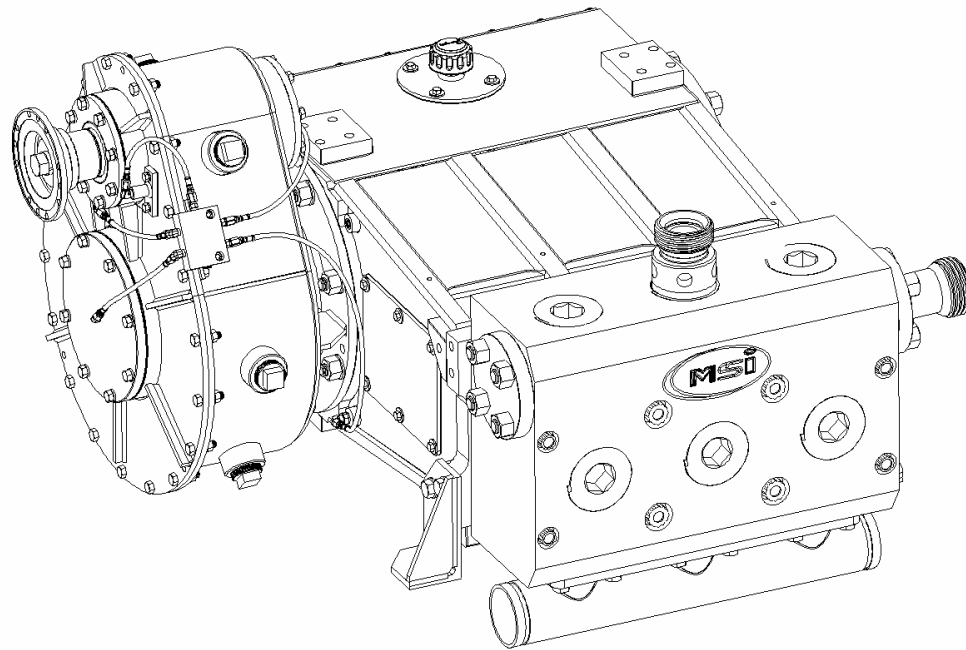


**Dixie Iron Works, Ltd.**  
**300 W. Main St.**  
**Alice, TX 78332**  
[www.diwmsi.com](http://www.diwmsi.com)  
**(800) 242-0059**  
**(361) 664-6597**



**MSI TI-600**

**Technical Manual for**  
**600 HP Triplex**  
**MSI TI-600 Pump**

# 1.20 Complete Pump Assembly

1	2	3	4	5	6	7	8	
A	B	C	D	E	F	G		





### **3.00 Scheduled Maintenance**

MSI recommends that all Pumps have regular scheduled maintenance. Regular maintenance will help ensure trouble-free operation.

### **3.10 Power Frame to Fluid End Make-Up**

Drawings below show the Power Frame and Fluid End make-up for each plunger size.

### 3.10.1 Power Frame to Fluid End Make-Up – 2.75 Plunger

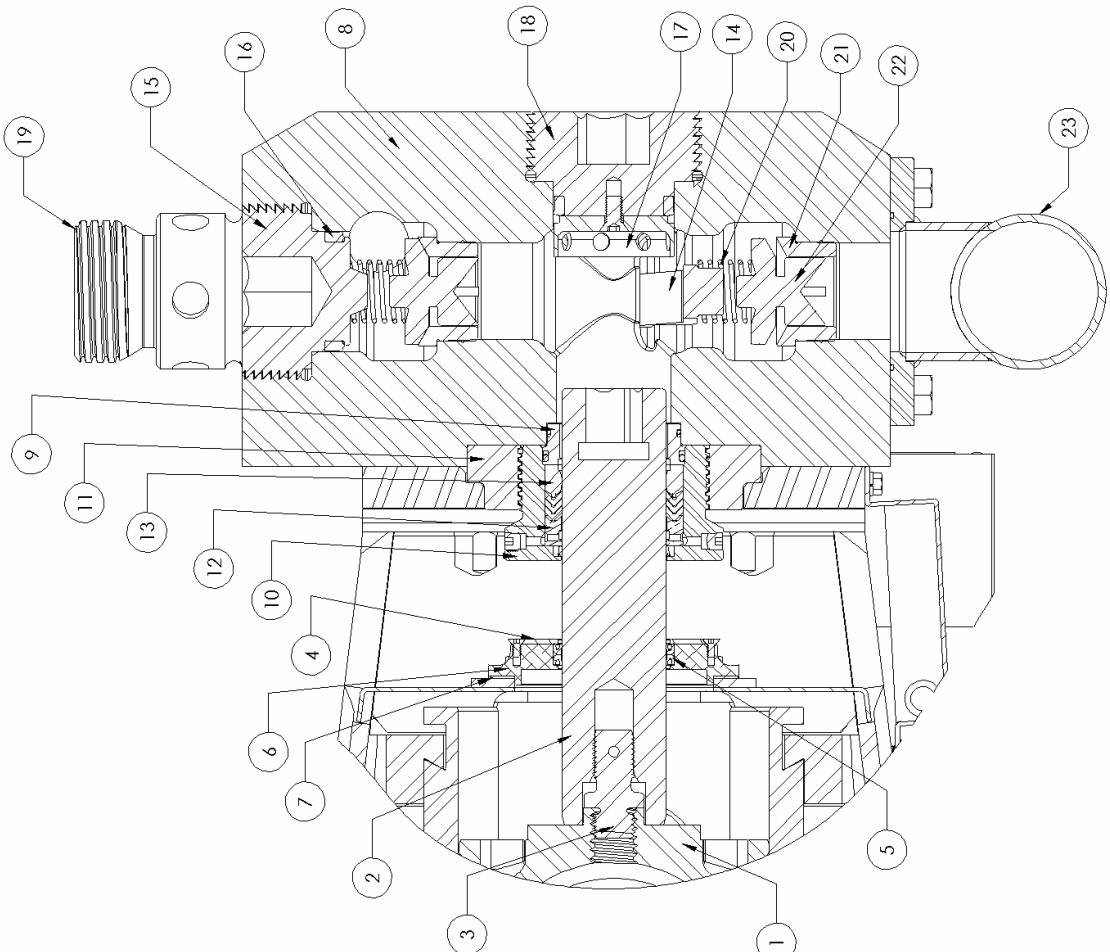
		6		7		8	
		ITEM NO.	QTY.	PART NO.	DESCRIPTION		
		1	3	PEC0055	CROSSHEAD		
		2	3	FEC0063	2.75" PLUNGER		
		3	3	FEC0004	PONY ROD STUD		
		4	3	FEC0064	DIAPHRAM SEAL HOUSING		
		5	6	FEC0067	SEAL, 2.75" DIAPHRAGM		
		6	3	FEC0070	DIAPHRAGM SEAL RETAINER		
		7	3	FEC0021	GASKET, DIAPHRAGM		
		8	1	FEC0087	FLUID CYLINDER		
		9	6	FEC0092	VALVE SEAT		
		10	6	FEC0091	VALVE COMPLETE		
		11	6	FEC0093	VALVE SPRING		
		12	3	FEC0094	VALVE STOP		
		13	3	FEC0097	SUCTION COVER CAGE		
		14	3	FEC0088	SUCTION COVER		
		15	6	FEC0095	SEAL, SUCTION/DISCHARGE COVER		
		16	3	FEC0090	ADAPTER, FLUID END 2-3/4" - 3"		
		17	3	FEC0065	PACKING NUT 2.75"		
		18	3	FEC0068	LANTERN RING		
		19	3	FEC0066	ADAPTER, STUFFING BOX 2.75		
		20	3	FEC0069	PACKING SET, 2.75" STD		
		21	1	FEC0096	GAGE CONNECTION		
		22	2	FEC0089	DISCHARGE COVER		
		23	1	FEC0028	SUCTION MANIFOLD		


TITRATION POWER FRAME TO FLUID END 2.75 INCH SECTION VIEW WATER/ANTHRACENE WELD PRELUBRIC		DRAWN BY DY	DATE 4/19/01	PART NUMBER PFM-2.75-PUMP SECTION VIEW	SHEET SHEET 1 OF 1	BOX 0
COMPUTER GENERATED BY 300 West 100th Street P.O. Box 1000 Leavenworth, KS 66042						

### 3.10.2 Power Frame to Fluid End Make-Up - 3.00 Plunger

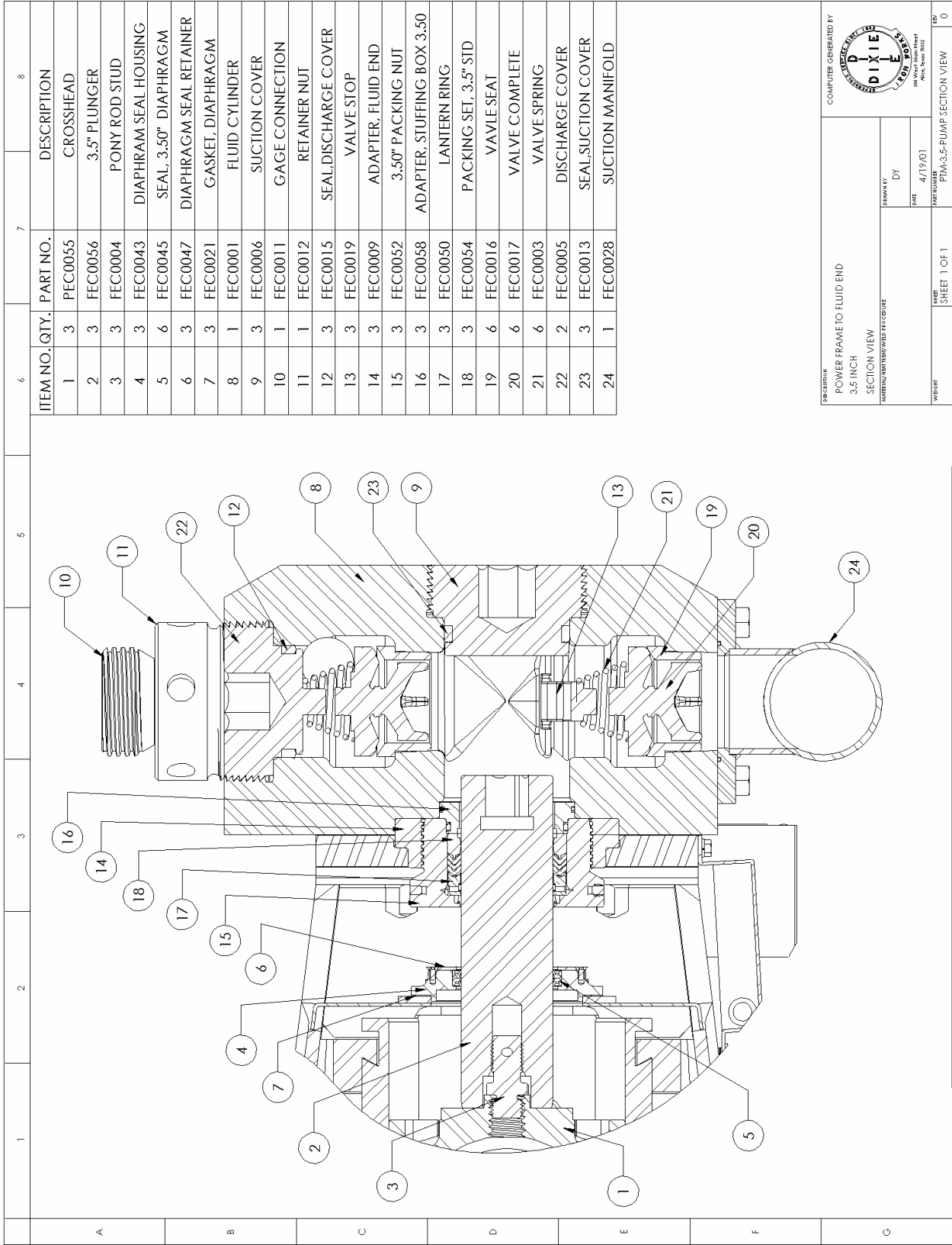
1	2	3	4	5	6	7	8
					ITEM NO., QTY., PART NO.	DESCRIPTION	
A					1 3 PEC0055	CROSSHEAD	
					2 3 FEC0002	3" PLUNGER	
					3 3 FEC0004	PONY ROD STUD	
					4 3 FEC0046	DIAPHRAGM SEAL RETAINER	
					5 6 FEC0022	SEAL, 3.0" DIAPHRAGM	
					6 3 FEC0007	DIAPHRAM SEAL HOUSING	
					7 3 FEC0021	GASKET, DIAPHRAGM	
					8 1 FEC0087	FLUID CYLINDER	
					9 3 FEC0010	ADAPTER, STUFFING BOX	
					10 3 FEC0008	PACKING NUT 3.00"	
					11 3 FEC0090	ADAPTER, FLUID END 2-3/4" - 3"	
					12 3 FEC0032	LANTERN RING	
					13 3 FEC0033	PACKING SET, 3" STD	
					14 3 FEC0094	VALVE STOP	
					15 2 FEC0089	DISCHARGE COVER	
					16 6 FEC0095	SEAL, SUCTION/DISCHARGE COVER	
					17 3 FEC0097	SUCTION COVER CAGE	
					18 3 FEC0088	SUCTION COVER	
					19 1 FEC0096	GAGE CONNECTION	
					20 6 FEC0093	VALVE SPRING	
					21 6 FEC0092	VALVE SEAT	
					22 6 FEC0091	VALVE COMPLETE	
					23 1 FEC0028	SUCTION MANIFOLD	



TOLERANCES  
 POWER FRAME TO FLUID END  
 3.0 INCH  
 SECTION VIEW  
 UNLESS OTHERWISE SPECIFIED

COMPUTER GENERATED BY  
  
 DRAWN BY: DY  
 DATE: 4/19/01  
 PART NUMBER: PFM-3.0-PUMP SECTION VIEW  
 SHEET: 1 OF 1  
 BOX: 0

### 3.10.3 Power Frame to Fluid End Make-Up – 3.50 Plunger



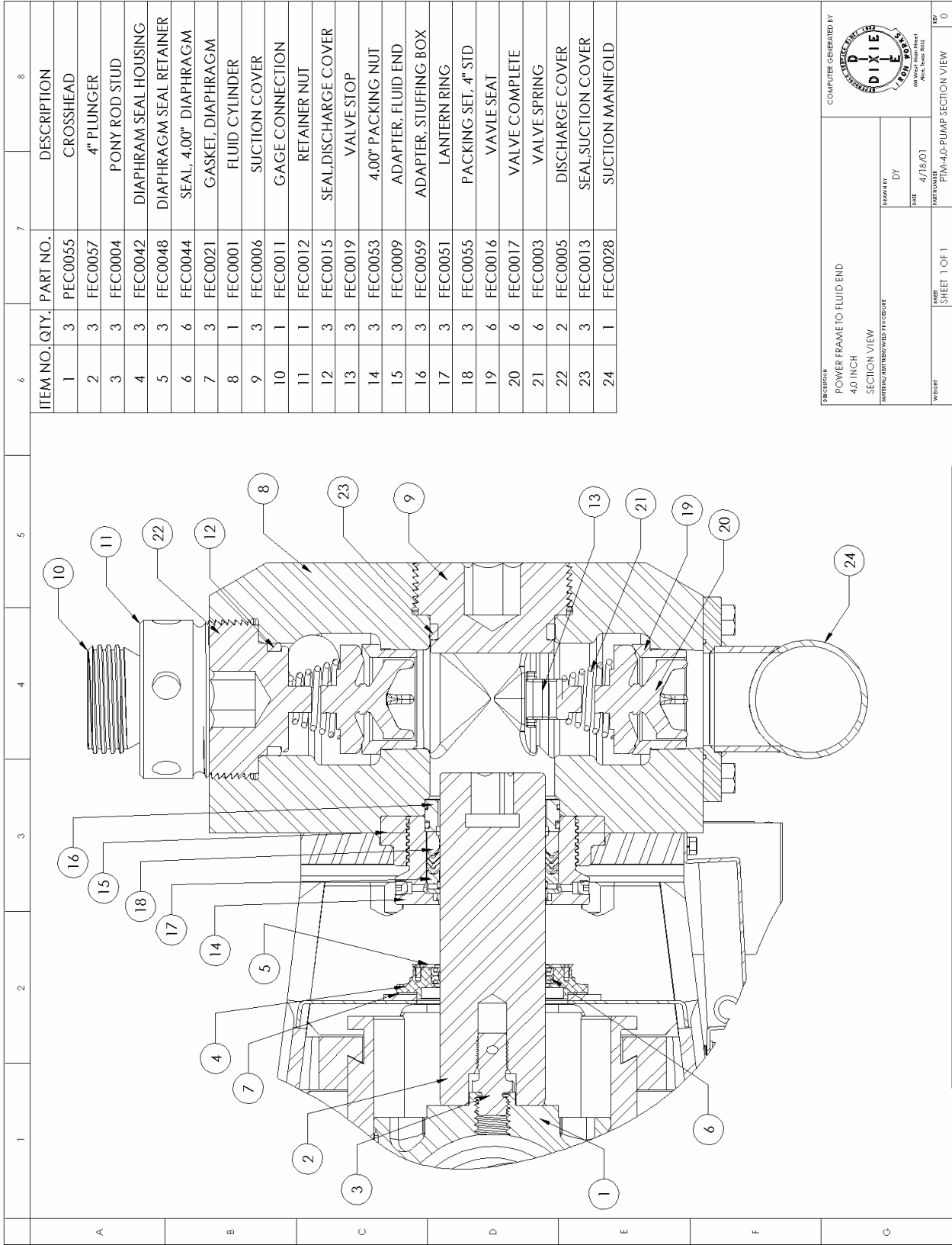
COMPUTER GENERATED BY

POWER FRAME TO FLUID END  
3.5 INCH  
SECTION VIEW  
WARRANTY/POSTERIOR WELD REPAIRS

DRAWN BY: DY  
DATE: 4/19/01  
FIRST NUMBER: PFM-3.5-PUMP SECTION VIEW  
SHEET: 1 OF 1  
REV: 0




### 3.10.4 Power Frame to Fluid End Make-Up - 4.00 Plunger



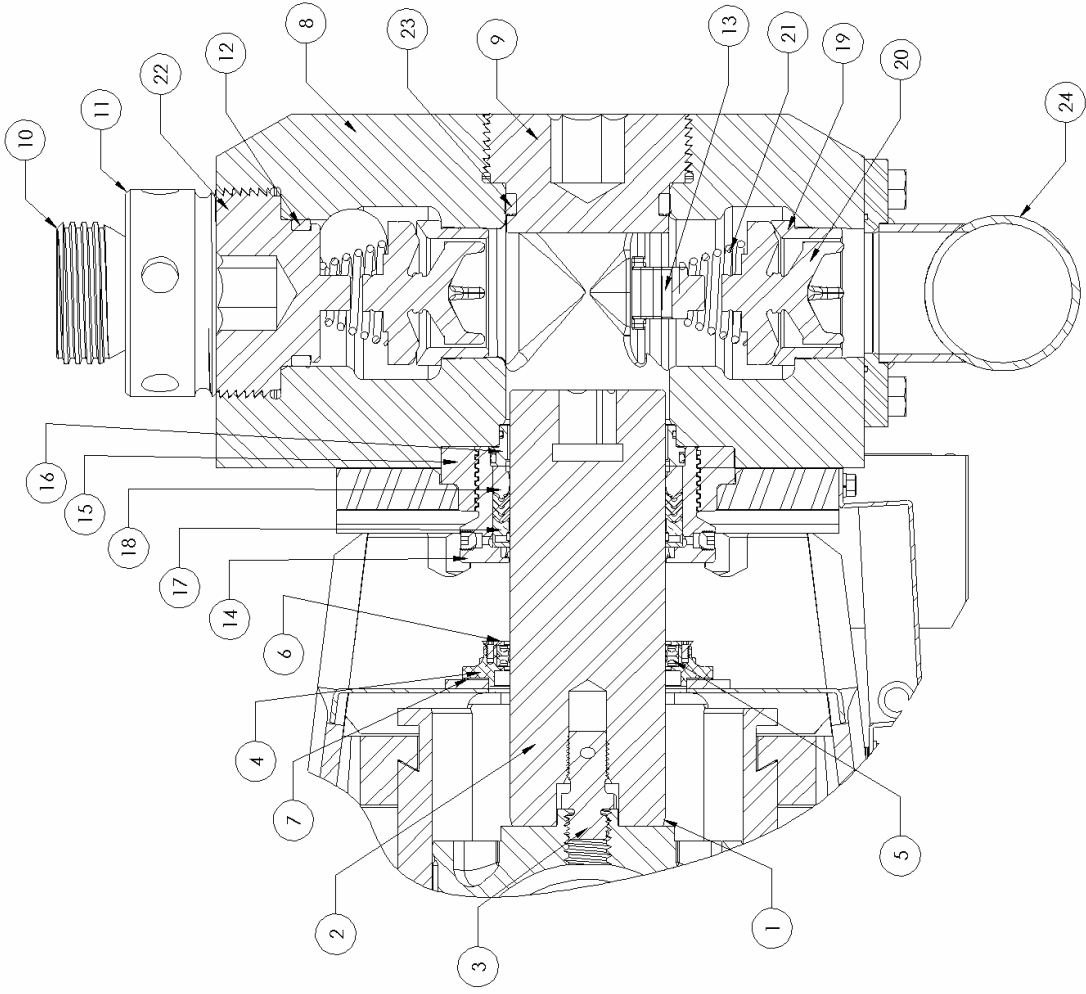
ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	PEC0055	CROSSHEAD
2	3	FEC0057	4" PLUNGER
3	3	FEC0004	PONY ROD STUD
4	3	FEC0042	DIAPHRAM SEAL HOUSING
5	3	FEC0048	DIAPHRAM SEAL RETAINER
6	6	FEC0044	SEAL, 4.00" DIAPHRAGM
7	3	FEC0021	GASKET, DIAPHRAGM
8	1	FEC0001	FLUID CYLINDER
9	3	FEC0006	SUCTION COVER
10	1	FEC0011	GAGE CONNECTION
11	1	FEC0012	RETAINER NUT
12	3	FEC0015	SEAL, DISCHARGE COVER
13	3	FEC0019	VALVE STOP
14	3	FEC0053	4.00" PACKING NUT
15	3	FEC0009	ADAPTER, FLUID END
16	3	FEC0059	ADAPTER, STUFFING BOX
17	3	FEC0051	LANTERN RING
18	3	FEC0055	PACKING SET, 4" STD
19	6	FEC0016	VALVE SEAT
20	6	FEC0017	VALVE COMPLETE
21	6	FEC0003	VALVE SPRING
22	2	FEC0005	DISCHARGE COVER
23	3	FEC0013	SEAL, SUCTION COVER
24	1	FEC0028	SUCTION MANIFOLD

DESCRIPTION  
POWER FRAME TO FLUID END  
4.00 INCH  
SECTION VIEW  
WARNING: HOT SURFACE WITH PRESSURE


COMPUTER GENERATED BY  
  
 DRAWN BY  
DY  
 DATE  
4/18/01  
 PART NUMBER  
PFA-40-PUMP SECTION VIEW  
 SHEET 1 OF 1  
 TWE:GHT  
 BOX 0

### 3.10.5 Power Frame to Fluid End Make-Up - 4.50 Plunger

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	PEC0055	CROSSHEAD
2	3	FEC0038	4.5" PLUNGER
3	3	FEC0004	PONY ROD STUD
4	3	FEC0035	DIAPHRAM SEAL HOUSING
5	6	FEC0041	SEAL, 4.50" DIAPHRAGM
6	3	FEC0049	DIAPHRAGM SEAL RETAINER
7	3	FEC0021	GASKET, DIAPHRAGM
8	1	FEC0001	FLUID CYLINDER
9	3	FEC0006	SUCTION COVER
10	1	FEC0011	GAGE CONNECTION
11	1	FEC0012	RETAINER NUT
12	3	FEC0015	SEAL, DISCHARGE COVER
13	3	FEC0019	VALVE STOP
14	3	FEC0037	4.5" PACKING NUT
15	3	FEC0009	ADAPTER, FLUID END
16	3	FEC0036	ADAPTER, STUFFING BOX
17	3	FEC0039	LANTERN RING
18	3	FEC0040	PACKING SET, 4.5" STD
19	6	FEC0016	VALVE SEAT
20	6	FEC0017	VALVE COMPLETE
21	6	FEC0003	VALVE SPRING
22	2	FEC0005	DISCHARGE COVER
23	3	FEC0013	SEAL, SUCTION COVER
24	1	FEC0028	SUCTION MANIFOLD



DESCRIPTION  
POWER FRAME TO FLUID END  
4.5 INCH  
SECTION VIEW  
WATER/ROCK/STEEL WELD PROCEEDURE

COMPUTER GENERATED BY  
  
 300 West 100th Street  
 P.O. Box 100  
 LeFlore, OK 73557

DRAWN BY  
DY

DATE  
4/16/01

PART NUMBER  
PTM-4.5 INCH-PUMP SECTION VIEW

TWEIGHT  
SHEET 1 OF 1

BOX  
0

### **3.20 Fluid End Assembly-Exploded View**

Drawings below are for the two different sizes of Fluid Ends that MSI manufactures. See Section 6.20 for the different Packing Assembly Drawings.

### 3.20.1 Fluid End Assembly for 2.75 & 3.00 Plungers – Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0087	FLUID CYLINDER
2	3	PACKING ASSEMBLY	PACKING ASSEMBLY
3	3	FEC0094	VALVE STOP
4	2	FEC0089	DISCHARGE COVER
5	6	FEC0095	SEAL,SUCTION/DISCHARGE COVER
6	3	FEC0097	SUCTION COVER CAGE
7	3	FEC0088	SUCTION COVER
8	3	HC0132	RECESSED SOC HD, 1/2"-13 x 1.00"
9	1	FEC0096	GAGE CONNECTION
10	6	FEC0093	VALVE SPRING
11	6	FEC0092	VALVE SEAT
12	6	FEC0091	VALVE COMPLETE
13	1	FEC0028	SUCTION MANIFOLD
14	1	FEC0030	DISCHARGE FLG, 2" BALNK
15	2	FEC0014	SEAL, DISCHARGE FLANGE
16	8	HC0092	HEX NUT, 1"-8
17	8	HC0091	STUD, 1"-8 x 3.50" B7
18	12	HC0090	HEX HD, 3/4"-10 x 2.00"
19	3	OC0079	O-RING, SUCTION MANIFOLD
20	1	FEC0029	DISCHARGE FLANGE

DESCRIPTION	FLUID END ASSEMBLY 2.75" - 3" ANSI 600 WATER/WATERHEATED/STEAM SERVICE	WEIGHT	1460 LBS	SHEET	SHEET 1 OF 1	REV	0
COMPUTER GENERATED BY	DIXIE		DATE	2/26/01	PART NUMBER	PTM-FA0001-EXPLODED	
DESIGNED BY	DR						

### 3.20.2 Fluid End Assembly for 3.50, 4.00 & 4.50 Plungers – Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0001	FLUID CYLINDER
2	3	FEC0006	SUCTION COVER
3	1	FEC0011	GAGE CONNECTION
4	1	FEC0012	RETAINER NUT
5	3	FEC0015	SEAL/DISCHARGE COVER
6	3	FEC0019	VALVE STOP
7	6	FEC0016	VALVE SEAT
8	6	FEC0017	VALVE COMPLETE
9	6	FEC0003	VALVE SPRING
10	2	FEC0005	DISCHARGE COVER
11	3	FEC0013	SEAL,SUCTION COVER
12	1	FEC0028	SUCTION MANIFOLD
13	8	HC0092	HEX NUT, 1"-8
14	8	HC0091	STUD, 1"-8 x 3.50" B7
15	12	HC0090	HEX HD, 3/4"-10 x 2.00"
16	1	FEC0030	DISHCHARGE FLG, 2" BALNK
17	2	FEC0014	SEAL, DISCHARGE FLANGE
18	1	FEC0029	DISCHARGE FLANGE
19	3	OC0079	O-RING, SUCTION MANIFOLD
20	3		PACKING ASSEMBLY

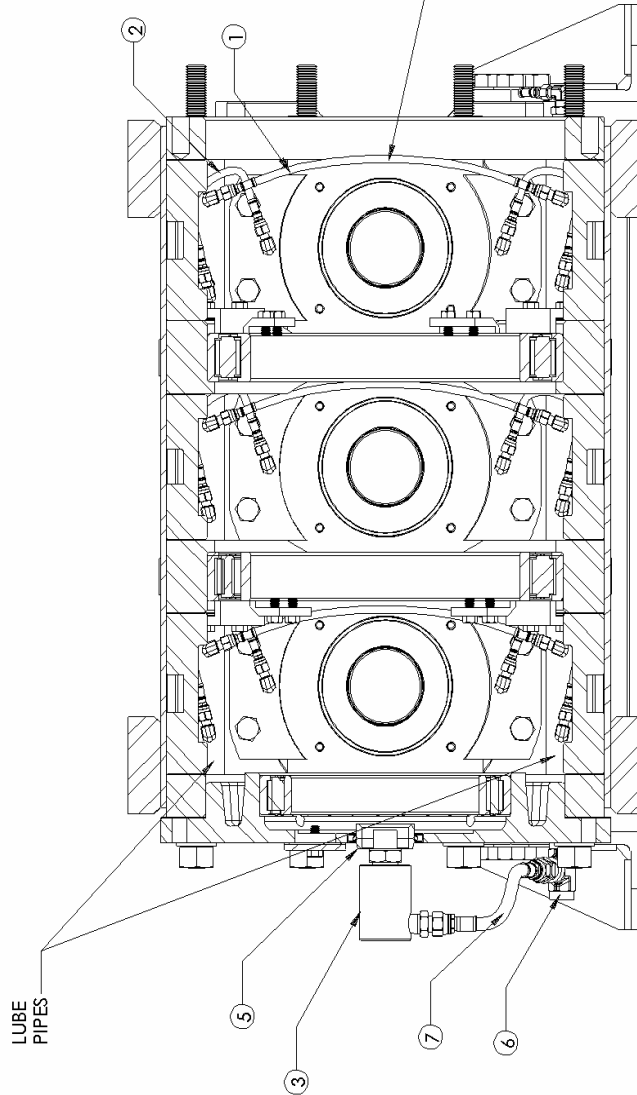
DESCRIPTION	FLUID END ASSEMBLY 3 1/2" - 4 1/2" ANSI 600 WATER/WATER/VAPOUR SERVICE	DATE	3/2/01
DESIGNER		DATE ENGINEERED	FEA0003
WEIGHT	13.70 LBS.	SHEET	SHEET 1 OF 1
REV			0

COMPUTER GENERATED BY  
  
 1800 Park Ridge Road  
 Dixie, NC 27521

# 4.10 Power Frame Lube Lines- Dual Lube Pipe

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	PEC0053	HOSE ASSEMBLY, LUBRICATOR (600HP) INTERNAL x 16.50"
2	6	PEC0054	HOSE ASSEMBLY, LUBRICATOR (600HP) INTERNAL x 9.50"
3	1	PEC0052	ROTOSEAL, LUBRICATOR (600HP&1000HP)
4	2	UC0050	BLANK PLUG, 1/2" NPT STD(SOCKET)
5	1	PEC0064	SPACER, CRANKSHAFT MS1 600 & 1000
6	1	TC0094	TEE BODY, 1/2"NPT FFF
7	1	PEC0051	HOSE ASSEMBLY, LUBRICATOR (600HP) x 12"



ORDER COMPLETE LUBE ASSEMBLY AS PEC0050

POWER FRAME LUBE LINES  
DUAL LUBE PIPE

INTERVAL: 1000 HOURS / 1000 HOURS

DATE: 03/26/01

DRAWN BY: KB

DATE: 03/26/01

PART NUMBER: FEAD001

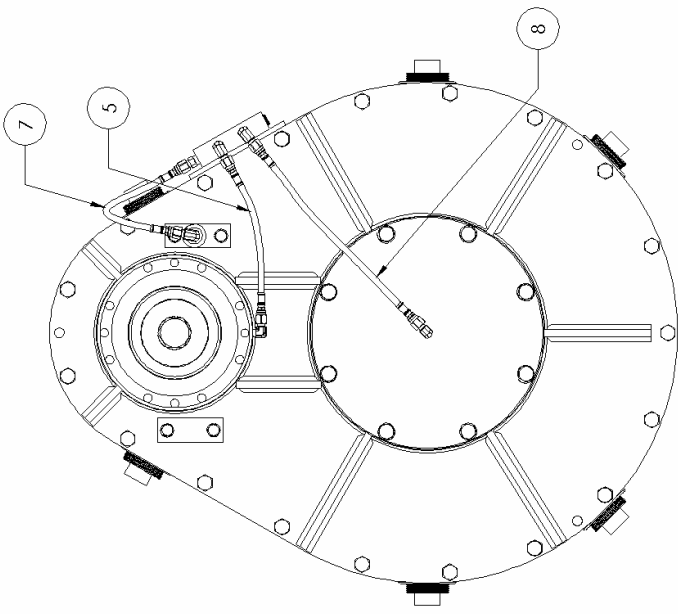
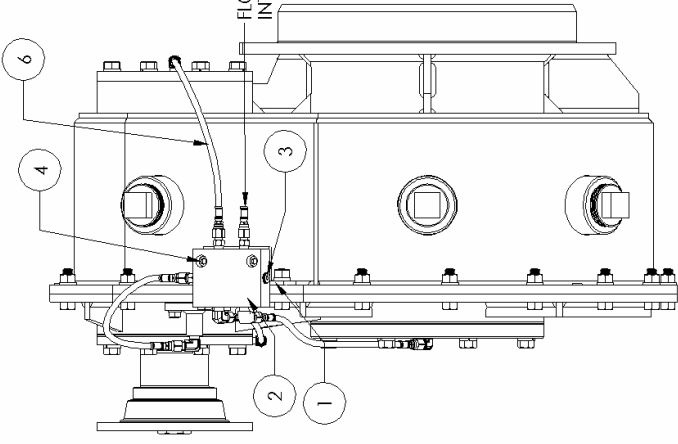
REVISION: 0

COMPUTER GENERATED BY: DIXIE

# 4.20 Gear Reducer Lube Lines

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	GRC0045	MANIFOLD BRACKET
2	1	GRC0044	MANIFOLD BLOCK, 1/4"NPT x 6
3	1	UC0301	BLANK PLUG, 1/4"NPT STD. (SOCKET TYPE)
4	2	HC0054	S.O.C. HD, 3/8"-16 x 0.75"
5	1	GRC0030	HOSE ASSEMBLY, PINION RETAINER (600HP) x 9.5"
6	1	GRC0029	HOSE ASSEMBLY, PINION CAP (600HP) x 15"
7	1	GRC0028	HOSE ASSEMBLY, LUBE PIPE (600HP) x 10"
8	1	GRC0031	HOSE ASSEMBLY, BEARING COVER (600HP) x 13.5"


  

ORDER COMPLETE LUBE ASSEMBLY AS GRC0019

DESCRIPTION: GEAR REDUCER LUBE LINES

WEIGHT: 908 LBS. PRICE: SHEET 1 OF 1

COMPUTER GENERATED BY: 

DRAWN BY: DY

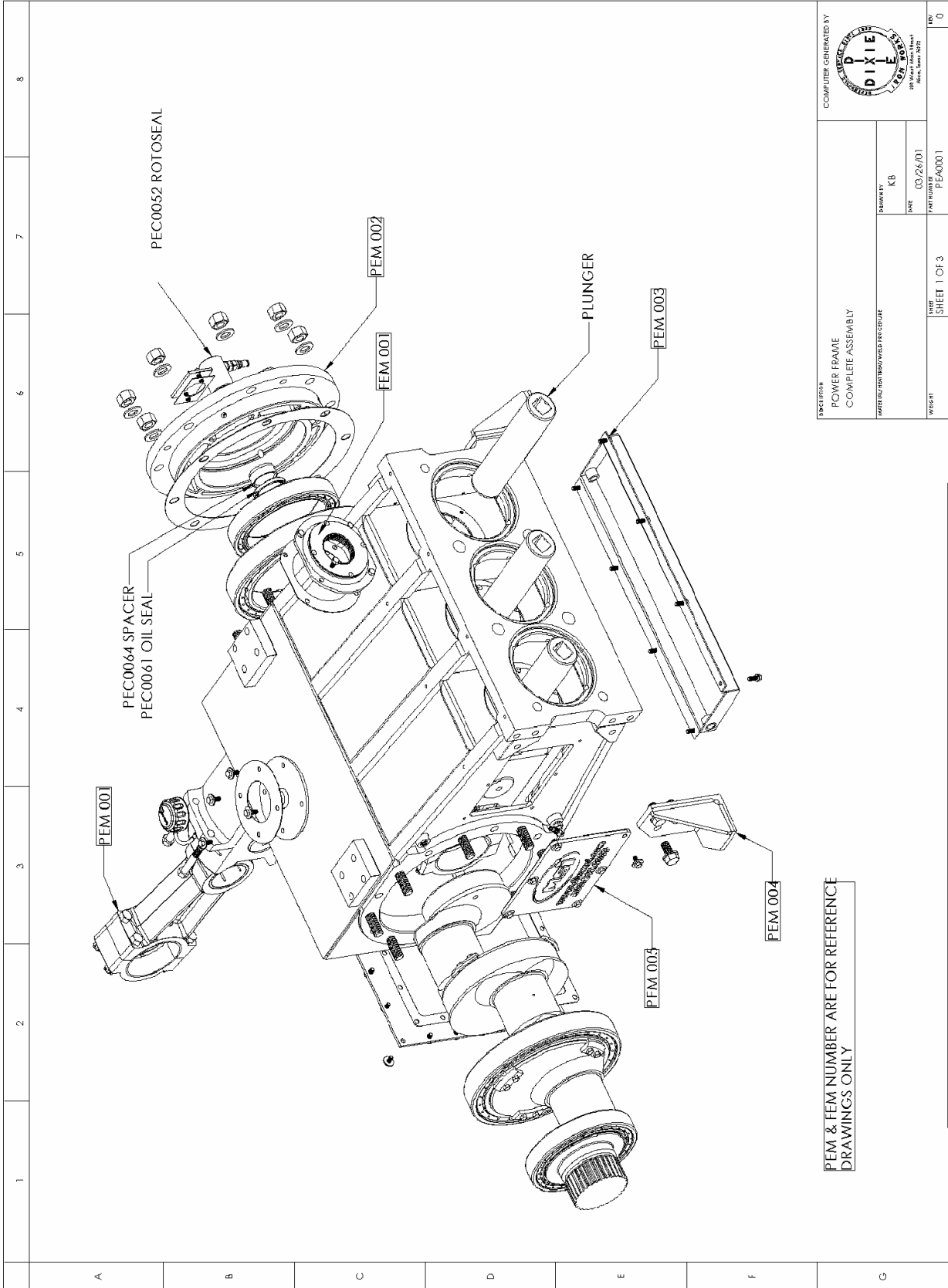
DATE: 5/8/01

PART NUMBER: C-FA0001

REV: 0

5.10

Power Frame Assembly-Exploded View



DESCRIPTION POWER FRAME COMPLETE ASSEMBLY		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	
DATE 03/26/01		DRAWN BY KB		DATE 03/26/01		PART NUMBER PEA0001		REV 0	

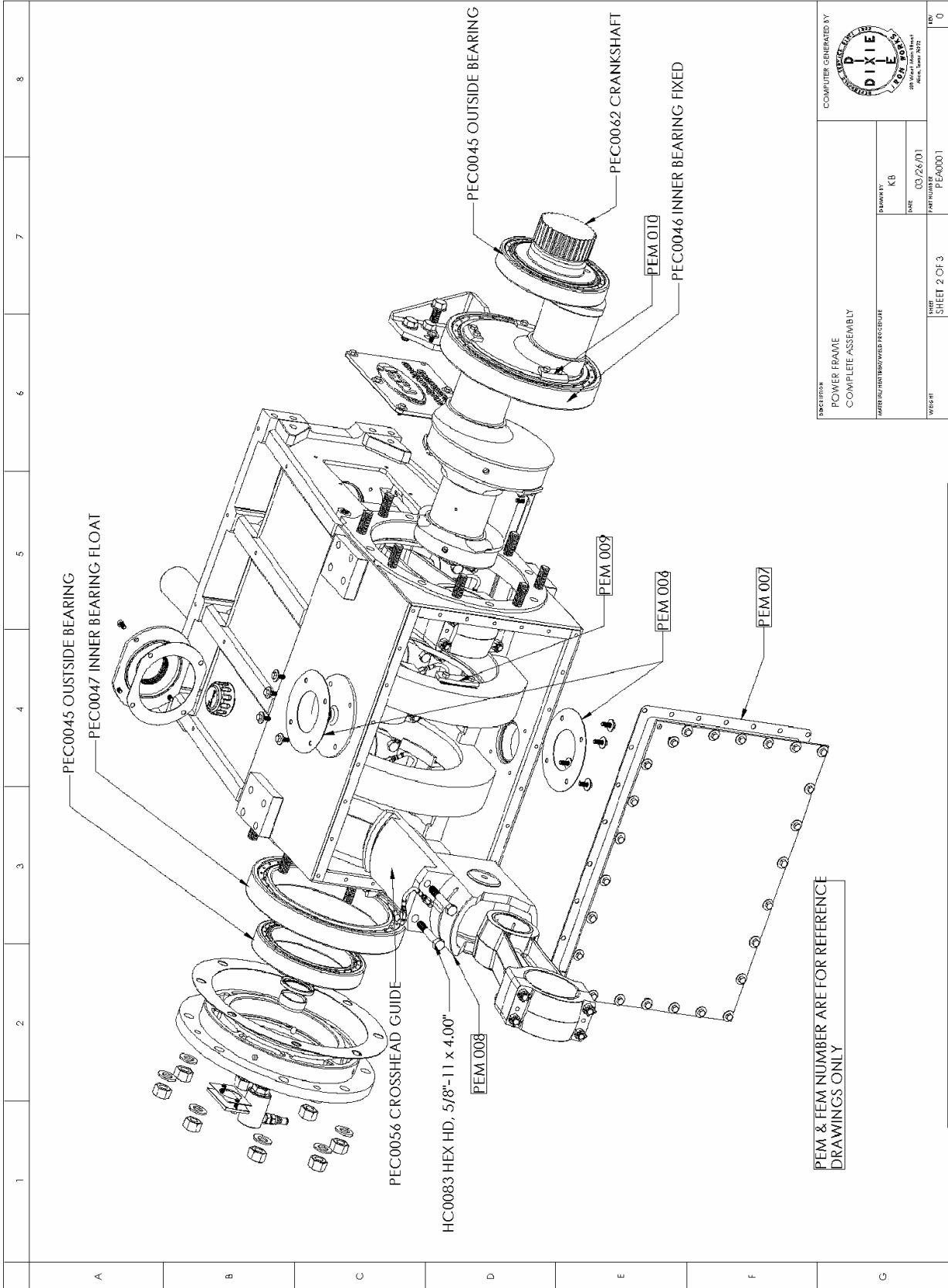
PEM & FEM NUMBER ARE FOR REFERENCE  
DRAWINGS ONLY

COMPUTER GENERATED BY  
DIXIE  
DIXIE TOOL & DIE CO.  
1000 W. 10th St.  
Mesa, Ariz. 85202



5.10.1

Power Frame Assembly-Exploded View



DESCRIPTION  
POWER FRAME  
COMPLETE ASSEMBLY

DATE 03/26/01

DESIGNED BY KB

DRAWN BY KB

DATE 03/26/01

PART NUMBER PEAF0001

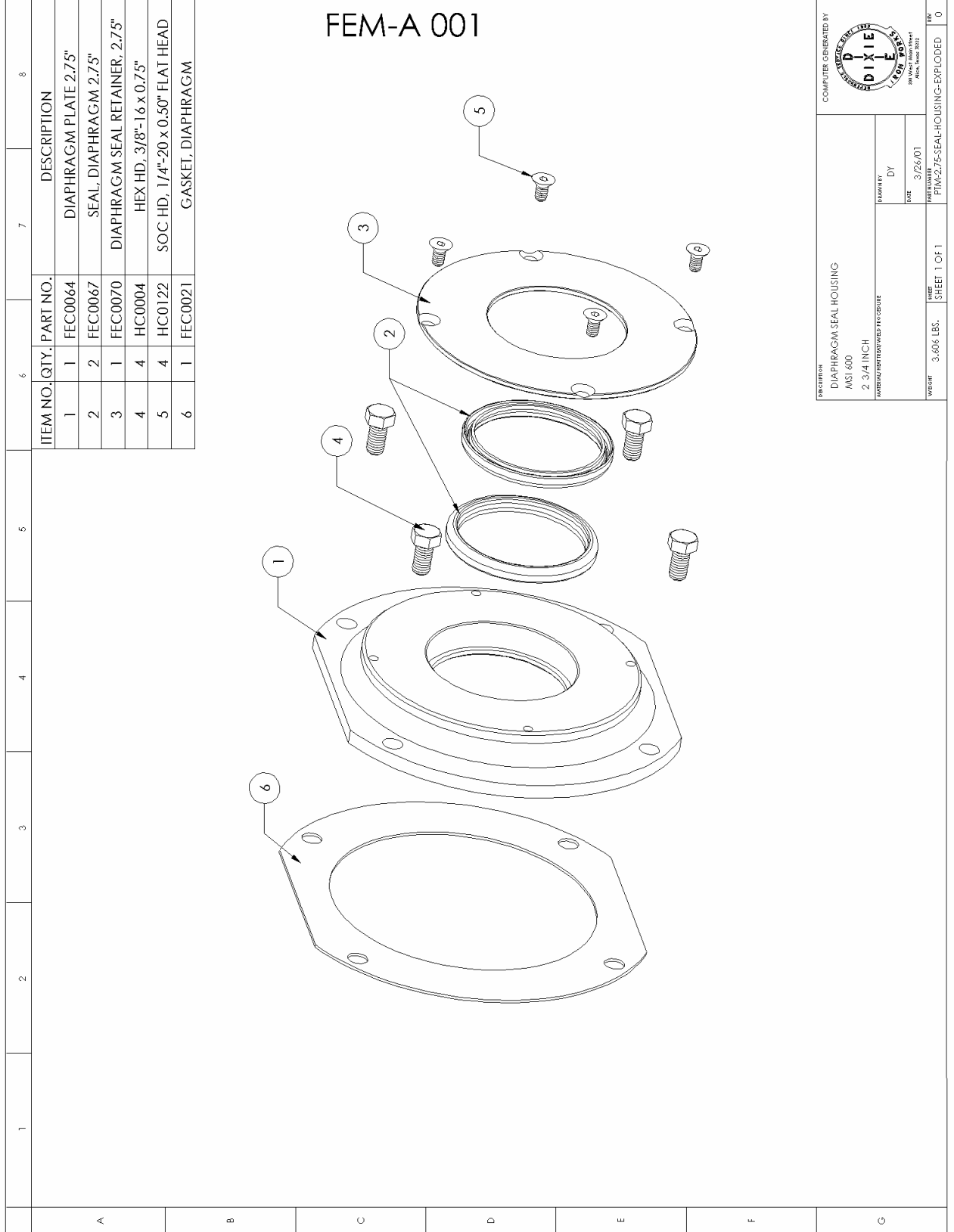
WEIGHT SHEET 2 OF 3

COMPUTER GENERATED BY  
DIXIE  
DIXIE TOOL & DIE CO.  
1000 W. 10th St.  
Mesa, Ariz. 85202

REV 0

5.10.2

Power Frame Assembly-Exploded View 2.75 Plunger Reference



5.10.3

Power Frame Assembly-Exploded View 3.00 Plunger Reference

1	2	3	4	5	6	7	8
A					ITEM NO., QTY., PART NO.	DESCRIPTION	
					1	FEC0046	DIAPHRAGM SEAL RETAINER, 3"
					2	FEC0022	SEAL, DIAPHRAGM 3"
					3	FEC0007	DIAPHRAGM PLATE 3"
					4	HC0004	HEX HD, 3/8"-16 x 0.75"
					5	FEC0021	GASKET, DIAPHRAGM
					6	HC0122	SOC HD, 1/4"-20 x 0.50" FLAT HEAD

## FEM-B 001

DESCRIPTION	DIAPHRAGM SEAL HOUSING FOR 3" PLUNGER ANSI 600 WATER/HEAVY WELD PROCESS	DRAWN BY	DY	DATE	3/22/01
COMPUTER GENERATED BY					
WEIGHT	3.495 LBS.	PAGE	SHEET 1 OF 1		
REV	PFA-3.0-SEAL-HOUSING-EXPLODED				
REV	0				

5.10.4

Power Frame Assembly-Exploded View 3.50 Plunger Reference

1	2	3	4	5	6	7	8	
A								
B								
C								
D								
E								
F								
G								

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0043	DIAPHRAGM PLATE 3.50"
2	2	FEC0045	SEAL, DIAPHRAGM 3.50"
3	1	FEC0047	DIAPHRAGM SEAL RETAINER, 3.50"
4	4	HC0122	SOC. HD, 1/4"-20 x 0.50" FLAT HEAD
5	1	FEC0021	GASKET, DIAPHRAGM
6	4	HC0004	HEX HD, 3/8"-16 x 0.75"

## FEM-C 001

<p>DESCRIPTION: DIAPHRAGM SEAL HOUSING          ANSI 600          3 1/2 INCH          WAREHOUSE/STOCK/WELD PROCEDURE</p>	<p>COMPUTER GENERATED BY: </p> <p>DRAWN BY: DY</p> <p>DATE: 3/26/01</p> <p>PART NUMBER: PFM-3.5-SEAL-HOUSING-EXPLODED</p>
<p>TWEIGHT: 3.212 LBS.</p>	<p>SHEET 1 OF 1</p>
<p>REV: 0</p>	

5.10.5

Power Frame Assembly-Exploded View 4.00 Plunger Reference

1	2	3	4	5	6	7	8			
A						ITEM NO., QTY., PART NO.	DESCRIPTION			
					1	FEC0042	DIAPHRAGM SEAL PLATE 4.00"			
					2	FEC0048	DIAPHRAGM SEAL RETAINER, 4.00"			
					3	FEC0044	SEAL, DIAPHRAGM 4.00"			
					4	HC0122	SOC. HD, 1/4"-20 x 0.50" FLAT HEAD			
					5	FEC0021	GASKET, DIAPHRAGM			
					6	HC0004	HEX HD, 3/8"-16 x 0.75"			

## FEM-D 001

<p>DESCRIPTION</p> <p>DIAPHRAGM SEAL HOUSING</p> <p>MSI 600</p> <p>4 INCH</p> <p>WARRANTY/REPAIR/WELD PROCEDURE</p>	<p>DESIGNED BY</p> <p>DY</p>	<p>DATE</p> <p>3/26/01</p>
<p>COMPUTER GENERATED BY</p>		
<p>WEIGHT</p> <p>2,890 LBS.</p>	<p>DATE</p> <p>SHEET 1 OF 1</p>	<p>REV</p> <p>0</p>

5.10.6

Power Frame Assembly-Exploded View 4.50 Plunger Reference

1	2	3	4	5	6	7	8	
A						ITEM NO., QTY., PART NO.	DESCRIPTION	
					1	FEC0042	DIAPHRAGM SEAL PLATE 4.00"	
					2	FEC0048	DIAPHRAGM SEAL RETAINER, 4.00"	
					3	FEC0044	SEAL, DIAPHRAGM 4.00"	
					4	HC0122	SOC. HD, 1/4"-20 x 0.50" FLAT HEAD	
					5	FEC0021	GASKET, DIAPHRAGM	
					6	HC0004	HEX HD, 3/8"-16 x 0.75"	

## FEM-D 001

<p>DESCRIPTION: DIAPHRAGM SEAL HOUSING          MSI 600          4 INCH          WAREHOUSE/STOCK/WELD PROCEDURE</p>	<p>COMPUTER GENERATED BY: </p> <p>DESIGNED BY: DY</p> <p>DATE: 3/26/01</p> <p>ISSUED BY: PFM-410-SEAL-HOUSING-EXPLODED</p>
<p>WEIGHT: 2.890 LBS.</p> <p>SIZE: SHEET 1 OF 1</p>	<p>REV: 0</p>

5.10.7

Power Frame Assembly-Exploded View Reference

1	2	3	4	5	6	7	8	
A	B	C	D	E	F	G		

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	2	HC0105	DOWEL PIN, 3/8" x 1.50"
2	4	pec0048	CONNECTING ROD BOLT, (600HP)
3	4	HC0086	HEX NUT, 5/8"-11 CASTELLATED
4	1	PEC0029	BEARING
5	1	PEC0044	BEARING, CONNECTING ROD (600HP)
6	4	HC0088	COITER PIN
7	1	pec0057B	CONNECTING ROD
8	1	pec0057A	CONNECTING ROD

## PEM 001

DESCRIPTION  
CONNECTING ROD ASSEMBLY  
EXPLODED VIEW

DRAWING/ISSUANCE WELD PROCEDURE

DRAWN BY: KB

DATE: 03/26/01

PART NUMBER: PEC-SUB-PEC0057

SHEET 1 OF 1

COMPUTER GENERATED BY

300 West Main Street  
P.O. Box 1000  
Lafayette, LA 70501

REV: 0

5.10.8

Power Frame Assembly-Exploded View Reference

		6		7		8	
		ITEM NO.	QTY.	PART NO.	DESCRIPTION		
A		1	1	PEC0063	MAIN BEARING HOUSING, (600HP)		
B		2	1	PEC0031	GASKET		
C		3	1	PEC0043	GASKET		
D		4	1	PEC0032	TACH COVER		
E		5	8	HC0087	FLAT WASHER, 7/18" STD		
F		6	8	HC0085	HEX NUT, 7/18"-9		
G		7	2	HC0015	HEX HD, 3/8"-16 x 1.00"		

# PEM 002

FUNCTION		MAIN BEARING ASSEMBLY	
DRAWN/REVISION/WELD PROCEDURE		DRAWN BY: KB	
DATE		03/27/01	
PART NUMBER		PEC_SUB_BEARING HOUSING	
TWEIGHT		SHEET 1 OF 1	
		REV: 0	

COMPUTER GENERATED BY

DATE: 03/27/01

PART NUMBER: PEC\_SUB\_BEARING HOUSING

TWEIGHT: SHEET 1 OF 1

REV: 0



5.10.9

Power Frame Assembly-Exploded View Reference

1	2	3	4	5	6	7	8
A	B	C	D	E	F		

## PEM 003

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	PEC0065	OIL COLLECTOR
2	8	HC0099	LOCK WASHER, 3/8" STD
3	8	HC0015	HEX HD, 3/8"-16 x 1.00"

DESCRIPTION  
OIL PAN COLLECTOR WITH NUTS AND WASHERS

DATE 03/27/01

DESIGNED BY MB

COMPUTER GENERATED BY

<small>DATE</small>	<small>DATE</small>	<small>REV</small>
SHEET 1 OF 1	PEC_SUB_OILPAN COLLECTOR	0

5.10.10

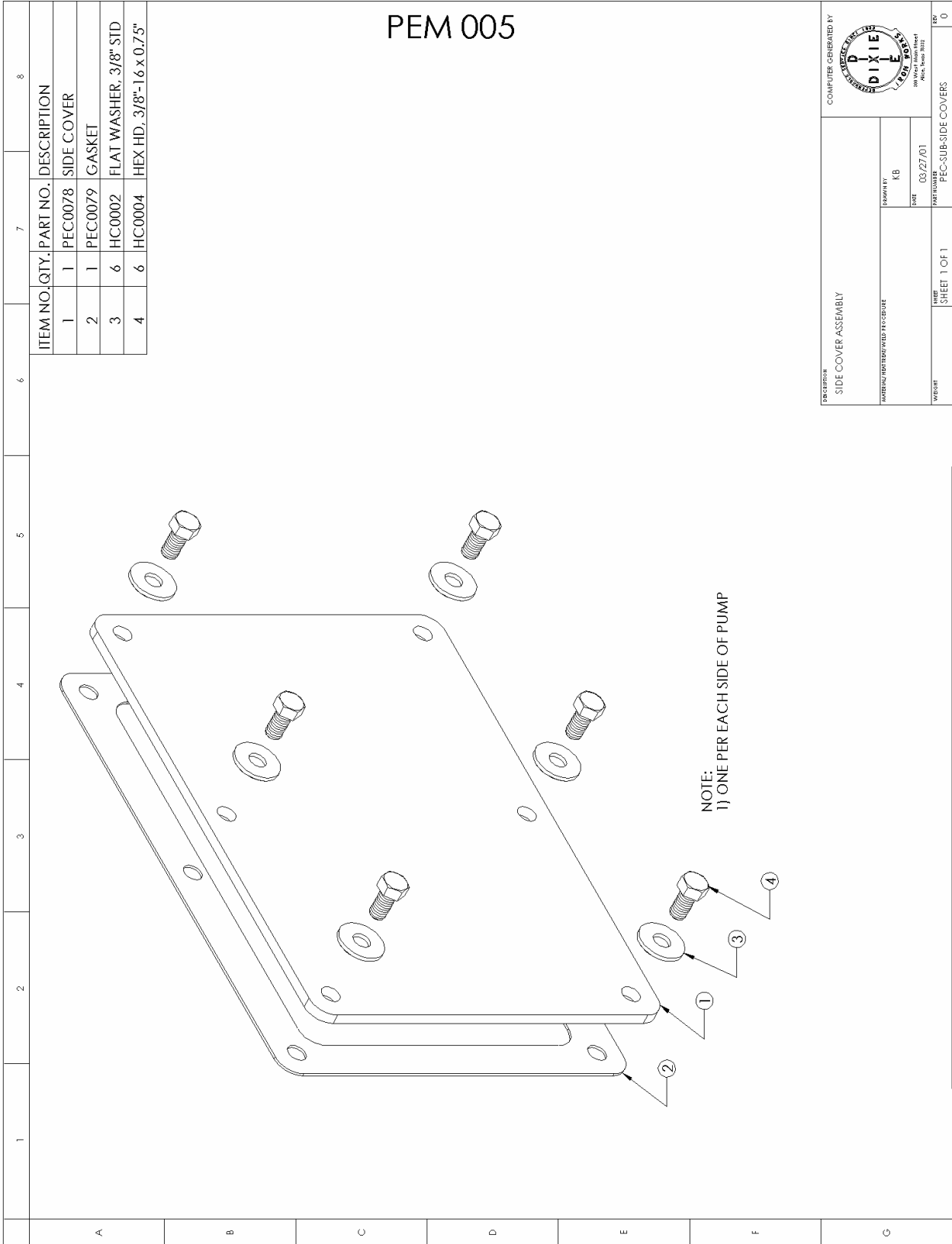
Power Frame Assembly-Exploded View Reference

A	B	C	D	E																					
<p>PEC0037</p> <p>NOTE: PEC0022 WILL BE THE LEFT FOOT FOR LEFT-HAND DRIVE CONFIGURATION PEC0037 WILL BE THE RIGHT FOOT FOR LEFT-HAND DRIVE CONFIGURATION</p>					<p>PEC0022</p>																				
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ITEM NO.</th> <th style="width: 10%;">QTY.</th> <th style="width: 40%;">PART NO.</th> <th style="width: 40%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>PEC0022</td> <td>FRONT FOOT, RIGHT (600HP)</td> </tr> <tr> <td>2</td> <td>3</td> <td>HC0134</td> <td>FLAT WASHER, 3/4" SAE "N"</td> </tr> <tr> <td>3</td> <td>3</td> <td>HC0108</td> <td>HEX HD, 3/4"-10 x 1.50"</td> </tr> </tbody> </table>										ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	1	PEC0022	FRONT FOOT, RIGHT (600HP)	2	3	HC0134	FLAT WASHER, 3/4" SAE "N"	3	3	HC0108	HEX HD, 3/4"-10 x 1.50"
ITEM NO.	QTY.	PART NO.	DESCRIPTION																						
1	1	PEC0022	FRONT FOOT, RIGHT (600HP)																						
2	3	HC0134	FLAT WASHER, 3/4" SAE "N"																						
3	3	HC0108	HEX HD, 3/4"-10 x 1.50"																						
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ITEM NO.</th> <th style="width: 10%;">QTY.</th> <th style="width: 40%;">PART NO.</th> <th style="width: 40%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>PEC0037</td> <td>FRONT FOOT, LEFT (600HP)</td> </tr> <tr> <td>2</td> <td>3</td> <td>HC0134</td> <td>FLAT WASHER, 3/4" SAE "N"</td> </tr> <tr> <td>3</td> <td>3</td> <td>HC0108</td> <td>HEX HD, 3/4"-10 x 1.50"</td> </tr> </tbody> </table>										ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	1	PEC0037	FRONT FOOT, LEFT (600HP)	2	3	HC0134	FLAT WASHER, 3/4" SAE "N"	3	3	HC0108	HEX HD, 3/4"-10 x 1.50"
ITEM NO.	QTY.	PART NO.	DESCRIPTION																						
1	1	PEC0037	FRONT FOOT, LEFT (600HP)																						
2	3	HC0134	FLAT WASHER, 3/4" SAE "N"																						
3	3	HC0108	HEX HD, 3/4"-10 x 1.50"																						
<p>COMPUTER GENERATED BY</p> <p>DESIGNED BY: KB DATE: 3/27/01 PART NUMBER: PEC_SUB_PEC0022 SHEET 1 OF 1 REV: 0</p>																									


5.10.11

Power Frame Assembly-Exploded View Reference

PEM 005

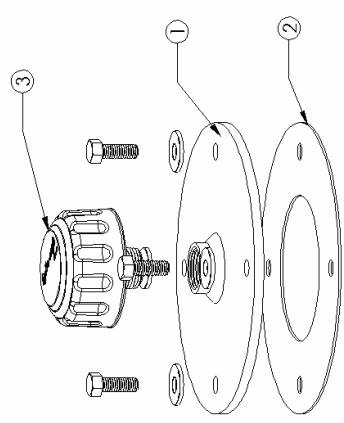
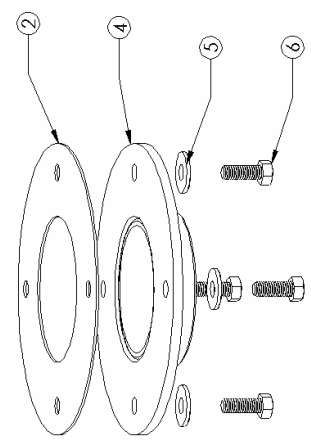



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	PEC0078	SIDE COVER
2	1	PEC0079	GASKET
3	6	HC0002	FLAT WASHER, 3/8" STD
4	6	HC0004	HEX HD, 3/8"-16 x 0.75"

DESCRIPTION SIDE COVER ASSEMBLY		COMPUTER GENERATED BY 	
DRAWING/REVISION/WELD PROCEDURE		DESIGNED BY K.B.	DATE 03/27/01
TWEIGHT		PART NUMBER PEC-SUB-SIDE-COVERS	REV. 0
SHEET 1 OF 1			

5.10.12

Power Frame Assembly-Exploded View Reference

1	2	3	4	5	6	7	8																												
A																																			
B	<table border="1"> <thead> <tr> <th>ITEM NO.</th> <th>QTY.</th> <th>PART NO.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>PEC0084</td> <td>BREATHER PORT</td> </tr> <tr> <td>2</td> <td>2</td> <td>PEC0083</td> <td>GASKET</td> </tr> <tr> <td>3</td> <td>1</td> <td>PEC0026</td> <td>BREATHER, (600HP)</td> </tr> <tr> <td>4</td> <td>1</td> <td>PEC0085</td> <td>DRAIN PORT, (600HP)</td> </tr> <tr> <td>5</td> <td>8</td> <td>HC0002</td> <td>FLAT WASHER, 3/8" STD</td> </tr> <tr> <td>6</td> <td>8</td> <td>HC0015</td> <td>HEX HD, 3/8"-1.6 x 1.00"</td> </tr> </tbody> </table>							ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	1	PEC0084	BREATHER PORT	2	2	PEC0083	GASKET	3	1	PEC0026	BREATHER, (600HP)	4	1	PEC0085	DRAIN PORT, (600HP)	5	8	HC0002	FLAT WASHER, 3/8" STD	6	8	HC0015	HEX HD, 3/8"-1.6 x 1.00"
ITEM NO.	QTY.	PART NO.	DESCRIPTION																																
1	1	PEC0084	BREATHER PORT																																
2	2	PEC0083	GASKET																																
3	1	PEC0026	BREATHER, (600HP)																																
4	1	PEC0085	DRAIN PORT, (600HP)																																
5	8	HC0002	FLAT WASHER, 3/8" STD																																
6	8	HC0015	HEX HD, 3/8"-1.6 x 1.00"																																
C																																			
D	<p style="text-align: center;">PEM 006</p>																																		
E	<p style="text-align: center;">COMPUTER GENERATED BY</p> 																																		
F	<p>BREATHER AND DRAIN PORT ASSEMBLY MSI 600 WARNING/HAZARD WELD PROCEDURE</p>																																		
G	<p>DESIGNED BY: KB DATE: 03/26/01 PART NUMBER: PEC_SUB_BREATHER-DRAIN PORTS DRAWN: SHEET 1 OF 1 REV: 0</p>																																		



5.10.14

Power Frame Assembly-Exploded View Reference

1	2	3	4	5	6	7	8		
						ITEM NO., QTY., PART NO., DESCRIPTION			
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						5	6	7	8
						9	10	11	12
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5.10.15

Power Frame Assembly-Exploded View Reference

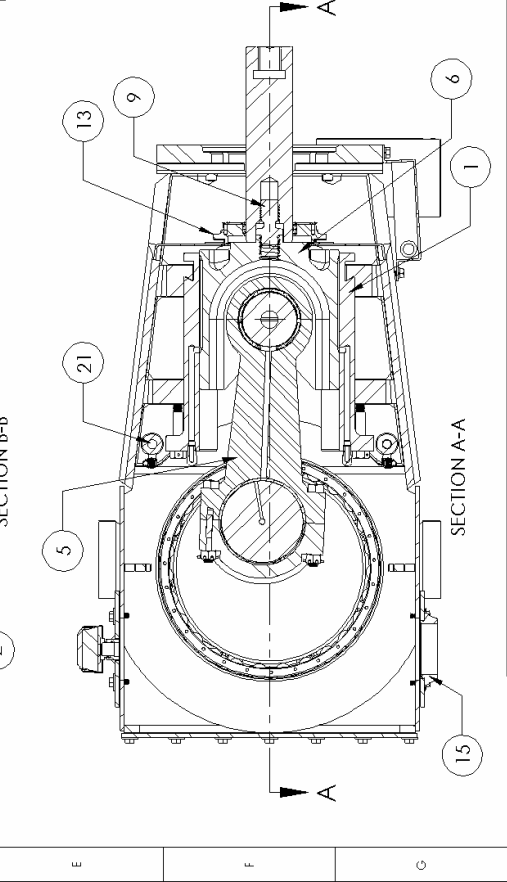
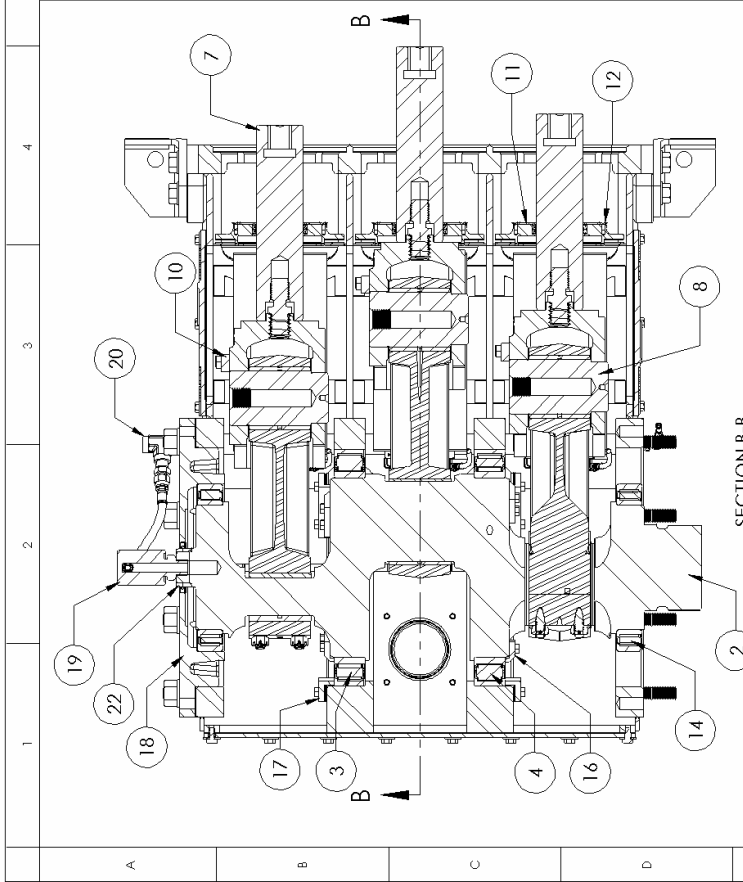
1	2	3	4	5	6	7	8																		
A	B	C	D	E	F	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ITEM NO.</th> <th style="width: 10%;">QTY.</th> <th style="width: 10%;">PART NO.</th> <th style="width: 70%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">PEC0060</td> <td>BEARING-RETAINER</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">PEC0028</td> <td>SHIM SET</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">HC0015</td> <td>HEX HD, 3/8"-16 x 1.00"</td> </tr> </tbody> </table>		ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	1	PEC0060	BEARING-RETAINER	2	1	PEC0028	SHIM SET	3	2	HC0015	HEX HD, 3/8"-16 x 1.00"		
ITEM NO.	QTY.	PART NO.	DESCRIPTION																						
1	1	PEC0060	BEARING-RETAINER																						
2	1	PEC0028	SHIM SET																						
3	2	HC0015	HEX HD, 3/8"-16 x 1.00"																						
<div style="text-align: right; font-size: 24pt; font-weight: bold; margin-bottom: 20px;">PEM 009</div> <p style="text-align: center; margin-top: 20px;">NOTE: SHIM SET USED AS REQUIRED TO MAINTAIN PROPER GAP</p>																									
G																									

COMPUTER GENERATED BY

DATE: 03/29/01  
 DRAWN BY: KB  
 PART NUMBER: PEC\_SUB\_BEARING\_REIN\_OUTER  
 SHEET 1 OF 1

# 5.20 Power Frame Assembly-Section View


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	6	PEC0056	CROSSHEAD GUIDE
2	1	PEC0062	CRANKSHAFT
3	1	PEC0047	BEARING, INSIDE MAIN BEARING-FLOAT (600HP)
4	1	PEC0046	BEARING, INSIDE MAIN BEARING-FIXED (600HP)
5	3	PEC0057	CONNECTING ROD ASSEMBLY
6	3	PEC0055	CROSSHEAD
7	3	FEC0002	3" PLUNGER
8	3	PEC0013	CROSSHEAD PIN
9	3	FEC0004	PONY ROD STUD
10	3	PEC0021	RETAINER, WRIST PIN
11	3	FEC0046	DIAPHRAGM SEAL RETAINER
12	12	HC0122	SOC HD, 1/4"-20 x 0.50" FLAT HEAD
13	3	FEC0007	DIAPHRAM SEAL HOUSING
14	2	PEC0045	BEARING, OUTSIDE MAIN (600HP)
15	1	PEC0009	LUBE DRAIN, 3"NPT TANK FLANGE
16	6	PEC0027	BEARING RETAINER, INNER RACE
17	6	PEC0060	BEARING RETAINER
18	1	PEC0063	MAIN BEARING HOUSING, (600HP)
19	1	PEC0052	ROTOSEAL, LUBRICATOR
20	1	TC0094	TEE BODY, 1/2"NPT FFF
21	2	UC0050	BLANK PLUG, 1/2" NPT STD(SOCKET)
22	1	PEC0064	SPACER



DESCRIPTION  
POWER FRAME  
COMPLETE ASSEMBLY

DATE 03/26/01

DESIGNED BY LB

COMPUTER GENERATED BY  
  
 300 West Main Street  
 P.O. Box 1000  
 Dixie, North Carolina

DATE SHEET 1 OF 1

FIG. 0



# 5.40 Connecting Rod Assembly- Exploded View

1	2	3	4	5	6	7	8																																						
A	B	C	D	E	F	G																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ITEM NO.</th> <th style="width: 10%;">QTY.</th> <th style="width: 10%;">PART NO.</th> <th style="width: 70%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">HC0105</td> <td>DOWEL PIN, 3/8" x 1.50"</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">4</td> <td style="text-align: center;">pec0048</td> <td>CONNECTING ROD BOLT, (600HP)</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">HC0086</td> <td>HEX NUT, 5/8"-11 CASTELLATED</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">PEC0029</td> <td>BEARING</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">1</td> <td style="text-align: center;">PEC0044</td> <td>BEARING, CONNECTING ROD (600HP)</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">HC0088</td> <td>COTTER PIN</td> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">1</td> <td style="text-align: center;">pec0057B</td> <td>CONNECTING ROD</td> </tr> <tr> <td style="text-align: center;">8</td> <td style="text-align: center;">1</td> <td style="text-align: center;">pec0057A</td> <td>CONNECTING ROD</td> </tr> </tbody> </table>										ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	2	HC0105	DOWEL PIN, 3/8" x 1.50"	2	4	pec0048	CONNECTING ROD BOLT, (600HP)	3	4	HC0086	HEX NUT, 5/8"-11 CASTELLATED	4	1	PEC0029	BEARING	5	1	PEC0044	BEARING, CONNECTING ROD (600HP)	6	4	HC0088	COTTER PIN	7	1	pec0057B	CONNECTING ROD	8	1	pec0057A	CONNECTING ROD
ITEM NO.	QTY.	PART NO.	DESCRIPTION																																										
1	2	HC0105	DOWEL PIN, 3/8" x 1.50"																																										
2	4	pec0048	CONNECTING ROD BOLT, (600HP)																																										
3	4	HC0086	HEX NUT, 5/8"-11 CASTELLATED																																										
4	1	PEC0029	BEARING																																										
5	1	PEC0044	BEARING, CONNECTING ROD (600HP)																																										
6	4	HC0088	COTTER PIN																																										
7	1	pec0057B	CONNECTING ROD																																										
8	1	pec0057A	CONNECTING ROD																																										
<p>PEM 001</p> <p style="text-align: right;">COMPUTER GENERATED BY    <small>W. H. H. &amp; S. CO. INC.</small>  <small>1000 W. 10th Street</small>  <small>Waco, Texas 76787</small></p>																																													
<p>DESCRIPTION: CONNECTING ROD ASSEMBLY EXPLODED VIEW</p> <p>MATERIAL: MATERIALS WELDED TO SPECURE</p> <p>DESIGNED BY: KB</p> <p>DATE: 03/26/01</p> <p>PART NUMBER: PEC-SUB PEC0057</p> <p>WEIGHT: SHEET 1 OF 1</p> <p>REV: 0</p>																																													

# 5.50 Crosshead Assembly- Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION	7	8
1	2	HC0024	HEX HD, 1/2"-13 x 1.25"		
2	1	pec0021	RETAINER, WRIST PIN		
3	1	FEC0004	PONY ROD STUD		
4	1	PEC0013	CROSSHEAD PIN		
5	1	PEC0055	CROSSHEAD		

## PEM 008

FUNCTION CROSSHEAD ASSEMBLY EXPLODED WARNING/HAZARD/WEIGHT PROCEDURE	DRAWN BY KB	DATE 03/26/01	PART NUMBER PEC-SUB-CROSS-PLUNGER	SHEET 1 OF 1	REV 0
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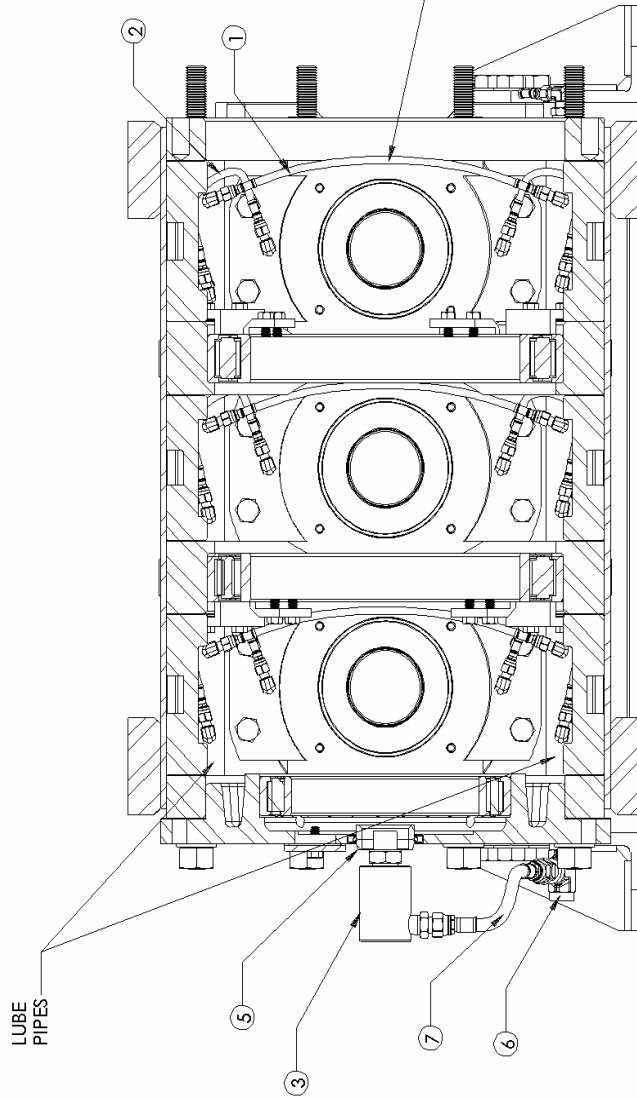
# 5.60 Diaphragm Seal Housing-Exploded View

1	2	3	4	5	6	7	8																												
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ITEM NO.	QTY.	PART NO.	DESCRIPTION																																
1	1	FEC0064	DIAPHRAGM PLATE 2.75"																																
2	2	FEC0067	SEAL, DIAPHRAGM 2.75"																																
3	1	FEC0070	DIAPHRAGM SEAL RETAINER, 2.75"																																
4	4	HC0004	HEX HD, 3/8"-16 x 0.75"																																
5	4	HC0122	SOC HD, 1/4"-20 x 0.50" FLAT HEAD																																
6	1	FEC0021	GASKET, DIAPHRAGM																																
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C	<p style="font-size: 24pt; font-weight: bold;">FEM-A 001</p>																																		
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E																																			
F																																			
G	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">                 DESCRIPTION                  DIAPHRAGM SEAL HOUSING                  MSI-600                  2.34 INCH                  WATER/HEAVY WELD PROCESSURE             </td> <td style="width: 20%;">                 DRAWN BY                  DY             </td> <td style="width: 20%;">                 DATE                  3/26/01             </td> </tr> <tr> <td colspan="3" style="text-align: center;">                 COMPUTER GENERATED BY  </td> </tr> <tr> <td>                 WEIGHT                  3.606 LBS.             </td> <td>                 PART NUMBER                  PTM-2.75-SEAL-HOUSING-EXPLODED             </td> <td>                 SHEET 1 OF 1             </td> </tr> </table>							DESCRIPTION DIAPHRAGM SEAL HOUSING MSI-600 2.34 INCH WATER/HEAVY WELD PROCESSURE	DRAWN BY DY	DATE 3/26/01	COMPUTER GENERATED BY 			WEIGHT 3.606 LBS.	PART NUMBER PTM-2.75-SEAL-HOUSING-EXPLODED	SHEET 1 OF 1																			
DESCRIPTION DIAPHRAGM SEAL HOUSING MSI-600 2.34 INCH WATER/HEAVY WELD PROCESSURE	DRAWN BY DY	DATE 3/26/01																																	
COMPUTER GENERATED BY 																																			
WEIGHT 3.606 LBS.	PART NUMBER PTM-2.75-SEAL-HOUSING-EXPLODED	SHEET 1 OF 1																																	

Note: See 5.10.2 through 5.10.5 for other sizes

# 5.70 Power Frame Lube Lines-Dual Lube Pipe

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	PEC0053	HOSE ASSEMBLY, LUBRICATOR (600HP) INTERNAL x 16.50"
2	6	PEC0054	HOSE ASSEMBLY, LUBRICATOR (600HP) INTERNAL x 9.50"
3	1	PEC0052	ROTOSEAL, LUBRICATOR (600HP & 1000HP)
4	2	UC0050	BLANK PLUG, 1/2" NPT STD(SOCKET)
5	1	PEC0064	SPACER, CRANKSHAFT MSI 600 & 1000
6	1	TC0094	TEE BODY, 1/2"NPT FFF
7	1	PEC0051	HOSE ASSEMBLY, LUBRICATOR (600HP) x 12"



ORDER COMPLETE LUBE ASSEMBLY AS PEC0050

POWER FRAME LUBE LINES  
DUAL LUBE PIPE

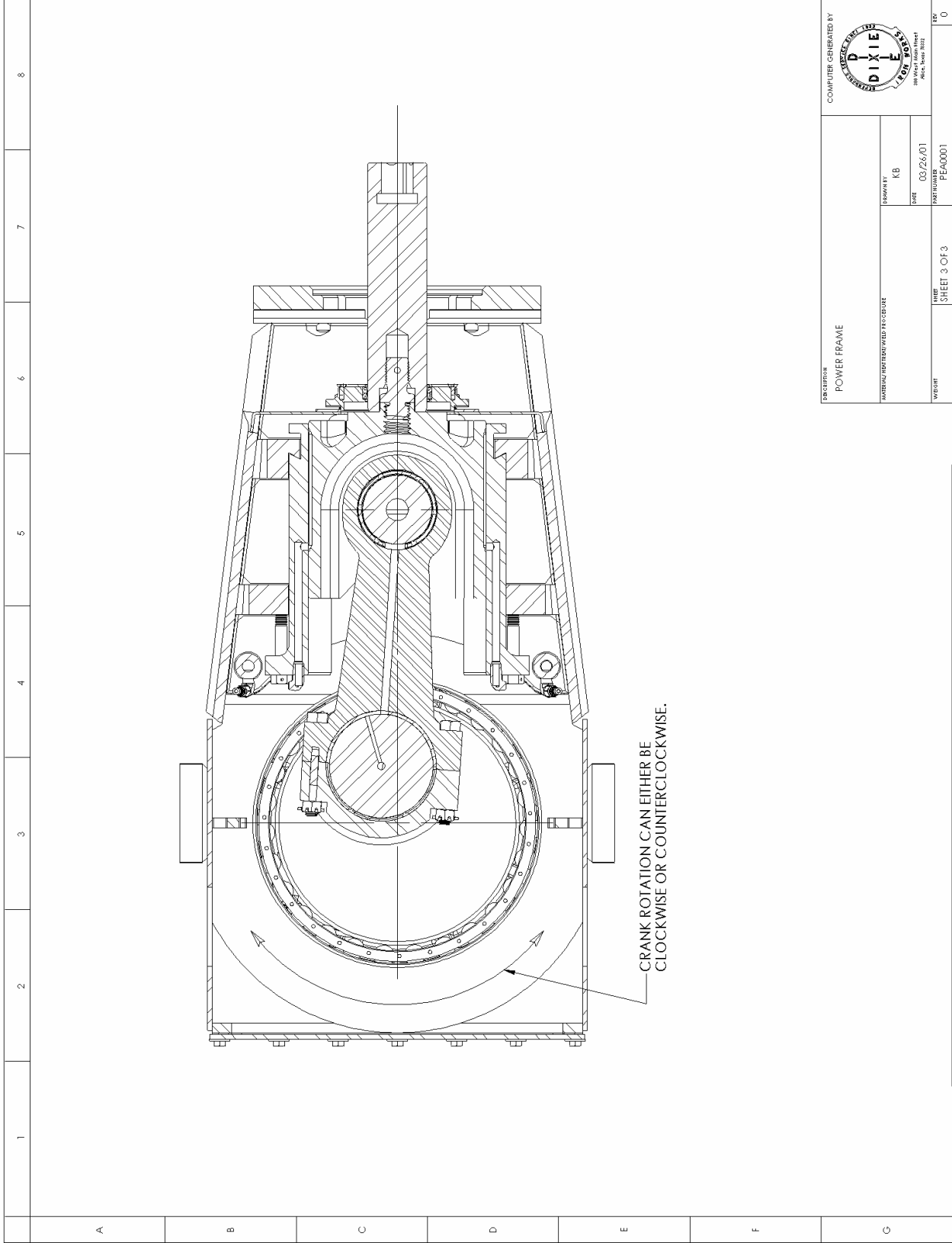
COMPUTER GENERATED BY  
DIXIE  
DIXIE ENGINEERING  
1000 W. 10TH STREET  
MCKEAN, MO. 64572

DATE: 03/26/01  
DRAWN BY: KB  
PART NUMBER: PEAC001


WEIGHT: SHEET 1 OF 1

REV: 0

# 5.80 Power Frame Crosshead & Crank Rotation



DESCRIPTION POWER FRAME		DRAWN BY KB		DATE 03/26/01	
MANUFACTURING PROCEDURE		PART NUMBER PEA0001		REV 0	
TWEIGHT		PAGE SHEET 3 OF 3		REV 0	

COMPUTER GENERATED BY  
  
 300 West 10th Street  
 JACKSON, MISSISSIPPI

# 6.10.1 Fluid End Assembly for 2.75 & 3.00 Plungers – Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0087	FLUID CYLINDER
2	3	PACKING ASSEMBLY	PACKING ASSEMBLY
3	3	FEC0094	VALVE STOP
4	2	FEC0089	DISCHARGE COVER
5	6	FEC0095	SEAL,SUCTION/DISCHARGE COVER
6	3	FEC0097	SUCTION COVER CAGE
7	3	FEC0088	SUCTION COVER
8	3	HC0132	RECESSED SOC HD, 1/2"-13 x 1.00"
9	1	FEC0096	GAGE CONNECTION
10	6	FEC0093	VALVE SPRING
11	6	FEC0092	VALVE SEAT
12	6	FEC0091	VALVE COMPLETE
13	1	FEC0028	SUCTION MANIFOLD
14	1	FEC0030	DISCHARGE FLG, 2" BALNK
15	2	FEC0014	SEAL, DISCHARGE FLANGE
16	8	HC0092	HEX NUT, 1"-8
17	8	HC0091	STUD, 1"-8 x 3.50" B7
18	12	HC0090	HEX HD, 3/4"-10 x 2.00"
19	3	OC0079	O-RING, SUCTION MANIFOLD
20	1	FEC0029	DISCHARGE FLANGE

DESCRIPTION	FLUID END ASSEMBLY 2.75" - 3" ANSI 600 WATER/WATERHEATED/STEAM PROCEDURE	WEIGHT	1460 LBS	SHEET	SHEET 1 OF 1	REV	0	
COMPUTER GENERATED BY	DIXIE		DATE	2/26/01	PART NUMBER	PTM-FA0001-EXPLODED	REV	0
DESIGNED BY	DY	DATE	2/26/01	PART NUMBER	PTM-FA0001-EXPLODED	REV	0	

### 6.10.2 Fluid End Assembly for 3.50, 4.00 & 4.50 Plungers – Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0001	FLUID CYLINDER
2	3	FEC0006	SUCTION COVER
3	1	FEC0011	GAGE CONNECTION
4	1	FEC0012	RETAINER NUT
5	3	FEC0015	SEAL/DISCHARGE COVER
6	3	FEC0019	VALVE STOP
7	6	FEC0016	VALVE SEAT
8	6	FEC0017	VALVE COMPLETE
9	6	FEC0003	VALVE SPRING
10	2	FEC0005	DISCHARGE COVER
11	3	FEC0013	SEAL,SUCTION COVER
12	1	FEC0028	SUCTION MANIFOLD
13	8	HC0092	HEX NUT, 1"-8
14	8	HC0091	STUD, 1"-8 x 3.50" B7
15	12	HC0090	HEX HD, 3/4"-10 x 2.00"
16	1	FEC0030	DISHCHARGE FLG, 2" BALNK
17	2	FEC0014	SEAL, DISCHARGE FLANGE
18	1	FEC0029	DISCHARGE FLANGE
19	3	OC0079	O-RING, SUCTION MANIFOLD
20	3		PACKING ASSEMBLY

DESCRIPTION	FLUID END ASSEMBLY
	3 1/2" - 4 1/2"
	ANSI 600
	WATER/W/HEAT/STEAM/SEAL
WEIGHT	13.70 LBS.
PRICE	SHEET 1 OF 1
REV	0

COMPUTER GENERATED BY  
**DIXIE**  
 18 WILSON STREET  
 FAYETTEVILLE, NC 28404  
 PHONE: 704/335-1111

DESIGNED BY  
 DRAWN BY  
 DATE 3/22/01  
 PART NUMBER FEA0003

FEM 002

# 6.20.1 Packing Assembly 2.75 Plunger-Exploded View

1	2	3	4	5	6	7	8		
A									
B									
C									
D									
E									
F									
G									

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0090	ADAPTER, FLUID END 2-3/4" - 3"
2	1	FEC0065	PACKING NUT 2.75"
3	1	FEC0068	LANTERN RING
4	1	FEC0066	ADAPTER, STUFFING BOX 2.75
5	2	OC0077	PAR-BACK, 2.75" STUFFING BOX - NUT SIDE
6	2	OC0076	O-RING, 2.75" STUFFING BOX - NUT SIDE
7	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE
8	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE
9	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)
10	1	FEC0069	PACKING SET, 2.75" STD

## FEM-A 002

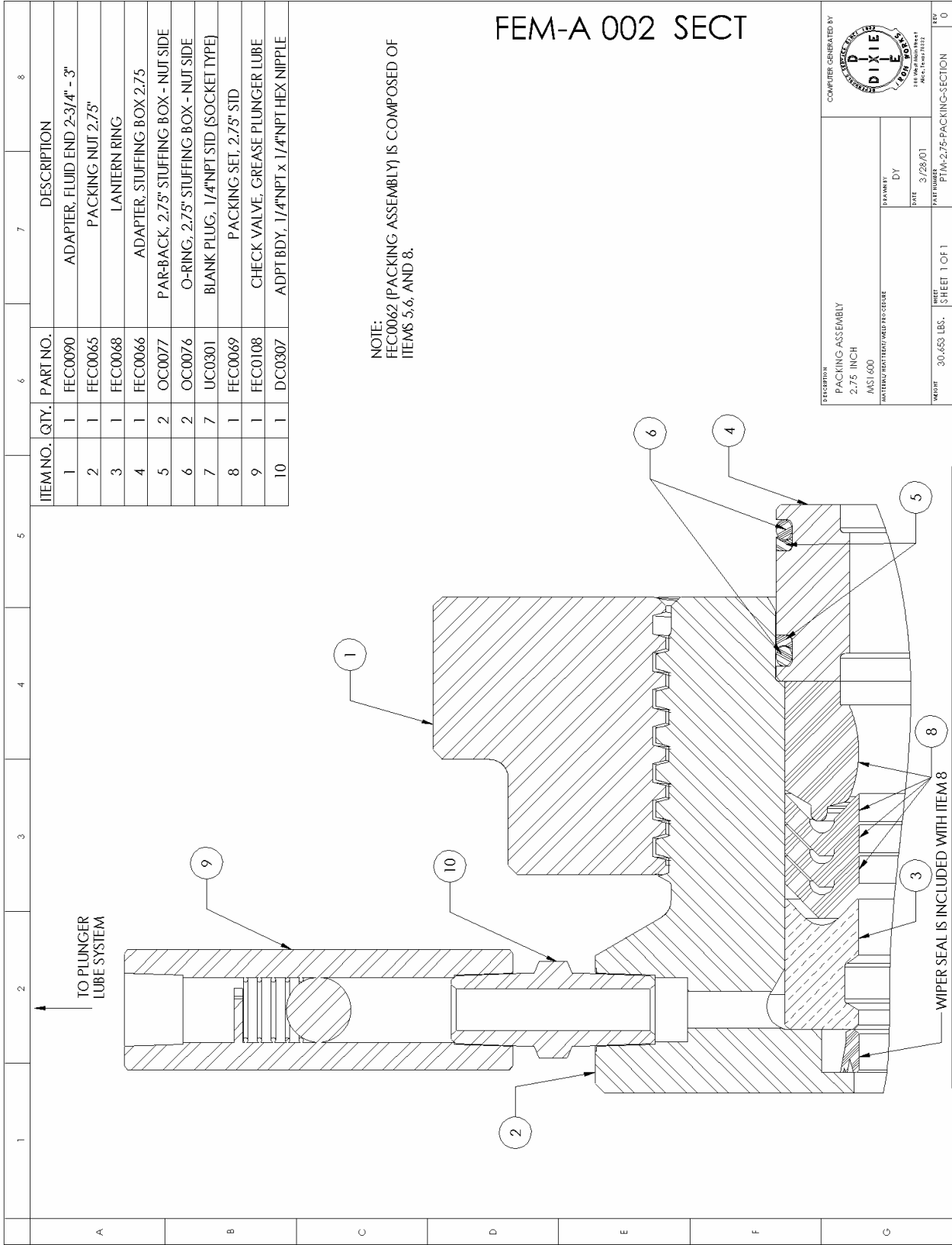
NOTE:  
THIS ITEM IS INCLUDED WITH ITEM 8

<p>DESCRIPTION PACKING ASSEMBLY 2.75 INCH ANSI 600 WATER/W/HEAT/HEAVY/WEAR PROCEDURE</p>	<p>COMPUTER GENERATED BY <b>DIXIE</b> 1800 Park Hill Street Lafayette, LA 70503 337-485-3000</p>	<p>DATE 3/28/01 DRAWN BY DY PART NUMBER PTM-2.75-PACKING-EXPLODED WEIGHT 30.455 LBS. SHEET 1 OF 1 REV 0</p>
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## 6.20.2 Packing Assembly 2.75 Plunger-Section View



### 6.20.4 Packing Assembly 3.00 Plunger-Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0010	ADAPTER, STUFFING BOX
2	1	FEC0008	PACKING NUT 3.00"
3	1	FEC0090	ADAPTER, FLUID END 2-3/4" - 3"
4	1	FEC0032	LANTERN RING
5	1	FEC0033	PACKING SET, 3" STD
6	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)
7	1	OC0076	O-RING, 2.75" STUFFING BOX - NUT SIDE
8	1	OC0077	PAR-BACK, 2.75" STUFFING BOX - NUT SIDE
9	1	OC0085	O-RING, 3" STUFFING BOX NUT SIDE
10	1	OC0064	PAR-BACK, 3" STUFFING BOX - NUT SIDE
12	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE
13	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE
9	1	OC0085	O-RING, 3" STUFFING BOX NUT SIDE

FEM-B 002

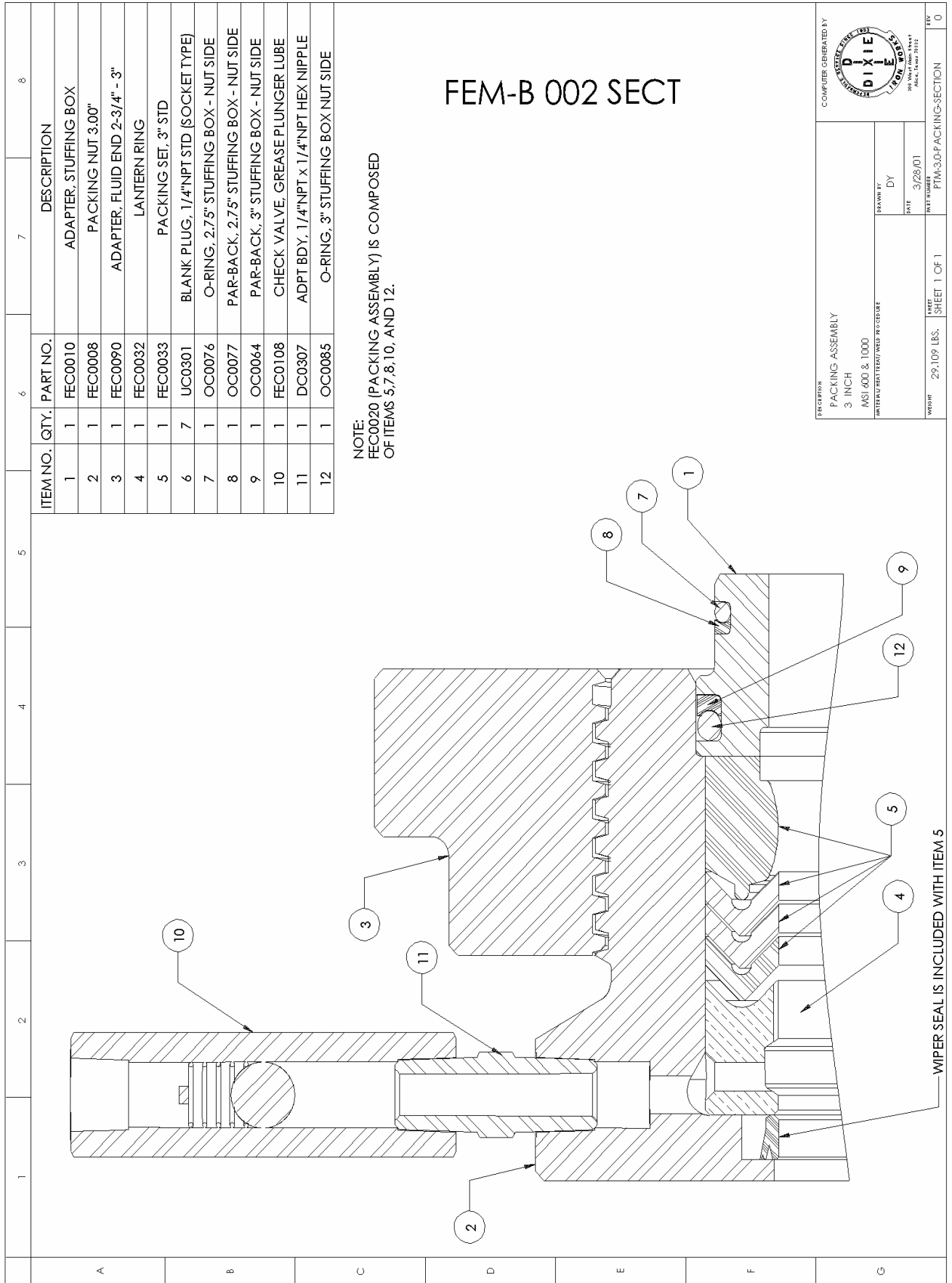
NOTE:  
THIS ITEM IS INCLUDED WITH ITEM 5

COMPUTER GENERATED BY  
**DIXIE**  
PREPARED BY: LBS  
DATE: 3/28/01  
DRAWN BY: DY  
PART NUMBER: PTM-3.0-PACKING-EXPLODED

DESCRIPTION: PACKING ASSEMBLY  
3 INCH  
MSI 600 & 1000  
WATER/HEAT TREAT/WEED PROCEDURE

WEIGHT: 29.109 LBS. SHEET: 1 OF 1 REV: 0

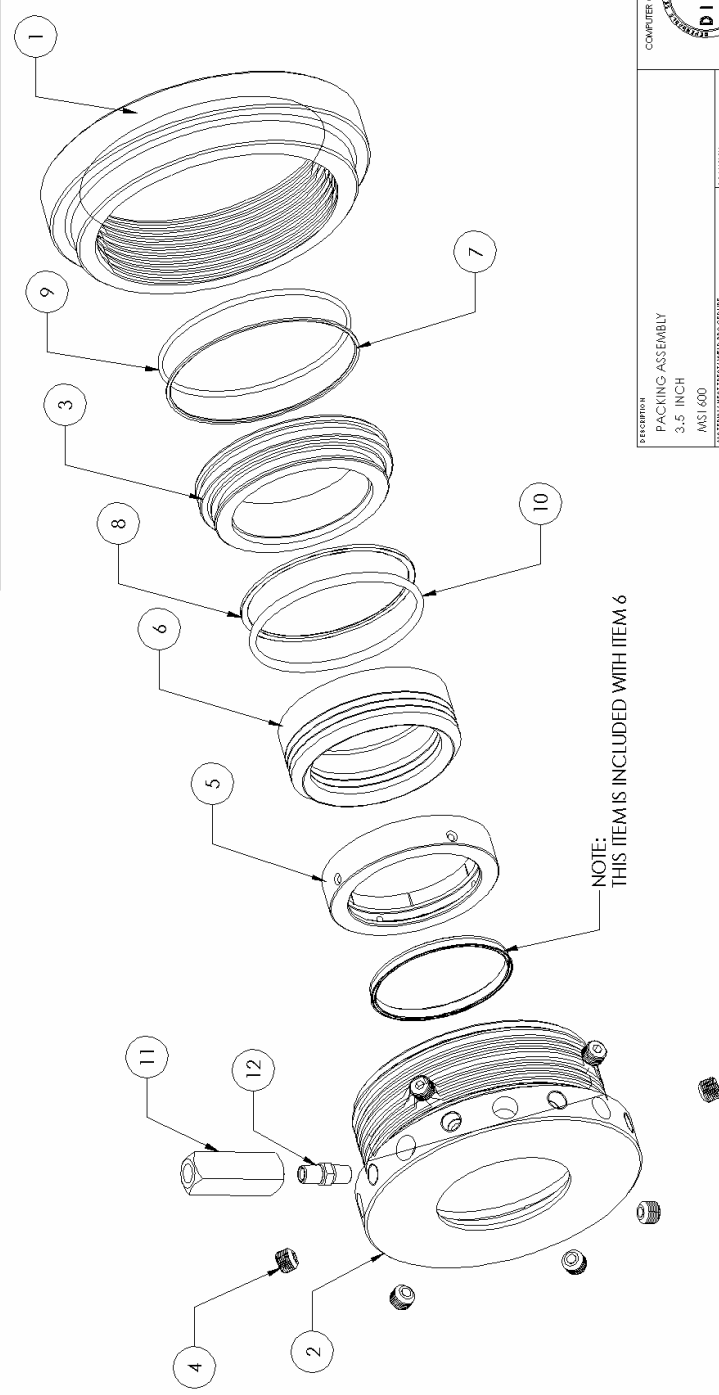
### 6.20.4 Packing Assembly 3.00 Plunger-Section View



# 6.20.5 Packing Assembly 3.50 Plunger-Exploded View

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0009	ADAPTER, FLUID END
2	1	FEC0052	3.50" PACKING NUT
3	1	FEC0058	ADAPTER, STUFFING BOX 3.50
4	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)
5	1	FEC0050	LARIERN RING
6	1	FEC0054	PACKING SET, 3.5" STD
7	1	OC0066	PAR-BACK, 3.5"-4.5" STUFFING BOX - F.E. SIDE
8	1	OC0068	PAR-BACK, 3.5" STUFFING BOX - NUT SIDE
9	1	OC0065	O-RING, 2.75"-4.5" STUFFING BOX - F.E. SIDE
10	1	OC0067	O-RING, 3.5" STUFFING BOX - NUT SIDE
11	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE
12	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE

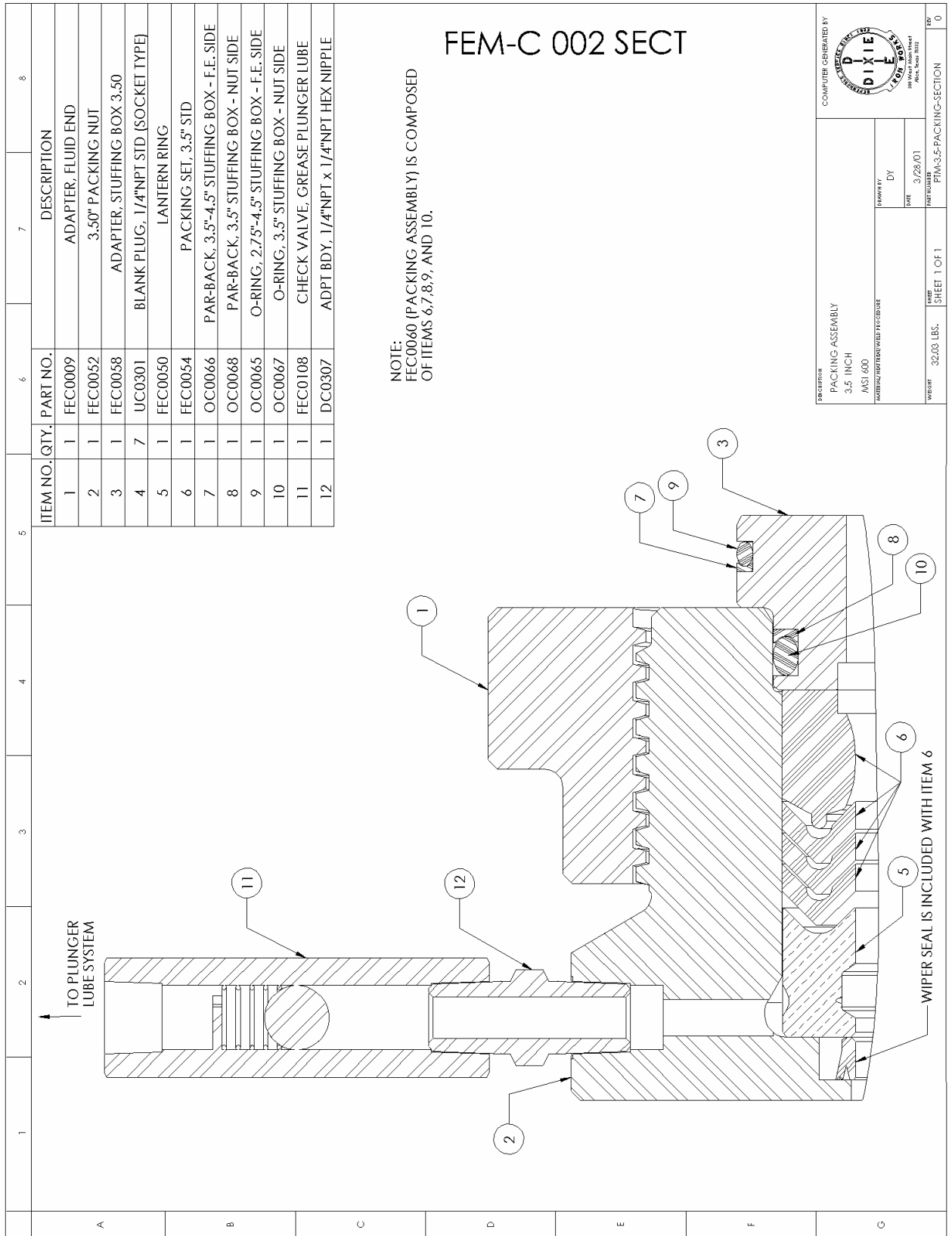
FEM-C 002



NOTE:  
THIS ITEM IS INCLUDED WITH ITEM 6

SPECIFICATION PACKING ASSEMBLY 3.5 INCH ANSI 600 MATERIAL: HEAT TREATED 304 STAINLESS STEEL		COMPUTER GENERATED BY  DATE: 3/28/01 PART NUMBER: PTM-3.5-PACKING-EXPLODED	
DRAWN BY: DY		WEIGHT: 32.03 LBS.	
SHEET: 1 OF 1		REVISION: 0	

### 6.20.6 Packing Assembly 3.50 Plunger-Section View



**DESCRIPTION**

PACKING ASSEMBLY  
3.5 INCH  
ANSI 600  
MATERIAL: WATERWALD PEG SEURE

**WEIGHT** 32.03 LBS.

**COMPUTER GENERATED BY**

**DIXIE**  
PACIFIC TOOL & DIE  
1000 W. 10th Street  
Mesa, Arizona 85201

**DATE** 3/28/01

**DRAWN BY** DY

**PART NUMBER** PTM-3.5-PACKING-SECTION

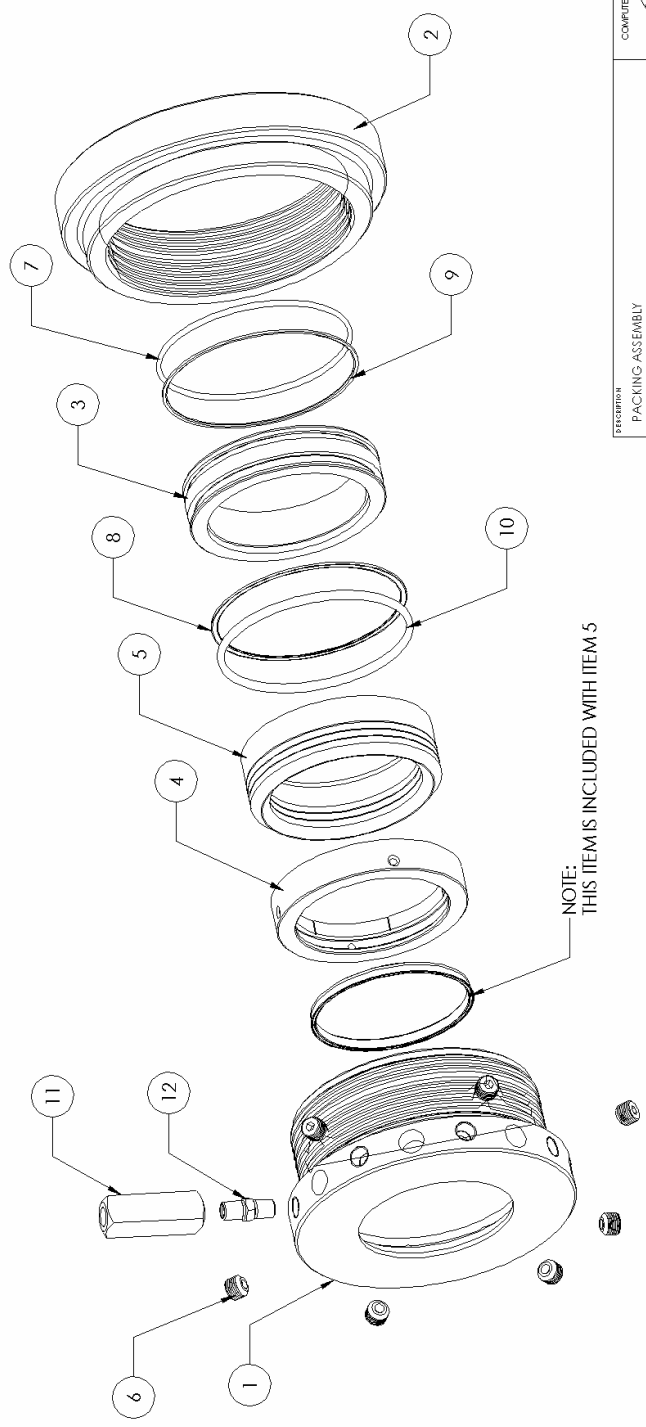
**SHEET** 1 OF 1

**REV** 0

# 6.20.7 Packing Assembly 4.00 Plunger-Exploded View


ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	FEC0053	4.00" PACKING NUT
2	1	FEC0009	ADAPTER, FLUID END
3	1	FEC0059	ADAPTER, STUFFING BOX
4	1	FEC0051	LANTERN RING
5	1	FEC0055	PACKING SET, 4" STD
6	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)
7	1	OC0065	O-RING, 2.75"-4.5" STUFFING BOX - F.E. SIDE
8	1	OC0070	PAR-BACK, 3.5"-4.5" STUFFING BOX - F.E. SIDE
9	1	OC0066	PAR-BACK, 3.5"-4.5" STUFFING BOX - F.E. SIDE
10	1	OC0069	O-RING, 4" STUFFING BOX, NUT SIDE
11	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE
12	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE

FEM-D 002



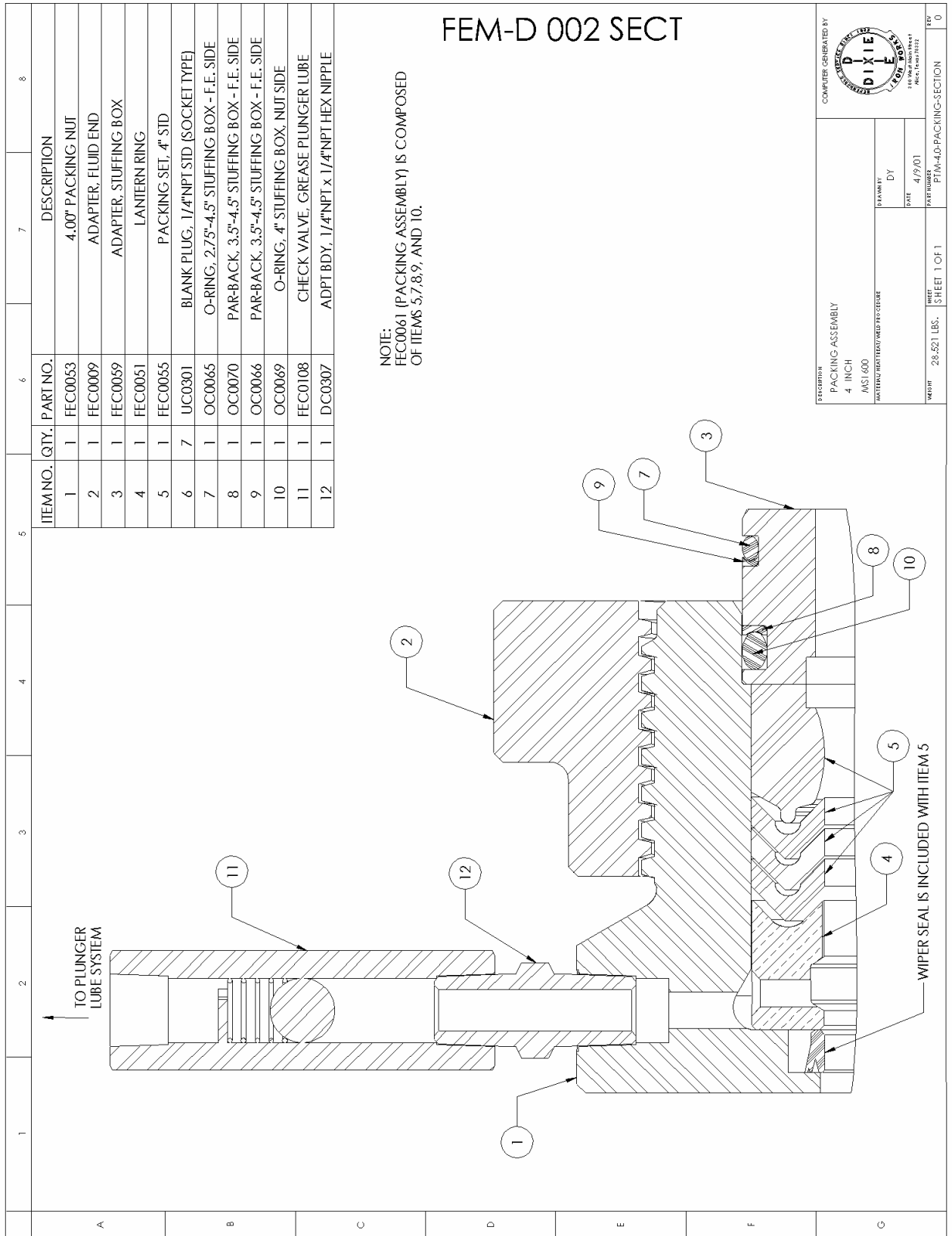
NOTE:  
THIS ITEM IS INCLUDED WITH ITEM 5

SPECIFICATION  
 PACKING ASSEMBLY  
 4 INCH  
 ANSI 600  
 MATERIAL: HEAT TREATED 316L SS

COMPUTER GENERATED BY  
  
 DATE: 4/9/01  
 PART NUMBER: PTM-4.0-PACKING-EXPLODED

WEIGHT: 28.521 LBS.  
 SHEET: 1 OF 1  
 REV: 0

# 6.20.8 Packing Assembly 4.00 Plunger-Section View

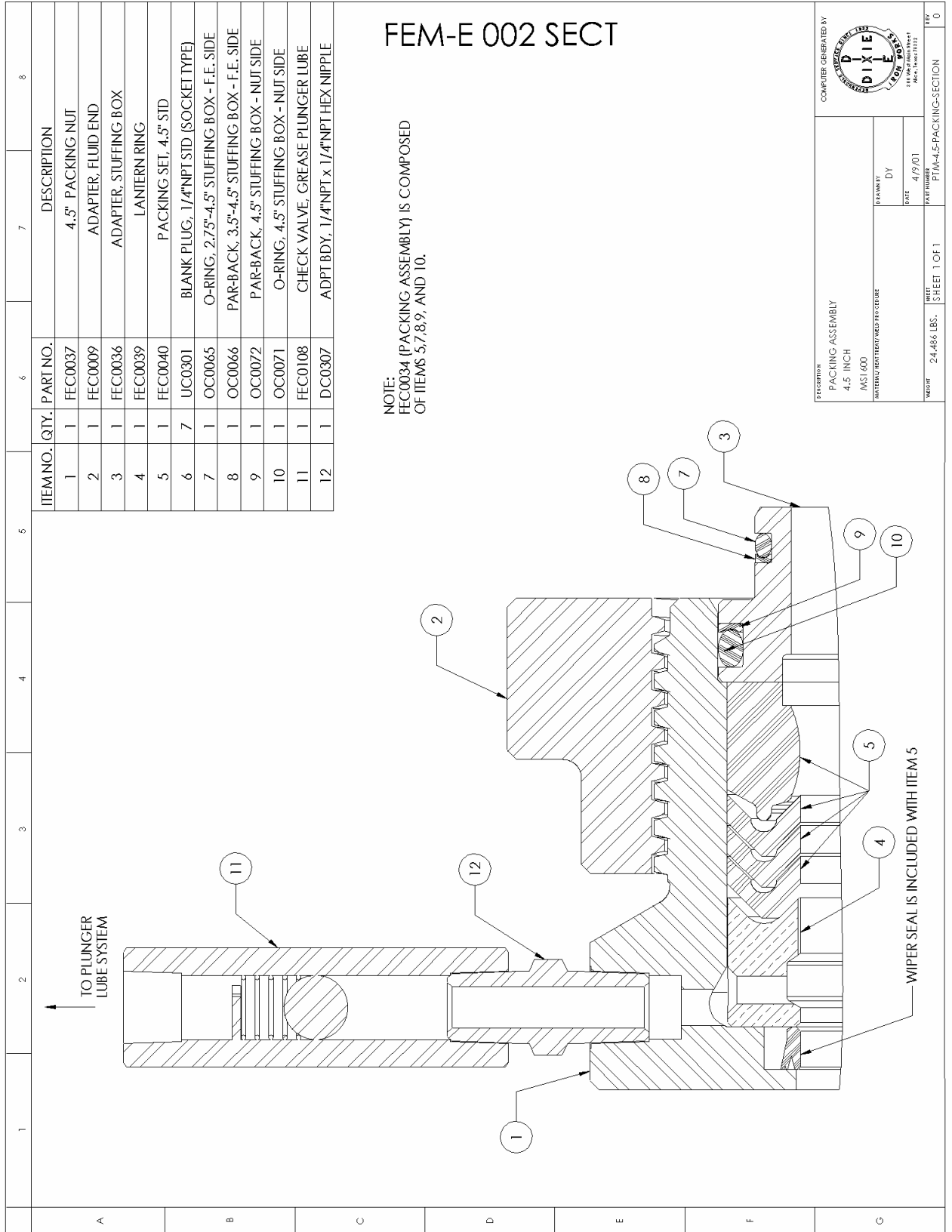


# 6.20.9 Packing Assembly 4.50 Plunger-Exploded View

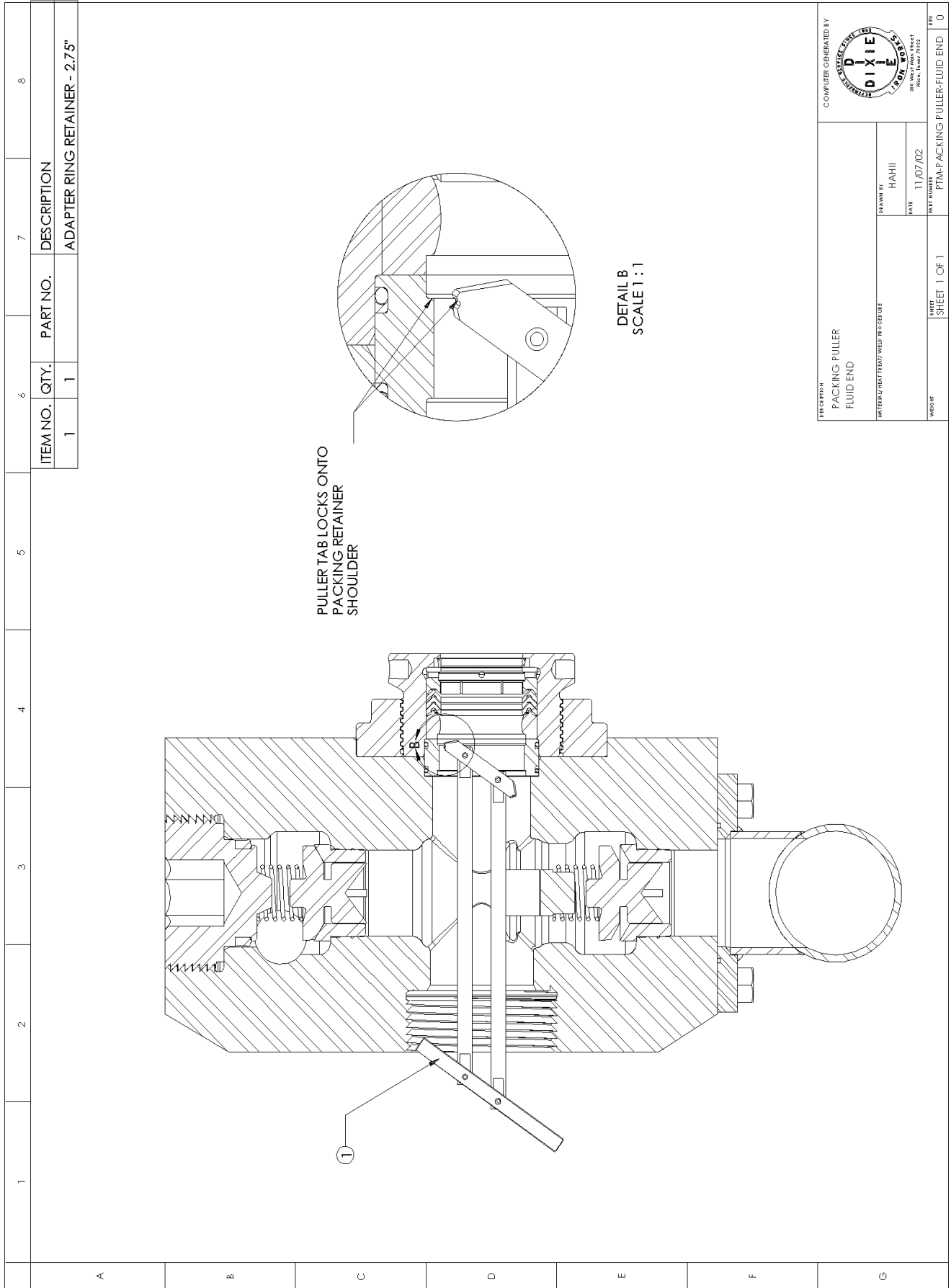
1	2	3	4	5	6	7	8																																																					
A	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">ITEM NO.</th> <th style="width:10%;">QTY.</th> <th style="width:10%;">PART NO.</th> <th style="width:70%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>FEC0037</td> <td>4.5" PACKING NUT</td> </tr> <tr> <td>2</td> <td>1</td> <td>FEC0009</td> <td>ADAPTER, FLUID END</td> </tr> <tr> <td>3</td> <td>1</td> <td>FEC0036</td> <td>ADAPTER, STUFFING BOX</td> </tr> <tr> <td>4</td> <td>1</td> <td>FEC0039</td> <td>LANIERN RING</td> </tr> <tr> <td>5</td> <td>1</td> <td>FEC0040</td> <td>PACKING SET, 4.5" STD</td> </tr> <tr> <td>6</td> <td>7</td> <td>UC0301</td> <td>BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)</td> </tr> <tr> <td>7</td> <td>1</td> <td>OC0065</td> <td>O-RING, 2.75"-4.5" STUFFING BOX - F.E. SIDE</td> </tr> <tr> <td>8</td> <td>1</td> <td>OC0066</td> <td>PAR-BACK, 3.5"-4.5" STUFFING BOX - F.E. SIDE</td> </tr> <tr> <td>9</td> <td>1</td> <td>OC0072</td> <td>PAR-BACK, 4.5" STUFFING BOX - NUT SIDE</td> </tr> <tr> <td>10</td> <td>1</td> <td>OC0071</td> <td>O-RING, 4.5" STUFFING BOX - NUT SIDE</td> </tr> <tr> <td>11</td> <td>1</td> <td>FEC0108</td> <td>CHECK VALVE, GREASE PLUNGER LUBE</td> </tr> <tr> <td>12</td> <td>1</td> <td>DC0307</td> <td>ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE</td> </tr> </tbody> </table>						ITEM NO.	QTY.	PART NO.	DESCRIPTION	1	1	FEC0037	4.5" PACKING NUT	2	1	FEC0009	ADAPTER, FLUID END	3	1	FEC0036	ADAPTER, STUFFING BOX	4	1	FEC0039	LANIERN RING	5	1	FEC0040	PACKING SET, 4.5" STD	6	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)	7	1	OC0065	O-RING, 2.75"-4.5" STUFFING BOX - F.E. SIDE	8	1	OC0066	PAR-BACK, 3.5"-4.5" STUFFING BOX - F.E. SIDE	9	1	OC0072	PAR-BACK, 4.5" STUFFING BOX - NUT SIDE	10	1	OC0071	O-RING, 4.5" STUFFING BOX - NUT SIDE	11	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE	12	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE		
ITEM NO.	QTY.	PART NO.	DESCRIPTION																																																									
1	1	FEC0037	4.5" PACKING NUT																																																									
2	1	FEC0009	ADAPTER, FLUID END																																																									
3	1	FEC0036	ADAPTER, STUFFING BOX																																																									
4	1	FEC0039	LANIERN RING																																																									
5	1	FEC0040	PACKING SET, 4.5" STD																																																									
6	7	UC0301	BLANK PLUG, 1/4"NPT STD (SOCKET TYPE)																																																									
7	1	OC0065	O-RING, 2.75"-4.5" STUFFING BOX - F.E. SIDE																																																									
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11	1	FEC0108	CHECK VALVE, GREASE PLUNGER LUBE																																																									
12	1	DC0307	ADPT BDY, 1/4"NPT x 1/4"NPT HEX NIPPLE																																																									
B	<p style="text-align: right;">NOTE: THIS ITEM IS INCLUDED WITH ITEM 5</p>																																																											
C	<p style="text-align: center;"><b>FEM-E 002</b></p>																																																											
D	<p style="text-align: center;">COMPUTER GENERATED BY</p>																																																											
E	<p style="text-align: center;">SPECIFICATION</p> <p style="text-align: center;">PACKING ASSEMBLY 4.5 INCH ANSI 600 MATERIAL: HEAT TREATED 316L SS</p> <p style="text-align: center;">DRAWN BY: DY DATE: 4/9/01</p>																																																											
F	<p style="text-align: center;">PART NUMBER: PTM-4.5-PACKING-EXPLODED</p>																																																											
G	<p style="text-align: center;">WEIGHT: 24.486 LBS.</p> <p style="text-align: center;">SHEET: 1 OF 1</p> <p style="text-align: center;">REV: 0</p>																																																											



# 6.20.10 Packing Assembly 4.50 Plunger-Section View



# 6.31 Packing Tool Remover in Fluid End

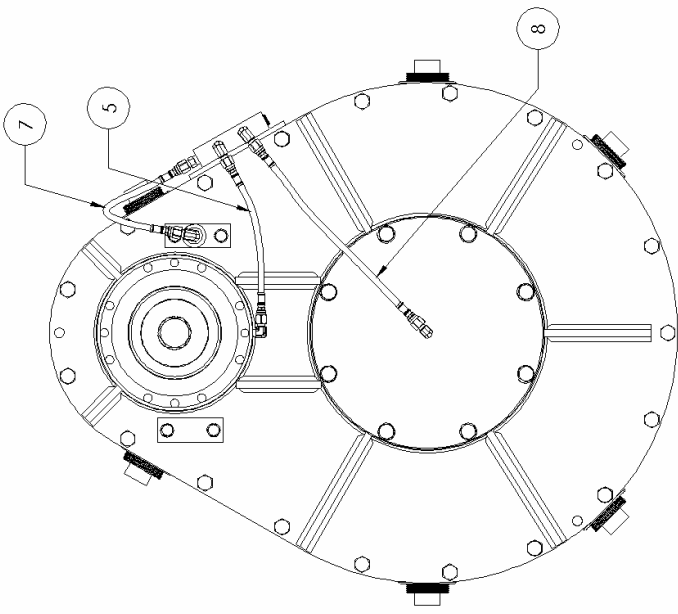
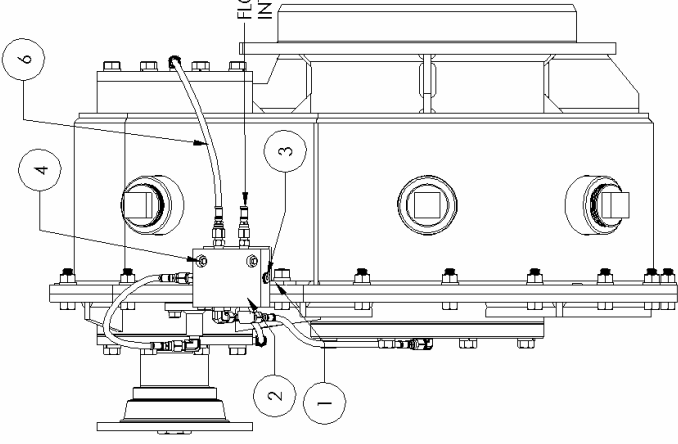


DESCRIPTION		COMPUTER GENERATED BY	
PACKING PULLER FLUID END			
MATERIAL: 4140 TREAT WELD PROCEDURE		DRAWN BY	HAHII
		DATE	11/07/02
		DRAWN NUMBER	
WEIGHT	SHEET	PTM-PACKING PULLER-FLUID END	
	SHEET 1 OF 1		
		REV 0	

# 7.20 Gear Box Lube Lines

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	GRC0045	MANIFOLD BRACKET
2	1	GRC0044	MANIFOLD BLOCK, 1/4"NPT x 6
3	1	UC0301	BLANK PLUG, 1/4"NPT STD. (SOCKET TYPE)
4	2	HC0054	S.O.C. HD, 3/8"-16 x 0.75"
5	1	GRC0030	HOSE ASSEMBLY, PINION RETAINER (600HP) x 9.5"
6	1	GRC0029	HOSE ASSEMBLY, PINION CAP (600HP) x 15"
7	1	GRC0028	HOSE ASSEMBLY, LUBE PIPE (600HP) x 10"
8	1	GRC0031	HOSE ASSEMBLY, BEARING COVER (600HP) x 13.5"





ORDER COMPLETE LUBE ASSEMBLY AS GRC0019

DESCRIPTION: GEAR REDUCER LUBE LINES

WEIGHT: 908 LBS.

PRICE: SHEET 1 OF 1

COMPUTER GENERATED BY: 

DRAWN BY: DY

DATE: 5/8/01

PART NUMBER: C-FA0001

REV: 0

