



| EXCHANGER SIZE | DIMENSIONS | | | | | | | | | | | |
|----------------|------------|------|--------|------|---------|------|--------|------|--------|-----|--------|----|
| | A | | B | | C | | D | | N1 | | N2 | |
| | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm | inches | mm |
| WS-85-4-4 | 72 | 1829 | 49 | 1245 | 40 3/4 | 1035 | 62 | 1575 | 4 | 102 | 1 | 25 |
| WS-86-4-4 | 84 | 2134 | 61 | 1549 | 52 3/4 | 1340 | 74 | 1880 | 4 | 102 | 1 1/4 | 32 |
| WS-87-4-4 | 96 | 2438 | 73 | 1854 | 64 3/4 | 1645 | 86 | 2184 | 4 | 102 | 1 1/4 | 32 |
| WS-88-4-4 | 108 | 2743 | 85 | 2159 | 76 3/4 | 1949 | 98 | 2489 | 6 | 152 | 1 1/4 | 32 |
| WS-89-4-4 | 120 | 3048 | 97 | 2464 | 88 3/4 | 2254 | 110 | 2794 | 6 | 152 | 1 1/4 | 32 |
| WS-810-4-4 | 132 | 3353 | 109 | 2769 | 100 3/4 | 2559 | 122 | 3099 | 6 | 152 | 1 1/4 | 32 |
| WS-811-4-4 | 144 | 3658 | 121 | 3073 | 112 3/4 | 2864 | 134 | 3404 | 6 | 152 | 1 1/4 | 32 |
| WS-812-4-4 | 156 | 3962 | 133 | 3378 | 124 3/4 | 3169 | 146 | 3708 | 6 | 152 | 1 1/4 | 32 |
| WS-813-4-4 | 168 | 4267 | 145 | 3683 | 136 3/4 | 3473 | 158 | 4013 | 6 | 152 | 1 1/4 | 32 |
| WS-814-4-4 | 180 | 4572 | 157 | 3988 | 148 3/4 | 3778 | 170 | 4318 | 6 | 152 | 1 1/4 | 32 |

| NOZZLE SCHEDULE | | | | |
|-----------------|------|--------------|------|--------------|
| SERVICE | MARK | SHELL SIDE | MARK | TUBE SIDE |
| INLET | N1 | AS PER TABLE | N5 | 2 (51) FLG |
| OUTLET | N2 | AS PER TABLE | N6 | 2 (51) 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-8-4P-4-(6) | 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 |