

THIS SHEET HAS BEEN
REPLACED

METHOD AND APPARATUS FOR
MANUFACTURING A ROCK BIT LEG

ABSTRACT OF THE DISCLOSURE

- 5 A method of manufacturing a rock bit leg from a rough
bit leg forging is disclosed whereby multiple machining
operations are performed by a six-axis CNC machining
center. Three dimensional datum surfaces are initially
formed on a rough leg forging. The rough leg forging is
10 then mounted in a holding fixture. The fixture, including
the leg forging, is secured to the six-axis CNC machining
center. A three dimensional datum reference from the leg
forging is set into the NC function of the six-axis
machining center.
- 15 The rough leg forging includes a pair of extended
flanges coincident with the 120° leg surfaces. The leg
flanges mount to complimentary surfaces formed on the leg
holding fixture, thus securing the leg within the fixture
without interference of any of the machining processes.
- 20 The CNC machining center performs a majority of the
material removal operations to prepare the leg for
subsequent assembly through manipulation of the six
interactive axes of the CNC machining center. The
machining center positions the rough forging of the rock
25 bit leg in any and all attitudes necessary to accomplish
each of the separate material removal operations thereby
maintaining extremely close tolerances since the leg
forging remains indexed to and secured within the fixture
throughout all of the machining processes.

This Sheet Has Been Replaced

