

## REVROT™-W02 Metallurgical Performance Data-R1.2

January 1996

### SYSTEM

- . REVROT™-W02 5 HP drive using 8 inch ET impeller at 31 inch immersion depth, circular cross section chamber
- . Shaft speed: 425 RPM with 24 second reversal interval
- . Metal flowrate: 61,000 lb/hr
- . Metal residence time: 194 seconds/stage

### HYDROGEN REMOVAL

- . Hydrogen concentration in  $\text{cm}^3\text{H}_2(\text{STP})/100\text{gAl}$  by Ransley/solid extraction
- . Process gas: 150 scfh argon only

#### Single Stage REVROT™

<u>Alloy-sample</u>	<u>Upstream Concentration</u>	<u>Downstream Concentration</u>	<u>% Reduction</u>
6111-1	0.23	0.09	61%
6111-2	0.24	0.09	63%
6111-3	0.26	0.09	65%
3004-1	0.17	0.06	65%
3004-2	0.19	0.04	79%
3004-3	0.18	0.06	67%

#### Two Stage REVROT™

6111-1	0.215	0.048	78%
6111-2	0.203	0.037	82%
6111-3	0.212	0.038	82%
6111-4	0.211	0.037	83%

### ALKALI REMOVAL

- . Trace element concentration in weight percent by optical emissions spectroscopy
- . Process gas: 150 scfh argon + 7.5 scfh chlorine
- . 5052 alloy

<u>Element</u>	<u>Upstream Concentration</u>	<u>Downstream Concentration</u>	<u>Stoichiometric Chlorine required</u>
Sodium	0.0008 w/o	0.0002 w/o	2.9 scfh
Calcium	0.0012 w/o	0.0007 w/o	2.8 scfh
Lithium	0.0003 w/o	0.0002 w/o	<u>1.6 scfh</u>

TOTAL STOICHIOMETRIC CHLORINE REQUIREMENT 7.3 scfh

ACTUAL CHLORINE USED 7.5 scfh

OVERALL PERCENT STOICHIOMETRIC REDUCTION 97 %