



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-168-4-1	103 1/2	2629	79 3/4	2026	66	1676	98	2489	10	254	3	76
WS-169-4-1	115 1/2	2934	91 3/4	2330	78	1981	110	2794	10	254	3	76
WS-1610-4-1	127 1/2	3239	103 3/4	2635	90	2286	122	3099	10	254	3	76
WS-1611-4-1	139 1/2	3543	115 3/4	2940	102	2591	134	3404	10	254	3	76
WS-1612-4-1	151 1/2	3848	127 3/4	3245	114	2896	146	3708	10	254	3	76
WS-1613-4-1	163 1/2	4153	139 3/4	3550	126	3200	158	4013	10	254	3	76
WS-1614-4-1	175 1/2	4458	151 3/4	3854	138	3505	170	4318	10	254	3	76
WS-1615-4-1	187 1/2	4763	163 3/4	4159	150	3810	182	4623	10	254	3	76

NOZZLE SCHEDULE

SERVICE	MARK	SHELL SIDE	MARK	TUBE SIDE
INLET	N1	AS PER TABLE	N5	4 (102) NPT
OUTLET	N2	AS PER TABLE	N6	4 (102) NPT
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 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	
	PSIG	KPa	PSIG	KPa
DESIGN PRESSURE	150	1034	125	862
DESIGN TEMPERATURE	375 °F	191 °C	375 °F	191 °C
MIN. DESIGN METAL TEMP.	40 °F	4.4 °C	40 °F	4.4 °C
HYDRO. TEST PRESSURE	225	1551	250	1723

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-16-4P-1(10)	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