



DIMENSIONS SHOWN AS: inches (mm)

EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		(N1)		(N2)	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-85-4E1	76 1/8	1934	60 1/2	1537	51	1295	62	1575	4	102	1	25
WS-86-4E1	88 1/8	2238	72 1/2	1842	63	1600	74	1880	4	102	1 1/4	32
WS-87-4E1	100 1/8	2543	84 1/2	2146	75	1905	86	2184	4	102	1 1/4	32
WS-88-4E1	112 1/8	2848	96 1/2	2451	87	2210	98	2489	6	152	1 1/4	32
WS-89-4E1	124 1/8	3153	108 1/2	2756	99	2515	110	2794	6	152	1 1/4	32
WS-810-4E1	136 1/8	3458	120 1/2	3061	111	2819	122	3099	6	152	1 1/4	32
WS-811-4E1	148 1/8	3762	132 1/2	3366	123	3124	134	3404	6	152	1 1/4	32
WS-812-4E1	160 1/8	4067	144 1/2	3670	135	3429	146	3708	6	152	1 1/4	32
WS-813-4E1	172 1/8	4372	156 1/2	3975	147	3734	158	4013	6	152	1 1/4	32
WS-814-4E1	184 1/8	4677	168 1/2	4280	159	4039	170	4318	6	152	1 1/4	32

NOZZLE SCHEDULE				
SERVICE	MARK	SHELL SIDE	MARK	TUBE SIDE
INLET	(N1)	AS PER TABLE	(N5)	2 (51) NPT
OUTLET	(N2)	AS PER TABLE	(N6)	2 (51) NPT
DRAIN			(N7)	1/2 (13) NPT
VENT	(N4)	3/4 (19) NPT		

NOTES: 1. SUPPORTS SUPPLIED ONLY IF SPECIFIED ON ORDER.  
 2. NOZZLE SIZES SHOWN ARE RECOMMENDED FOR MAXIMUM EXCHANGER LIFE.  
 3. FABRICATED TO ASME CODE SECTION VIII DIVISION 1 AND LATEST ADDENDA.  
 4. DRAWING IS NOT TO SCALE.  
 5. ALL DIM'S  $\pm 1/8$  (3) UNLESS OTHERWISE SHOWN.

DESIGN CONDITIONS				
	SHELL		TUBES	
DESIGN PRESSURE	150 PSIG	1034 KPa	150 PSIG	1034 KPa
DESIGN TEMPERATURE	375 °F	191 °C	375 °F	191 °C
MIN. DESIGN METAL TEMP.	35 °F	1.7 °C	35 °F	1.7 °C
HYDRO. TEST PRESSURE	225 PSIG	1551 KPa	300 PSIG	2068 KPa
CONTENTS	STEAM		WATER	

CUSTOMER: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 ENGINEER: \_\_\_\_\_  
 ORDER No.: \_\_\_\_\_  
 PROJECT/JOB: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 TAG: \_\_\_\_\_ (QUOTE # \_\_\_\_\_)

TITLE: G.A. 150 LB. WS SERIES HEAT EXCHANGERS	A R M S T R O N G				NUMBER: WS-8-4P-E1-(6)	REV.:
DATE: 12 / 01 / 94 BY: D.C.R.	TORONTO - CANADA TEL: (416) 755-2291	MONTREAL - CANADA TEL: (514) 421-2424	BUFFALO - N. Y. TEL: (716) 693-8813	COLCHESTER - U.K. TEL: (44) 120-657-9491		