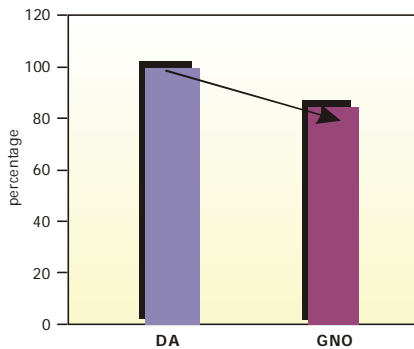


SG in Cylindrical Plunge Grinding

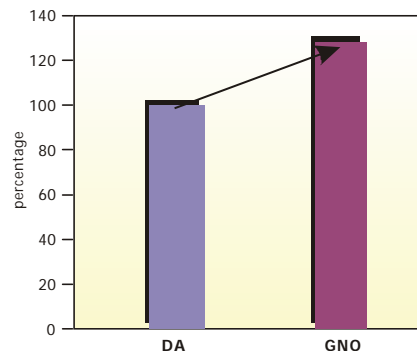
Case Study -3

GRINDING RESULTS

COST REDUCTION (%)



PRODUCTIVITY



Dressing frequency reduced to 3 instead of 1
Consistent size and finish below 3.2 Rmax
Good cut rate
Low metallurgical damages.

MACHINE TOOL FACTORS

- Make : Toyoda
- Op. no. : IE-30-20-I
- Power : 22 kw
- Speed : 60 m/s

WORK MATERIAL FACTORS

- Crank pin grinding [MX crankshafts]
- Material : C70
- Hardness : 235 to 280 BHN

OPERATIONAL FACTORS

- Job rpm:200 [shoulder and rough] and 10 during finishing.
- Stock-250 mic on sides and 60 mic on pin dia
- Feed rates-
 - Shoulder - 27 mm/min
 - First rough - 12 mm/min
 - Second rough - 7 mm/min
 - First fine -2.8 mm/min
 - Second fine :0.8 mm/min
 - Micro finish : 0.14 mm/min
- Dressing freq : 3
- Dressing depth : 30 mic on dia
- Dresser : roller

ABRASIVE PRODUCT

- Old : TDV /60
- New : SG80-20M8VH [GNO]

CONCLUSION:

SG was found cost justifying over DA wheels by 14% with additional benefit of 30 % increase in productivity.

NORTON

GRINDWELL NORTON LTD.

SAINT-GOBAIN
ABRASIVES