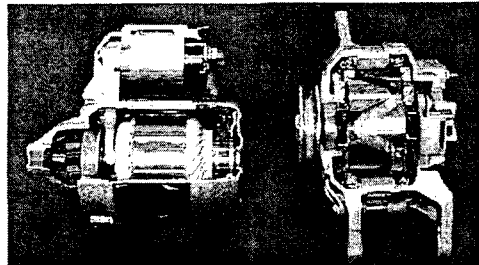


냉간 단조 제품 소재 크랙 방지를
위한 공정 변경

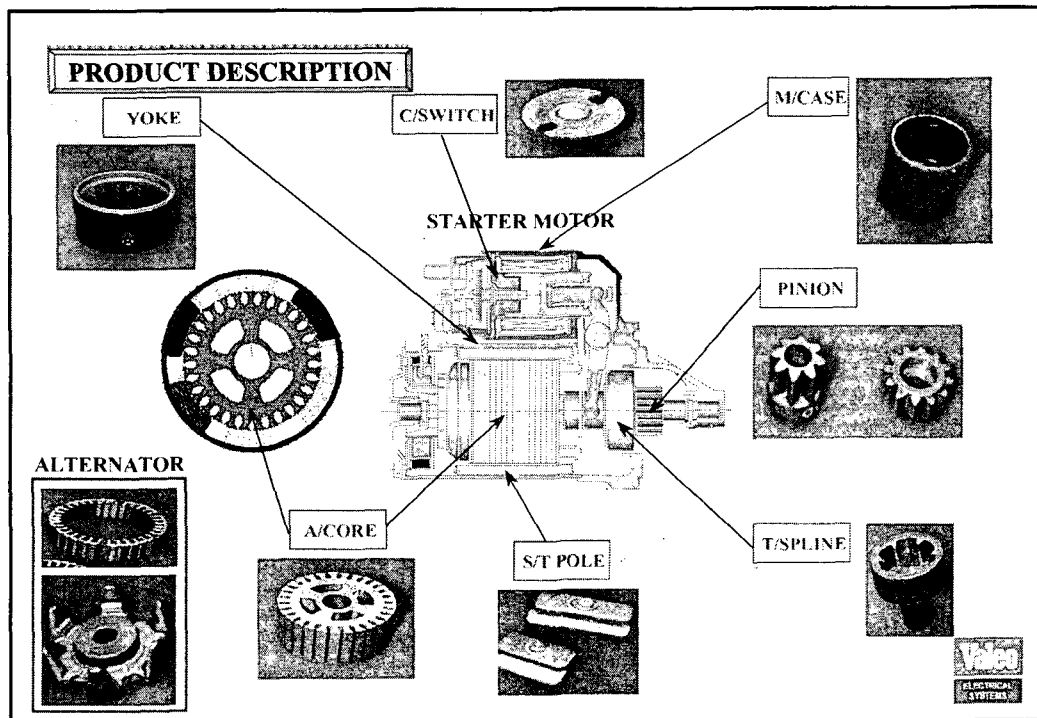
발레오만도(주)

강종훈, 박선평

냉간 단조 제품의 크랙방지를 위한 공정변경

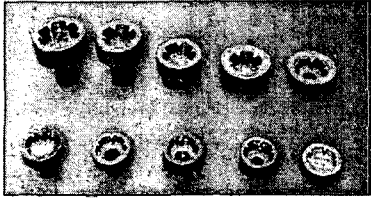


강종훈, 박선평

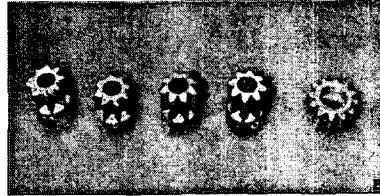


PRODUCT 1

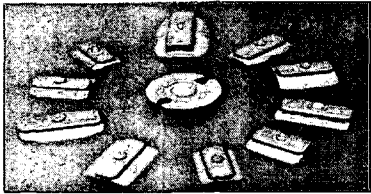
- METAL FORMING PRODUCTS -



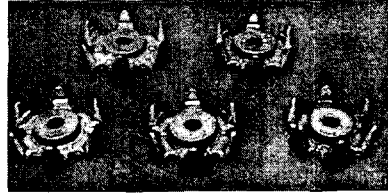
THRUST SPLINE



PINION GEAR



POLE & C/S SWITCH

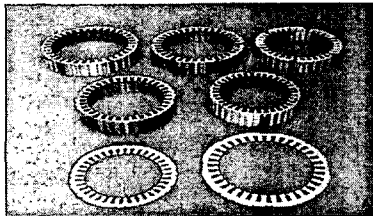


2PCS ROTOR POLE

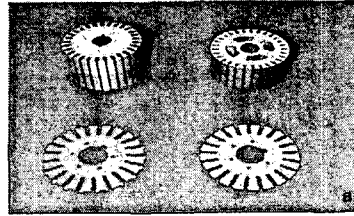


PRODUCT 2

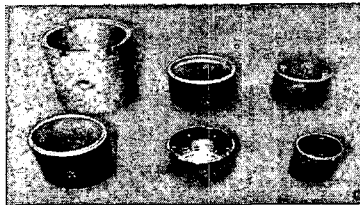
- SHEET METAL PRODUCTS -



STATOR CORE



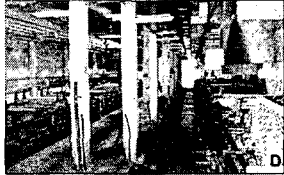
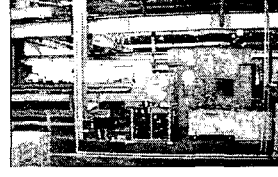
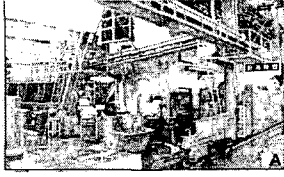
ARMATURE CORE



YOKE & M/CASE



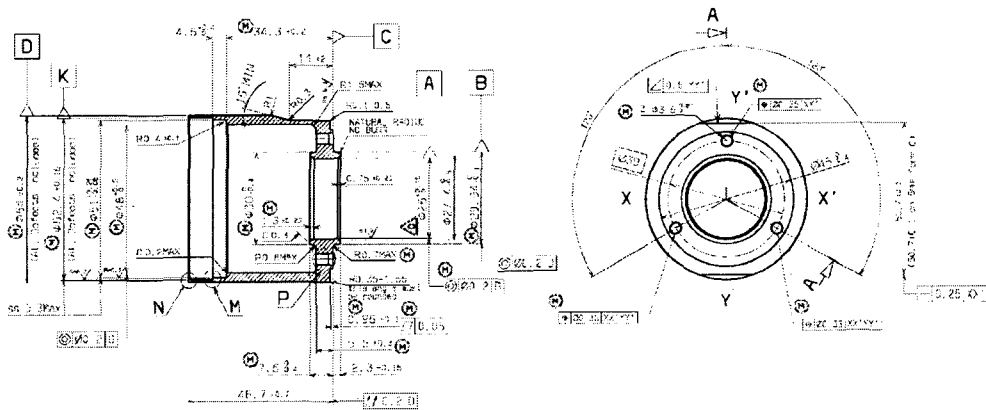
LINE DESCRIPTION



- A. FORGING PRESS AND TRANSFER
- B. ANNEALING FURNACE LINE
- C. CUTTING M/C
- D. PHOSPATE LINE
- E. SLINKY CORE LINE & HIGH SPEED PRESS
- F. ROBOTIC MACHINE LINE
- G. AUTOMATIC PAINTING LINE



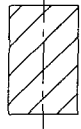
NEW DEVELOPMENT



- 1) STARTER MOTOR용 MAGNETIC CASE
- 2) 재질 : S10C상당
- 3) 수량 : 130,000 pcs/month

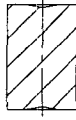


Forging Process



Annealing
Shot Blast
Phosphating

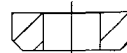
cutting



upsetting

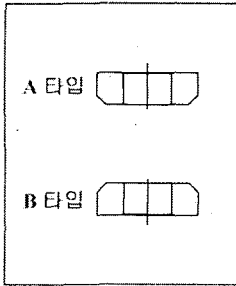


upsetting



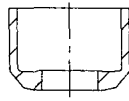
Piercing

630ton Schuler Press

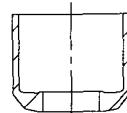


A 타입

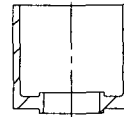
B 타입



B.W.Ext.



Ironing

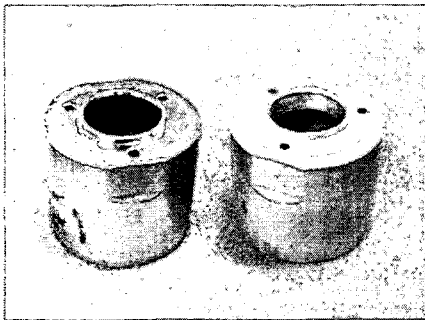


Sizing

630ton Schuler Press



Product & Problem



완성 제품



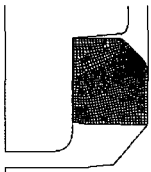
크랙 발생품

크랙 발생률 : 80%

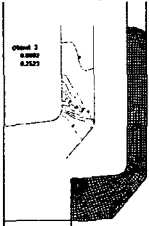


F.E.M Analysis

A TYPE



Damage



B TYPE

