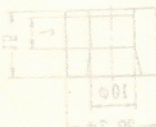
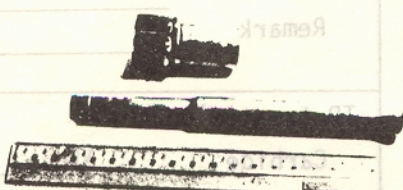
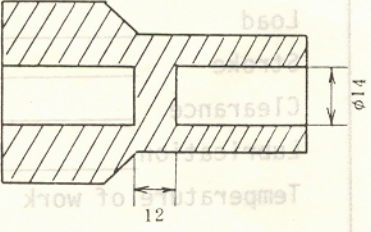


APPLICATION DATA

Name of part Piercing punch	Source K. Iwai, et al (Nippon Denso Co., Ltd.) Machinist (Japan) Vol. No.12 (1976) p.37	
Mode of servicing Cold forging		
Work material Material Size Hardness Remark	Product 	Work material Material <u>Cr-Mo carburizing steel</u> Size _____ Hardness _____ Remark _____
Punch and product 	TD treated part Carbide <u>VC</u> Base metal <u>M2</u> Hardness of substrate _____ Remark _____	
Blank 	Working or servicing condition Machine _____ Load _____ Stroke _____ Clearance _____ Lubrication _____ Temperature of work _____	

Result	Base metal, treatment and hardness of the part to be compared M2, Ordinarily hardened M2, Tuftrided	Result
	Life and other evidences TD part 24,000 shots/life The part to be compared Hardened : 8,000 shots/life Tuftrided: 2,000 shots/life Profit obtained through application of TD Process Improvement in surface finish of products 