



EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		N1		N2	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-42-4-1	27 3/4	705	15 3/4	400	9 1/2	241	26	660	2	51	1	25
WS-43-4-1	39 3/4	1010	27 3/4	705	21 1/2	546	38	965	2	51	1	25
WS-44-4-1	51 3/4	1314	39 3/4	1010	33 1/2	851	50	1270	2	51	1	25
WS-45-4-1	63 3/4	1619	51 3/4	1314	45 1/2	1156	62	1575	2 1/2	64	1 1/4	32
WS-46-4-1	75 3/4	1924	63 3/4	1619	57 1/2	1461	74	1880	2 1/2	64	1 1/4	32
WS-47-4-1	87 3/4	2229	75 3/4	1924	69 1/2	1765	86	2184	2 1/2	64	1 1/4	32
WS-48-4-1	99 3/4	2534	87 3/4	2229	81 1/2	2070	98	2489	2 1/2	64	1 1/4	32
WS-49-4-1	111 3/4	2838	99 3/4	2534	93 1/2	2375	110	2794	2 1/2	64	1 1/4	32
WS-410-4-1	123 3/4	3143	111 3/4	2838	105 1/2	2680	122	3099	2 1/2	64	1 1/4	32
WS-411-4-1	135 3/4	3448	123 3/4	3143	117 1/2	2985	134	3404	2 1/2	64	1 1/4	32
WS-412-4-1	147 3/4	3753	135 3/4	3448	129 1/2	3289	146	3708	2 1/2	64	1 1/4	32

NOZZLE SCHEDULE				
SERVICE	MARK	SHELL SIDE	MARK	TUBE SIDE
INLET	N1	AS PER TABLE	N5	1 (25) NPT
OUTLET	N2	AS PER TABLE	N6	1 (25) 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 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 ±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-4-4P-1	REV.
DATE: 12/01/94 BY: D.C.R.	TDORONTO - 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		