



**NOTES:**

1. MATERIALS & CONSTRUCTION PER ASME SECTION II, SECTION V, & SECTION VIII-DIVISION 1, 2004 EDITION, 2005 ADDENDUM.
2. ALL WELDERS & WELDING PROCEDURES ARE CERTIFIED IN ACCORDANCE WITH ASME SECTION IX.
3. VESSEL IS MANUFACTURED IN ACCORDANCE WITH ASME BPE-2002.
4. SEE NAMEPLATE DETAILS FOR CODE STAMPING REQUIREMENTS, (REF. CODE CASE #2519).
5. ALL OROUGE & BUTT WELDS TO BE FULL PENETRATION UNLESS NOTED OTHERWISE.
6. VESSEL IS EXEMPT FROM IMPACT TESTING PER USA-SICG (4) & (6).
7. NATIONAL BOARD NUMBER TO BE ASSIGNED AT VESSEL COMPLETION.
8. YEAR IN WHICH COMPLIANCE WITH ALL CODE REQUIREMENTS HAS BEEN MET TO BE STAMPED IN THIS PLACE.

**ASME NAMEPLATE CUSTOMER DATA PLATE FELDMER LABEL**

**SPECIAL PER JOB REQUIREMENTS:**

40. PROVIDE (3) SETS OF FELDMER 1/2" STATIC SPRAY BALLS PER "SPRAY BALLS DETAIL".
41. PROVIDE (1) SPARE GASKET FOR ALL "T" TUBES, SPRAY BALLS, SIGHT/SIGHT GLASSES, "SPARE" NOZZLES & MANWAY O-RING.
42. ALL NOZZLES WILL BE COVERED WITH 316L SS CAPS W/CLAMP & GASKET FOR SHIPMENT.

**FELDMER SUPPLIED EQUIPMENT**

53. 2" JM-CANTY SIGHT GLASS, C-276, BOROSILICATE GLASS, PART # C-276-2FVTR150-FL, MTR'S PROVIDED.
54. 4" JM-CANTY SIGHT GLASS, C-276, BOROSILICATE GLASS, PART # C-276-4FVTR150-FL, MTR'S PROVIDED.

INTERNAL FINISH SPECIFICATION:	
MATERIAL:	MECHANICALLY POLISH TO A FINAL FINISH NOT TO EXCEED 20 Ra.
WELDS:	MECHANICALLY POLISH FLUSH & SMOOTH TO A FINAL FINISH NOT TO EXCEED 20 Ra.
EXTERNAL FINISH SPECIFICATION:	
MATERIAL:	MECHANICALLY POLISH TO A FINAL FINISH NOT TO EXCEED 35 Ra.
WELDS:	GROUND AND POLISHED SMOOTH (NOT FLUSH) TO A FINAL FINISH NOT TO EXCEED 35 Ra EXCEPT AT SIDE LUG JUNCTIONS WHICH ARE TO BE WIRE BRUSHED.
RADIOGRAPHIC TESTING	
SHELL:	NONE REQ'D
HEADS:	SPOT
JOINT EFFICIENCY:	0.70
JOINT EFFICIENCY:	0.85
TESTING PRESSURES:	
VESEL:	68 PSIG
JACKET:	N/A
WEIGHTS:	
EMPTY VESSEL:	28,570 LBS
40,000 L CAPACITY:	116,707 LBS
46,496.5 L CAPACITY:	131,022 LBS
USING S.G.=1.0	
WELDING WIRE SPECIFICATIONS:	
SS TO SS STAW (NO)	ER316L WIRE
SS TO SS STAW (MIG)	ER316L WIRE
SS TO SS STAW (FLUX CORE)	ER316L WIRE
WELDING SPECIFICATIONS:	
LISTED SPECS. ARE APPROVED FOR USE UNLESS OTHERWISE NOTED ON THIS DRAWING	
WIS101A R3 (GTAW)	WIS201 R2 (FCAW)
WIS101A R1 (GTAW)	WIS111 R3 (CEAM)
WIS102B R2 (GTAW)	CS900 R8 (SEAM)

**NOTE #7**

CERTIFIED BY FELDMER EQUIPMENT, INC. STRACUSE, NEW YORK, USA

VESEL MAMP 50 PSI AT 350 °F  
 INTERNAL MAMP FV PSI AT 350 °F  
 VESSEL MDMT -20 °F AT 50°FV PSI  
 JACKET MAMP X X PSI AT X X °F  
 EXTERNAL MAMP X X PSI AT X X °F  
 JACKET MDMT X X °F AT X X PSI  
 YEAR BUILT 2007 SERIAL NO. S57606  
 TAG NUMBER 25011-1-05  
 MOC SHELL 316L MOC JACKET XXXX  
 MADE IN THE UNITED STATES OF AMERICA

**ASME NAMEPLATE STAMPING**

CLIENT NAME: AMGEN INC.  
 PROJECT NAME: AHL 7X EXPANSION  
 LOCATION: JUNCOS, PUERTO RICO  
 PROJECT NUMBER: 63KA5901  
 P.O. NUMBER: 653112  
 EQUIPMENT NUMBER: 25011-1-06  
 M.O.C.: 316L/304L  
 WORKING VOLUME: 40,000 LITERS  
 TOTAL VOLUME: 46,496.5 LITERS  
 SHELL THICKNESS: 0.50 INCHES  
 TOP HEAD THICKNESS: 0.44 INCHES  
 BOTTOM HEAD THICKNESS: 0.50 INCHES  
 INSIDE DIAMETER: 114.0 INCHES

**CUSTOMER DATAPLATE**

BOTTOM TAN. LINE: 2,006 LITERS  
 TOP TAN. LINE: 44,491 LITERS  
 TOTAL VOLUME: 46,496.5 LITERS  
 WORKING VOLUME: 40,000 LITERS

**VOLUME DATA**

NOZZLE	SIZE	DESCRIPTION	SERVICE
D1	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR I1
A11	3"	SANITARY CLAMP FERRULE W/ 3" NO-FOAM "J" TUBE INLET W/CAP, CLAMP & GASKET (SEE NOTE #41 & #42)	PUR LOOP 1 RETURN
D2	4"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR I2
A2	2 1/2"	SANITARY CLAMP FERRULE W/ 2 1/2" NO-FOAM "J" TUBE INLET W/CAP, CLAMP & GASKET (SEE NOTE #41 & #42)	PUR LOOP 2 RETURN
E1	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR B1
B1	1 1/2"	SANITARY CLAMP FERRULE W/ 1" DOWN TUBE, 2 1/2" DIA. SPRAY BALL ASSEMBLY, CAP, CLAMP, & GASKET (SEE NOTES #40, #41 & #42)	PUR LOOP 2 RETURN
E2	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR B2
B2	1 1/2"	SANITARY CLAMP FERRULE W/ 1" DOWN TUBE, 2 1/2" DIA. SPRAY BALL ASSEMBLY, CAP, CLAMP, & GASKET (SEE NOTES #40, #41 & #42)	PUR LOOP 2 RETURN
E3	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR B3
B3	1 1/2"	SANITARY CLAMP FERRULE W/ 1" DOWN TUBE, 2 1/2" DIA. SPRAY BALL ASSEMBLY, CAP, CLAMP, & GASKET (SEE NOTES #40, #41 & #42)	PUR LOOP 2 RETURN
E4	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	MOUNT FOR B4
B4	1 1/2"	SANITARY CLAMP FERRULE W/ 1" DOWN TUBE, 2 1/2" DIA. SPRAY BALL ASSEMBLY, CAP, CLAMP, & GASKET (SEE NOTES #40, #41 & #42)	PUR LOOP 2 RETURN
G1	4"	HEAVY WALL SANITARY CLAMP FERRULE W/ 4" JM CANTY SIGHT GLASS, CLAMP & GASKET (SEE NOTES #54, #41 & #42)	SIGHT PORT
G2	2"	HEAVY WALL SANITARY CLAMP FERRULE W/ 2" JM CANTY SIGHT GLASS, CLAMP & GASKET (LIGHT BY OTHERS) (SEE NOTES #53, #41 & #42)	LIGHT PORT
A13	2"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	PUR INLET
A14	2"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	PUR INLET
L1	2"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	LEVEL (OP)
L2	-	LEVEL SHELL FOR ROSEMOUNT MODEL# 1199-0061-0001 (1 1/4" THK., SHORT)	LEVEL (OP)
M	24"	FELDMER ASME FABRICATED MANWAY (O-RING STYLE) W/ (9) KNOBS & SPRING ASSISTED HINGE (O-RING #240727425) (SEE NOTE #41)	MANWAY
O	8"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	OUTLET
P1	2"	HEAVY WALL SANITARY CLAMP FERRULE (PRESSURE TRANSMITTER BY OTHERS) (SEE NOTE #42)	PRESSURE TRANSMITTER
P2	2"	HEAVY WALL SANITARY CLAMP FERRULE (PRESSURE GAUGE BY OTHERS) (SEE NOTE #42)	PRESSURE GAUGE
R	2"	HEAVY WALL SANITARY CLAMP FERRULE (RUPTURE DISC BY OTHERS) (SEE NOTE #42)	RUPTURE DISC
S1	6"	HEAVY WALL SANITARY CLAMP FERRULE W/ CAP, CLAMP & GASKET (SEE NOTE #41 & #42)	SPARE
S2	4"	HEAVY WALL SANITARY CLAMP FERRULE W/ CAP, CLAMP & GASKET (SEE NOTE #41 & #42)	SPARE
S3	3"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	CLEAN STEAM SUPPLY
T	1 1/2"	1-3/8" DIA. "BURNS ENGINEERING" PART # P-12148-1L-MED4 - 1/2" NPT x "U" = 3 1/4" x 0.250" BORE x 10 1/8" OAL	THERMOWELL
V	2"	HEAVY WALL SANITARY CLAMP FERRULE (SEE NOTE #42)	VENT

**DESIGN DATA**

VESEL NOMINAL CAPACITY: 40,000 LITERS | SPECIFIC GRAVITY: 1.0 | CORROSION ALLOWANCE: NONE

SHELL DESIGN CONDITIONS:  
 PRESSURE: 50 PSIG / FV  
 MAX. TEMP.: 350 °F (177 °C)  
 MIN. TEMP.: -20 °F (-28.9 °C)

SHELL OPERATING CONDITIONS:  
 PRESSURE: 20 PSIG / FV  
 MAX. TEMP.: 250 °F (121 °C)  
 MIN. TEMP.: -20 °F (-28.9 °C)

VESEL MATERIAL:	SPEC.	GRADE	THICKNESS/CLASS	NOTES
SHELL:	SA-240	316L	1/2"	114" ID x 251" LG
TOP HEAD (ASME FAD)	SA-240	316L	7/16"	114" DR, 7 1/4" IKR, 1 1/2" SF
BOTTOM HEAD (ASME FAD)	SA-240	316L	1/2"	114" DR, 7 1/4" IKR, 1 1/2" SF
SANITARY CLAMP FERRULES:	SA-479	316L		
SANITARY CLAMP FERRULE CAPS:	SA-240	316L		
PRODUCT CONTACT TUBING:	SA-249	TP 316L WLD.		
LEVEL SHELL:	SA-479	316L	1 1/4" THK.	ROSEMOUNT# 1199-0061-0001
OUTLET FERRULE:	SA-312	316L		
6" FERRULES:	SA-312	316L		
THERMOWELL:	SA-479	316L		
VORTEX BREAKER:	SA-240	316L		
MANWAY MATERIAL:				
MANWAY TOP RIM:	SA-240	316L	.58" THK. X 2" WIDE	
TOP SPHERICAL DISH:	SA-240	316L	1/4"	
MANWAY LOWER RIM:	SA-240	316L	.58" THK. X 4" WIDE	
LOWER LUG:	SA-479	316L		
SWING LUG:	SA-479	304	1" THK. X 2" X 2 1/4"	
BOLTS:	SA-193	BBS		UNS NO. S21800 "NITRONIC 60"
BOLT CLEVIS:	SA-240	304		
NUT HANDLE:	MOLDED BLUE LEXAN			
NUT HANDLE THREADED INSERT:	SA-479	304		
CLEVIS PIN:	SA-479	304	1/2" DIA.	
HAND KNOB NECK:	SA-479	304		
HAND KNOB:	PHENOLIC			
MANWAY "O" RING:	WHITE PLATINUM CURED SILICONE	1/4" NOM.		FDA ACCEPTED USP CLASS VI
OTHER MATERIAL:				
SHEATHING:	SA-240	304L	12 GA (0.105")	
LIFTING LUGS:	SA-479	316L	1" DIA.	(2) REQ'D
FERRULE GASKETS:	WHITE PLATINUM CURED SILICONE			FDA ACCEPTED USP CLASS VI
SUPPORT LEGS:	SA-312	304L	12" SCH #40	(4) REQ'D
SUPPORT LEG BRACING:	SA-312	304L		
SUPPORT LEG FOOT PAD:	SA-240	304L	3" THK. X 20" SQ.	(4) REQ'D
REINFORCING PADS:	SA-240	304L		
REIN. PADS ON PRESS. BOUNDARY:	SA-240	316L		
STIFFENER RINGS:	SA-479	304L	1" THK. X 4" WIDE	(2) REQ'D
GROUND LUGS:	SA-240	304L	1/4" THK	(2) REQ'D
FERRULE CLAMPS:	304 SS (2) PIECE HEAVY DUTY, SINGLE WING NUT, SINGLE PIN			
INSULATION, PER ASTM-C-795:	2" MIN. CHLORIDE & ASBESTOS FREE CERAMIC FIBER "K-LITE" 6# DENSITY			

**SHOP TOLERANCES:**

SHELL: DEVIATION FROM VERTICAL: ± 1"  
 OUT OF ROUNDNESS: ± 1/2" OF NOM. "D"  
 HEADS: OUTER PROFILE: NOT TO EXCEED 1.25" OF NOM. "D"  
 INNER PROFILE: NOT TO EXCEED .625" OF NOM. "D"  
 MANWAY: LOCATION IN ANY PLANE ± 1/2"  
 SUPPORTS: DEVIATION FROM ANGULAR LOCATION ± 1"  
 DEVIATION FROM REFERENCE LINE ± 1/4".

NOZZLES: PROJECTION: SHORTEST DISTANCE FROM OUTSIDE SURFACE TO FLG. FACE ± 1/4"  
 DEVIATION FROM HORIZONTAL, VERTICAL OR INTENDED POSITION ± 1/2"  
 DEVIATION OF BOLT HOLES IN ANY DIRECTION ± 1/8"  
 DEVIATION FROM ANGULAR LOCATION ± 1/2".

WELD FILLET SIZE: ± 1/8", 0"

VDR CODES: 101, 103

**ACTUAL SPRAY BALL DATA:**

TOTAL FLOW RATES (GPM) AT GIVEN PRESSURES (PSIG)

	MAXIMUM:	MINIMUM:
PRIMARY:	124 GPM AT 28 PSIG	100 GPM AT 18 PSIG
SPARE:	101 GPM AT 28 PSIG	101 GPM AT 18 PSIG

**FELDMER EQUIPMENT**  
 Syracuse, New York

FILE NAME: DWGS/S576A06 | P.O. NO. 653112  
 DRAWN BY: RCB | ENGRG. APPROVED BY: AI  
 DATE: 06-22-06 | DATE: 06/19/07

QTY. (1) 40,000 LITER PURIFIED WATER STORAGE TANK | QUOTE NO: 042681w2  
 VESSEL TAG NO: 25011-1-06  
 SERIAL NO.: S57606  
 DRAWING NO.: S-576-06