



EXCHANGER SIZE	DIMENSIONS											
	A		B		C		D		N1		N2	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
WS-42-4-4	33 1/4	845	15 3/4	400	9 1/2	241	26	660	2	51	1	25
WS-43-4-4	45 1/4	1149	27 3/4	705	21 1/2	546	38	965	2	51	1	25
WS-44-4-4	57 1/4	1454	39 3/4	1010	33 1/2	851	50	1270	2	51	1	25
WS-45-4-4	69 1/4	1759	51 3/4	1314	45 1/2	1156	62	1575	2 1/2	64	1 1/4	32
WS-46-4-4	81 1/4	2064	63 3/4	1619	57 1/2	1461	74	1880	2 1/2	64	1 1/4	32
WS-47-4-4	93 1/4	2369	75 3/4	1924	69 1/2	1765	86	2184	2 1/2	64	1 1/4	32
WS-48-4-4	105 1/4	2673	87 3/4	2229	81 1/2	2070	98	2489	2 1/2	64	1 1/4	32
WS-49-4-4	117 1/4	2978	99 3/4	2534	93 1/2	2375	110	2794	2 1/2	64	1 1/4	32
WS-410-4-4	129 1/4	3283	111 3/4	2838	105 1/2	2680	122	3099	2 1/2	64	1 1/4	32
WS-411-4-4	141 1/4	3588	123 3/4	3143	117 1/2	2985	134	3404	2 1/2	64	1 1/4	32
WS-412-4-4	153 1/4	3893	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) FLG
OUTLET	N2	AS PER TABLE	N6	1 (25) FLG
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 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.	35 °F	1,7 °C	35 °F	1,7 °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-4-4P-4	REV.	
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		