



DIMENSIONS SHOWN AS: inches (mm)

2 - 3/4 (19) DIA. HOLES (TYP.)

EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		N1		N2	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-85-4E4	83 3/8	2118	60 1/2	1537	50	1270	62	1575	4	102	1	25
WS-86-4E4	95 3/8	2423	72 1/2	1842	62	1575	74	1880	4	102	1	25
WS-87-4E4	107 3/8	2727	84 1/2	2146	74	1880	86	2184	4	102	1 1/4	32
WS-88-4E4	119 3/8	3032	96 1/2	2451	86	2184	98	2489	6	152	1 1/4	32
WS-89-4E4	131 3/8	3337	108 1/2	2756	98	2489	110	2794	6	152	1 1/4	32
WS-810-4E4	143 3/8	3642	120 1/2	3061	110	2794	122	3099	6	152	1 1/4	32
WS-811-4E4	155 3/8	3947	132 1/2	3366	122	3099	134	3404	6	152	1 1/4	32
WS-812-4E4	167 3/8	4251	144 1/2	3670	134	3404	146	3708	6	152	1 1/4	32
WS-813-4E4	179 3/8	4556	156 1/2	3975	146	3708	158	4013	6	152	1 1/4	32
WS-814-4E4	191 3/8	4861	168 1/2	4280	158	4013	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) FLG
OUTLET	N2	AS PER TABLE	N6	2 (51) FLG
DRAIN	N3	1/2 (13) NPT	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 MAX. EXCHANGER LIFE, NO EXTERNAL FORCES APPLY.
  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	
	PSIG	KPa	PSIG	KPa
DESIGN PRESSURE	150	1034	150	1034
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	1551	225	1551
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-E4(6)	REV. A ECO #9218 FEB. 20/04 J.R.
DATE: 12 / 01 / 94	BY: D.C.R.	TEL: (416) 755-2291	TEL: (514) 421-2424	TEL: (716) 693-8813	TEL: (44) 120-657-9491	