



EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		N1		N2	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-168-4-4	114 3/4	2915	79 3/4	2026	66	1676	98	2489	10	254	3	76
WS-169-4-4	126 3/4	3219	91 3/4	2330	78	1981	110	2794	10	254	3	76
WS-1610-4-4	138 3/4	3524	103 3/4	2635	90	2286	122	3099	10	254	3	76
WS-1611-4-4	150 3/4	3829	115 3/4	2940	102	2591	134	3404	10	254	3	76
WS-1612-4-4	162 3/4	4134	127 3/4	3245	114	2896	146	3708	10	254	3	76
WS-1613-4-4	174 3/4	4439	139 3/4	3550	126	3200	158	4013	10	254	3	76
WS-1614-4-4	186 3/4	4743	151 3/4	3854	138	3505	170	4318	10	254	3	76
WS-1615-4-4	198 3/4	5048	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) FLG
OUTLET	N2	AS PER TABLE	N6	4 (102) 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 MAXIMUM EXCHANGER LIFE.
 3. FABRICATED TO ASME CODE SECTION VIII DIVISION 1 AND LATEST ADDENDA.
 4. DRAWING IS NOT TO SCALE.
 5. ALL DIMN'S ±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.	40 °F	4.4 °C	40 °F	4.4 °C
HYDRO. TEST PRESSURE	225 PSIG	1551 KPa	225 PSIG	1551 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-16-4P-4-(10)	REV.			
DATE:	12 / 01 / 94	BY:	D.C.R.	TORONTO - CANADA	MONTREAL - CANADA	BUFFALO - N. Y.	COLCHESTER - U.K.	TEL: (416) 755-2291	TEL: (514) 421-2424	TEL: (716) 693-8813	TEL: (44) 120-657-9491