

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : B21D 19/04	A1	(11) International Publication Number: WO 97/19770 (43) International Publication Date: 5 June 1997 (05.06.97)
(21) International Application Number: PCT/US96/17670 (22) International Filing Date: 5 November 1996 (05.11.96) (30) Priority Data: 08/562,734 27 November 1995 (27.11.95) US (71) Applicant: AEROQUIP CORPORATION [US/US]; 3000 Strayer Road, Maumee, OH 43537 (US). (72) Inventors: VAN RIPER, Philip, C.; 7220 Nightingdale #6, Holland, OH 43528 (US). FILLERBROCK, Gene, A.; 14840 Road 15-M, Columbus Grove, OH 45830 (US). (74) Agents: PORCELLO, James, F., Jr. et al.; Emch, Schaffer, Schaub & Porcello Co., P.O. Box 916, Toledo, OH 43697 (US).		(81) Designated States: AU, JP, MX, NZ, SG, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report. ① 1st copy 2 SK ② 2nd + annexes

(54) Title: METHOD FOR FORMING A FLANGE ON A TUBE

(57) Abstract

A method for forming a flange (52) on a tube (30) includes the steps of: (a) placing a tube having a tube axis extending longitudinally therethrough on a support device (12) for supporting the tube, the tube having an edge defining an opening, the support device having a predetermined flange shape surface (34) adjacent the edge; (b) positioning a tip (14) having a tip axis (B) extending longitudinally therethrough adjacent the edge, the tip having a substantially hyperboloidal shape, the tip axis being at a predetermined angle (X) with respect to the tube axis, the tip rotating along the tube and tip axes; (c) inserting the rotating tip in the opening of the tube; and (d) engaging the edge with the tip to cause the edge to contact the predetermined flange shape surface to form a flange on the tube.

