



EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		(N1)		(N2)	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-143-4-1	43 1/8	1095	22	559	12 1/2	318	38	965	6	152	2	51
WS-144-4-1	55 1/8	1400	34	864	24 1/2	622	50	1270	6	152	2	51
WS-145-4-1	67 1/8	1705	46	1168	36 1/2	927	62	1575	8	203	2 1/2	64
WS-146-4-1	79 1/8	2010	58	1473	48 1/2	1232	74	1880	8	203	2 1/2	64
WS-147-4-1	91 1/8	2315	70	1778	60 1/2	1537	86	2184	8	203	2 1/2	64
WS-148-4-1	103 1/8	2619	82	2083	72 1/2	1842	98	2489	8	203	2 1/2	64
WS-149-4-1	115 1/8	2924	94	2388	84 1/2	2146	110	2794	8	203	2 1/2	64
WS-1410-4-1	127 1/8	3229	106	2692	96 1/2	2451	122	3099	8	203	2 1/2	64
WS-1411-4-1	139 1/8	3534	118	2997	108 1/2	2756	134	3404	8	203	2 1/2	64
WS-1412-4-1	151 1/8	3839	130	3302	120 1/2	3061	146	3708	8	203	2 1/2	64
WS-1413-4-1	163 1/8	4143	142	3607	132 1/2	3366	158	4013	8	203	2 1/2	64
WS-1414-4-1	175 1/8	4448	154	3912	144 1/2	3670	170	4318	8	203	2 1/2	64
WS-1415-4-1	187 1/8	4753	166	4216	156 1/2	3975	182	4623	8	203	2 1/2	64

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 DIMN'S ±1/8 (3) UNLESS OTHERWISE SHOWN.

DESIGN CONDITIONS				
	SHELL		TUBES	
DESIGN PRESSURE	150 PSIG	1034 KPa	125 PSIG	862 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	250 PSIG	1723 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-14-4P-1	REV.	
DATE:	12/01/94	BY: D.C.R.	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			