22			11	SHEET METAL STORAGE BIN 09	0.0000	0.0000		
23			12	SHEET METAL STORAGE BIN 10	0.0000	0.0000		
24			13	SHEET METAL STORAGE BIN 11	0.0000	0.0000		
25			14	SHEET METAL STORAGE BIN 12	0.0000	0.0000		
26			15	SHEET METAL STORAGE BIN 13	0.0000	0.0000		

Sample Data (Inventory Locations Table)

TRANS #	PART #	LOC #	QTY. ON HAND	POSTED QTY.	REMNANT QTY.	REORDER LEVEL	MAX. QTY.
14	AL-48----120---0.05008SHT	1	35.0000	35.0000	0.0000	200.0000	400.0000
15	AL-48----96----0.03207SHT	1	200.0000	200.0000	0.0000	100.0000	200.0000
16	AL-60----120---0.10007SHT	1	0.0000	0.0000	0.0000	25.0000	50.0000
17	CRS48----96----0.02400SHT	1	0.0000	0.0000	0.0000	250.0000	500.0000
18	CRS48----96----0.03000SHT	1	0.0000	0.0000	0.0000	225.0000	450.0000
19	CRS48----96----0.03600SHT	1	0.0000	0.0000	0.0000	200.0000	400.0000
20	CRS48----96----0.04200SHT	1	0.0000	0.0000	0.0000	175.0000	350.0000
21	CRS48----96----0.07500SHT	1	0.0000	0.0000	0.0000	150.0000	300.0000
22	CRS48----96----0.10500SHT	1	0.0000	0.0000	0.0000	125.0000	250.0000
23	CRS48----96----0.12000SHT	1	0.0000	0.0000	0.0000	100.0000	200.0000
24	CRS48----96----0.15000SHT	1	0.0000	0.0000	0.0000	75.0000	150.0000
25	CRS48----96----0.37500SHT	1	0.0000	0.0000	0.0000	50.0000	100.0000
26	CRS50----120---0.10500SHT	1	0.0000	0.0000	0.0000	100.0000	200.0000

11. Return to the *Global Edge* main menu and select *"Inventory"* option:

12. Select *"Shipping / Receiving"* option on Inventory Management menu:

13. Select **"Find"** option and retrieve **CUSTOMER #: "1001"** to display the following customer record and menu options:

14. Select **"Shipments"** option to display the following screen form and menu options:

15. Select **"Add > Order"** option to display the following screen form and menu options:

16. Select **"OK > Yes > Order"** option to load sales order into shipment which will display the following screen form and menu options:

17. Select *"Items > Fill"* option to fill order quantities which will display updated shipment screen totals:

18. Select *"QUIT > Post > Yes"* option to post / release shipment:

19. Return to SHIPPING-RECEIVING menu which will display the following screen form and menu options:

20. Select **"PO"** option to display the following screen form and menu options:

21. Select **"OK"** to display the following screen form and menu options:

22. Select **"Purchase Order"** to receive and select **"OK"** to display the following screen form and menu options:

23. Select **"Purchase"** option to display the following screen form and menu options:

24. Select **"Items"** option to display the following screen form and menu options:

25. When done entering **"QTY. RECEIVED"** for each purchase order line item, then select **"OK > Post"** to display the following screen form and menu options:

26. Return to main **Global Edge** menu and select **"Inventory > Picking / Stocking"** option to display the following screen and menu options:

27. Select **"Pick > Job"** option to display following screen form:

28. Enter Location, Department and Work Center followed by *"Select"* option and select **JOB #: *"10##"*** on the following screen form:

29. Select *"Traveler > Assign"* option on the following screen form:

30. Select *"Traveler > Assign"* to display the following screen form:

JOB PICKING					— ☐ ✕

Traveler-List

Select Traveler for Inventory Pick, then Press [OK]:

TRVLR #	TYPE	LABEL	DESCRIPTION	CURRENT LOCATION	STATUS
1	Cart	CART-0001	Inventory Cart #1	Unknown	Available
2	Cart	CART-0002	Inventory Picking and Stock	Unknown	Available
3	Fork Lift	FORK LIFT-0	Fork Lift #1	Unknown	Available
4	Fork Lift	FORK LIFT-0	Fork Lift #2	Unknown	Available

OK

Cancel

TRVL

OVR

31. Select *"Fill"* option and enter quantity picked followed by *"OK"* on below screen form:

JOB PICKING	— ☐ ✕

Job-Picking

BIN PICKING

Traveler

Bin-Select

Scan-Bin

Fill

Manual

QUIT

SCAN BIN: QTY PICKED?:

PART #:

QTY TO PICK: UOM:

TRAVELER #: 1   TYPE: Cart   LABEL: CART-0001

ASSET #: 1181   Inventory Cart #1

CURRENT LOCATION

LOCATION #:

DEPT #:

WC #:

ASSET #:   STATUS: In-Transit

BIN #	PART #	REQ #	REQ QTY	FILLED	BALANCE	PICKED	UOM
SMSB-02	AL-48----96----0.03207S	1	93.0000		93.0000	93.0000	each

(1) Requisition(s)

INP2

Fill All Requisitions   OVR
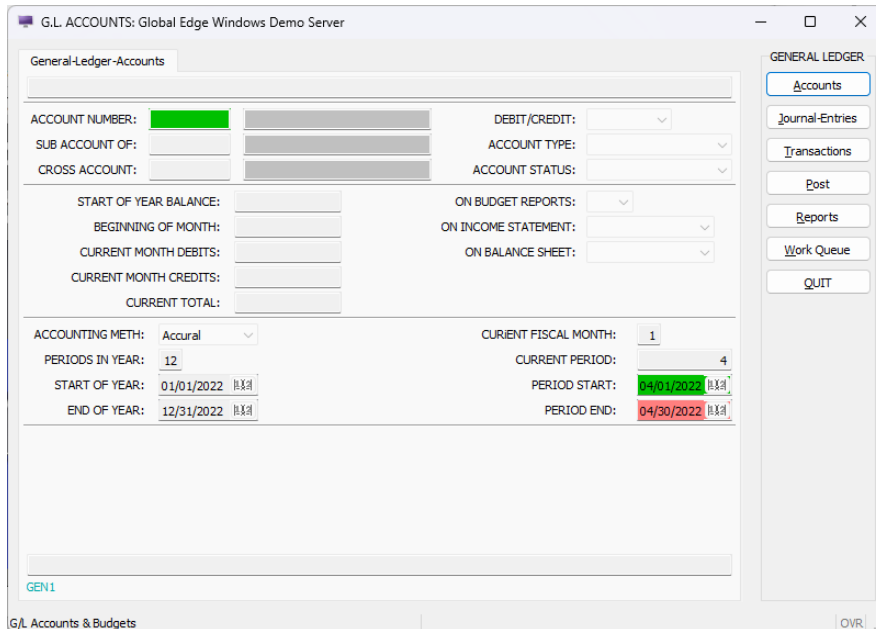
6.4 – General Ledger / Bank Account

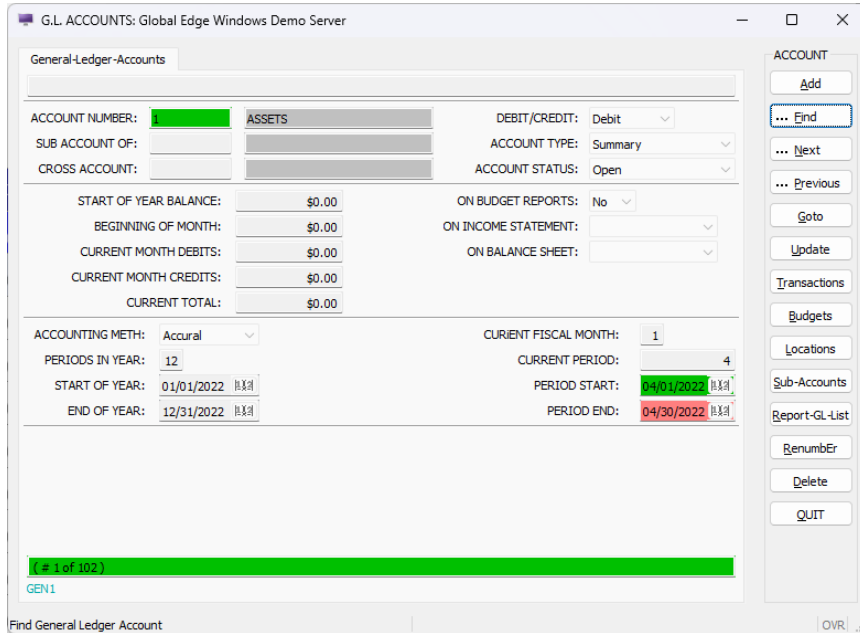This step illustrates the general ledger / bank account management process.

Workflow Steps

1. Select *"Financials"* on the *Global Edge* main menu:

2. Select *"General Ledger > G.L. Accounts / Transactions"* option on the **General Ledger** menu:

3. Select **"Accounts > Find"** option on the **ACCOUNT** menu:

Sample General Ledger Chart of Accounts

ACCT #	SUB #	ACCOUNT NAME	CR/DB	BG YR BAL	BG MO BAL	DEBIT	CREDIT	TYPE
1		ASSETS	Debit	0.00	0.00	0.00	0.00	S
11	1	CURRENT ASSETS	Debit	0.00	0.00	0.00	0.00	S
111	11	CASH IN BANKS	Debit	0.00	0.00	0.00	0.00	S
1111	111	- Checking Account	Debit	0.00	0.00	0.00	0.00	T
1112	111	- Payroll Account	Debit	0.00	0.00	0.00	0.00	T
112	11	- Petty Cash	Debit	0.00	0.00	0.00	0.00	T
113	11	- Accounts Receivable	Debit	0.00	0.00	0.00	0.00	T
114	11	INVENTORY	Debit	0.00	0.00	0.00	0.00	S
114001	114	- SHEET METAL	Debit	0.00	0.00	0.00	0.00	T
114002	114	- ASSEMBLY	Debit	0.00	0.00	0.00	0.00	T
114100	114	- STOCK	Debit	0.00	0.00	0.00	0.00	T
114200	114	- HARDWARE	Debit	0.00	0.00	0.00	0.00	T
114300	114	- OTHER	Debit	0.00	0.00	0.00	0.00	T
114900	114	- WIP	Debit	0.00	0.00	0.00	0.00	T
115	11	- Securities	Debit	0.00	0.00	0.00	0.00	T
116	1	- Office Supplies	Debit	0.00	0.00	0.00	0.00	T
12	1	FIXED ASSETS	Debit	0.00	0.00	0.00	0.00	S

Sample General Ledger Chart of Accounts (Continued …)

ACCT #	SUB #	ACCOUNT NAME	CR/DB	BG YR BAL	BG MO BAL	DEBIT	CREDIT	TYPE
2		LIABILITIES	Credit	0.00	0.00	0.00	0.00	S
21	2	SHORT TERM LIABILITIES	Credit	0.00	0.00	0.00	0.00	S
211	21	- Accounts Payable	Credit	0.00	0.00	0.00	0.00	T
213	21	TAXES PAYABLE	Credit	0.00	0.00	0.00	0.00	S
2131	213	- SALES & Use Tax	Credit	0.00	0.00	0.00	0.00	T
2132	213	CORPORATE INCOME TAX	Credit	0.00	0.00	0.00	0.00	S
213201	2132	- Federal Income Tax	Credit	0.00	0.00	0.00	0.00	T
213202	2132	- WI Income Tax Payable	Credit	0.00	0.00	0.00	0.00	T
213203	2132	- IL Income Tax Payable	Credit	0.00	0.00	0.00	0.00	T
213204	2132	- MO Income Tax Payable	Credit	0.00	0.00	0.00	0.00	T
2133	213	- FUTA Payable	Credit	0.00	0.00	0.00	0.00	T
2134	213	- FICA Payable	Credit	0.00	0.00	0.00	0.00	T
2135	213	- State Franch. Payable	Credit	0.00	0.00	0.00	0.00	T
2136	213	- Withheld Fed Payroll	Credit	0.00	0.00	0.00	0.00	T
2137	213	- Withheld State Payroll	Credit	0.00	0.00	0.00	0.00	T
2138	213	- Property Tax Payable	Credit	0.00	0.00	0.00	0.00	T
2139	213	- State UC Tax Payable	Credit	0.00	0.00	0.00	0.00	T
217	21	Employee Benefits	Credit	0.00	0.00	0.00	0.00	T
22	2	LONG TERM LIABILITIES	Credit	0.00	0.00	0.00	0.00	S
221	22	BANK NOTES	Credit	0.00	0.00	0.00	0.00	S
3		STOCKHOLDER'S EQUITY	Credit	0.00	0.00	0.00	0.00	S
31	3	CAPITAL STOCK	Credit	0.00	0.00	0.00	0.00	S
3101	31	- Startup Capital	Credit	0.00	0.00	0.00	0.00	T
32	2	RETAINED EARNINGS	Credit	0.00	0.00	0.00	0.00	S
3201	32	- Operating Profit	Credit	0.00	0.00	0.00	0.00	T
3202	32	- Captial Gains	Credit	0.00	0.00	0.00	0.00	T
3203	32	- Income Taxes	Credit	0.00	0.00	0.00	0.00	T
3204	32	- Dividend Payments	Credit	0.00	0.00	0.00	0.00	T
4		REVENUE	Credit	0.00	0.00	0.00	0.00	S
41	4	SALES OF INVENTORY	Credit	0.00	0.00	0.00	0.00	S
41001	41	- SALES: SHEET METAL	Credit	0.00	0.00	0.00	0.00	T
41002	41	- SALES: ASSEMBLY	Credit	0.00	0.00	0.00	0.00	T
411100	41	- SALES: STOCK	Credit	0.00	0.00	0.00	0.00	T
411200	41	- SALES: HARDWARE	Credit	0.00	0.00	0.00	0.00	T
411300	41	- SALES: OTHER	Credit	0.00	0.00	0.00	0.00	T
42	4	- Service Revenue	Credit	0.00	0.00	0.00	0.00	T
43	4	MISCELLANEOUS REVENUE	Credit	0.00	0.00	0.00	0.00	S
43001	43	- Recovered Bad Debts	Credit	0.00	0.00	0.00	0.00	T
43002	43	- Billable Expenses	Credit	0.00	0.00	0.00	0.00	T
43999	43	- Miscellaneous	Credit	0.00	0.00	0.00	0.00	T
45	4	- Freight Revenue	Credit	0.00	0.00	0.00	0.00	T
44	4	- Interest Revenue	Credit	0.00	0.00	0.00	0.00	T
46	4	Sales Tax Revenue	Credit	0.00	0.00	0.00	0.00	T
48	4	- Discounts Allowed	Debit	0.00	0.00	0.00	0.00	T
49	3	- Returns	Debit	0.00	0.00	0.00	0.00	T

Sample General Ledger Chart of Accounts (Continued …)

ACCT #	SUB #	ACCOUNT NAME	CR/DB	BG YR BAL	BG MO BAL	DEBIT	CREDIT	TYPE
5		EXPENSES	Debit	0.00	0.00	0.00	0.00	S
51	5	COST OF GOODS SOLD	Debit	0.00	0.00	0.00	0.00	S
51001	51	- COGS: SHEET METAL	Debit	0.00	0.00	0.00	0.00	T
51002	51	- COGS: ASSEMBLY	Debit	0.00	0.00	0.00	0.00	T
51100	51	- COGS: STOCK	Debit	0.00	0.00	0.00	0.00	T
51200	51	- COGS: HARDWARE	Debit	0.00	0.00	0.00	0.00	T
51300	51	- COGS: OTHER	Debit	0.00	0.00	0.00	0.00	T
52	5	GENERAL & SDMN. EXPENSES	Debit	0.00	0.00	0.00	0.00	S
5201	52	Payroll & Benefits	Debit	0.00	0.00	0.00	0.00	S
52011	5201	PAYROLL	Debit	0.00	0.00	0.00	0.00	S
520111	52011	- Salaried Employees	Debit	0.00	0.00	0.00	0.00	T
520112	52011	- Hourly Employees	Debit	0.00	0.00	0.00	0.00	T
520113	52011	- Company Officers	Debit	0.00	0.00	0.00	0.00	T
52012	5201	- Benefits	Debit	0.00	0.00	0.00	0.00	T
5203	52	OPERATING EXPENSES	Debit	0.00	0.00	0.00	0.00	S
520301	5203	- Building Rent	Debit	0.00	0.00	0.00	0.00	T
520302	5203	- Phone / Internet	Debit	0.00	0.00	0.00	0.00	T
520303	5203	- Utilities	Debit	0.00	0.00	0.00	0.00	T
520311	5203	- IT Consulting Fees	Debit	0.00	0.00	0.00	0.00	T
520312	5203	- Accounting Services	Debit	0.00	0.00	0.00	0.00	T
520313	5203	- Legal Services	Debit	0.00	0.00	0.00	0.00	T
520314	5203	- Mfr Consulting Service	Debit	0.00	0.00	0.00	0.00	T
520315	5203	- Casualty Insurance	Debit	0.00	0.00	0.00	0.00	T
520316	5203	- Office Supplies	Debit	0.00	0.00	0.00	0.00	T
5210	52	Taxes	Debit	0.00	0.00	0.00	0.00	S
52101	5210	- Property Tax	Debit	0.00	0.00	0.00	0.00	T
52102	5210	- Sales and Use Tax	Debit	0.00	0.00	0.00	0.00	T
52104	5210	- Wisc Franchise Tax	Debit	0.00	0.00	0.00	0.00	T
52105	5210	- Employer SS Contrib.	Debit	0.00	0.00	0.00	0.00	T
52106	5210	- State UC Tax	Debit	0.00	0.00	0.00	0.00	T
52107	5210	- FUTA - Fes UC Tax	Debit	0.00	0.00	0.00	0.00	T
52900	52	- Bad Debts	Debit	0.00	0.00	0.00	0.00	T
52999	52	- Miscellaneous	Debit	0.00	0.00	0.00	0.00	T
53	5	SELLING EXPENSE	Debit	0.00	0.00	0.00	0.00	S
54	5	FINANCIAL EXPENSES	Debit	0.00	0.00	0.00	0.00	S
54001	54	- Interest	Debit	0.00	0.00	0.00	0.00	T
55	5	JOB OFFSET ACCOUNTS	Debit	0.00	0.00	0.00	0.00	S
55001	55	- Job Offset Expenses	Debit	0.00	0.00	0.00	0.00	T
55002	55	- Job Rework Expenses	Debit	0.00	0.00	0.00	0.00	T
55003	55	- Job Scrap Expenses	Debit	0.00	0.00	0.00	0.00	T

4. Return to **MAIN** menu and select *"Financials"* option followed by *"General Ledger > Bank Account"* option to display the following screen form:
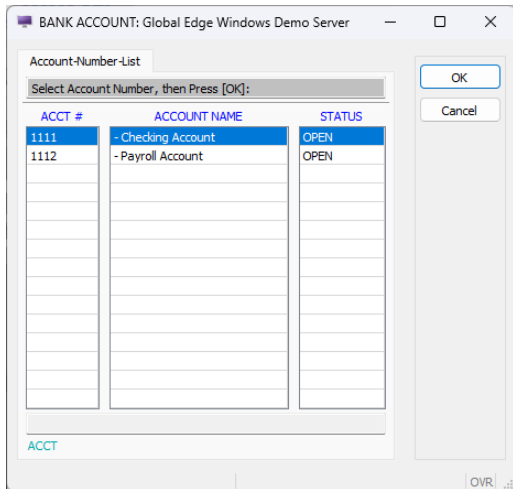
5. Select bank account to access followed by *"OK"* to display the following screen form and menu options:
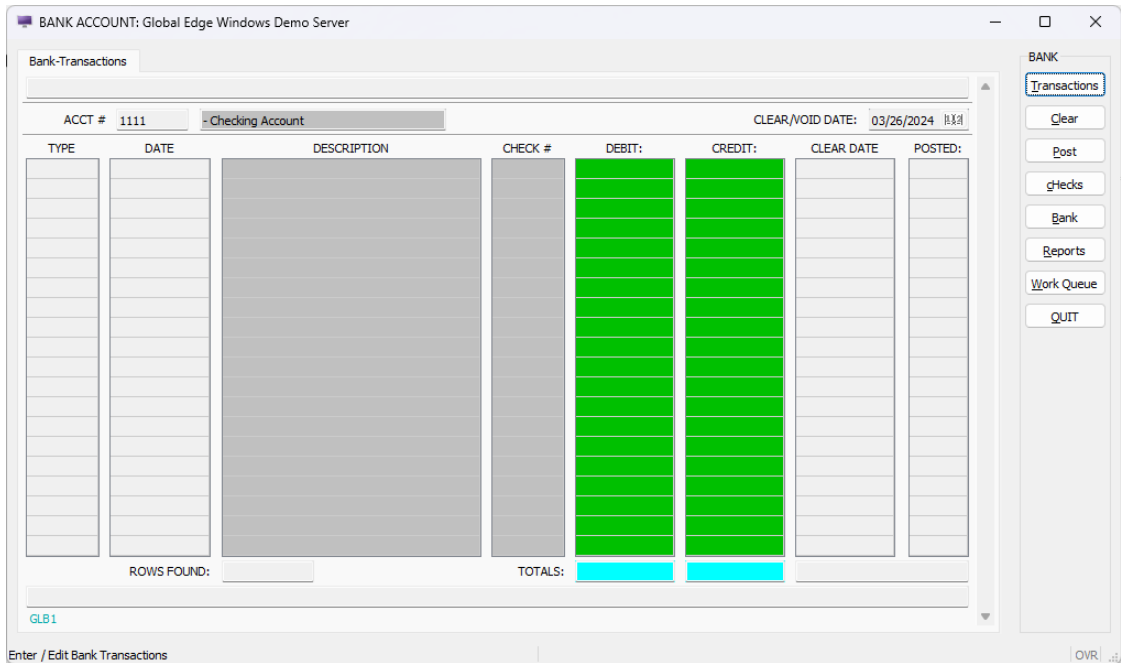
6. Return to **MAIN** menu and select *"Financials"* option followed by *"General Ledger > Fixed Assets"* option to display the following screen form and menu options:

7. Select *"Find"* option and retrieve **"FIXED ASSET #: 1001"** to display the following fixed asset record:

8. Select *"Transactions"* option to display the following screen form and menu options:

9. Select *"Book"* option to display the following screen form and menu options:

10. Select *"Add"* option to enter fixed asset transaction:

6.5 – Payroll Time & Attendance

This step illustrates the general ledger / bank account management process.

Workflow Steps

1. Select *"Financials"* on the *Global Edge* main menu:

2. Select *"Payroll Time & Attendance > Employee Payroll"* option on the **Integrated Financials** menu:
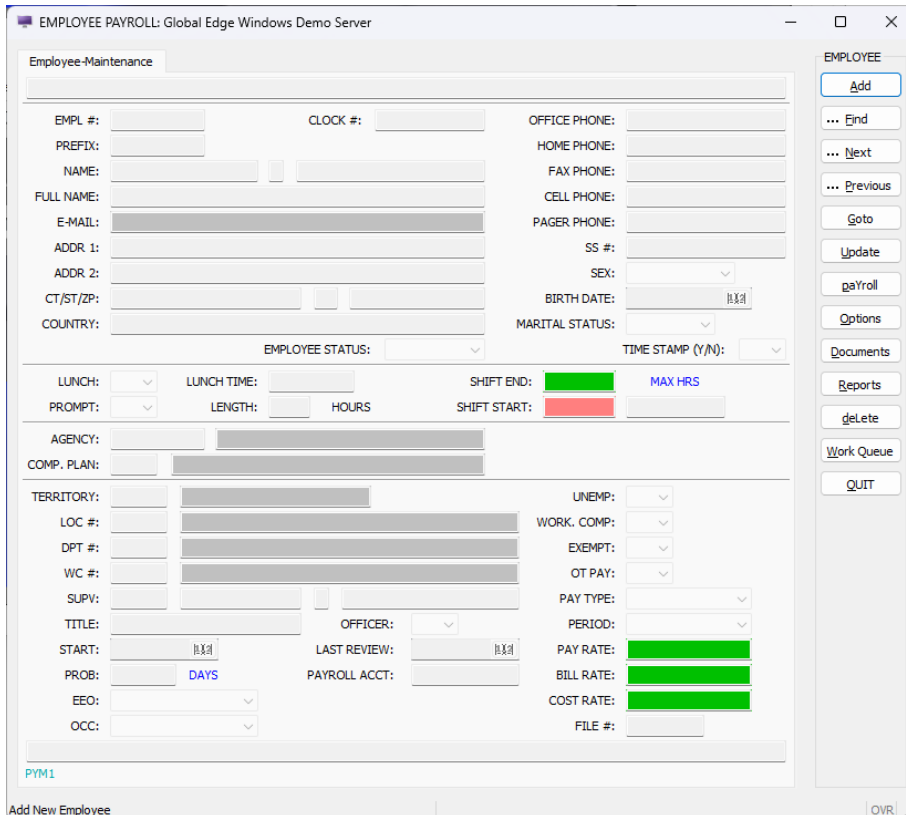
3. Select *"Find > Employee"* option to display the following employee record:

4. Select *"Payroll > Hours"* option to display the following screen form and menu options:

5. Return to *Global Edge* main menu and select **"Time"** option:

6. Select **"Find"** option and retrieve **EMPLOYEE #: "1001"** which will display the following menu options:
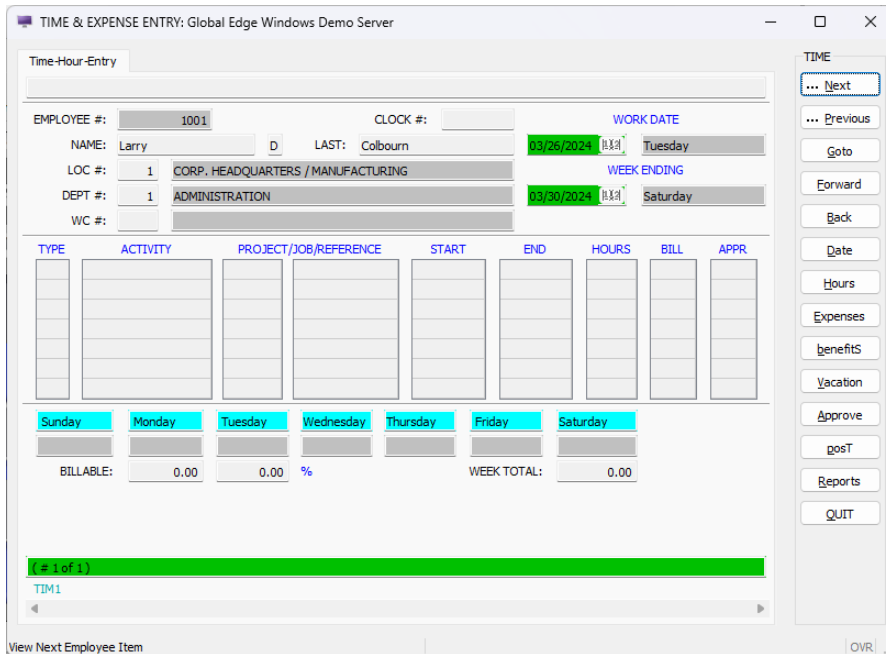
7. Select *"Hours > Add"* option to display the following screen form to add time worked:

8. Select *"OK"* when done which will return to the following screen:

9. Select *"QUIT"*, then select *"Expenses"* to display the following screen form and menu options:

10. Select *"Add > Project"* option to display the following screen to enter expense item:

11. Select *"OK"* to return to the *"Expense-Entry-List"* screen form: