

RESULTS:

Workpiece Material: Aluminium (Shear Strength = $3.03 \times 10^8 \text{ N/m}^2$)

Depth of cut: 0.5mm

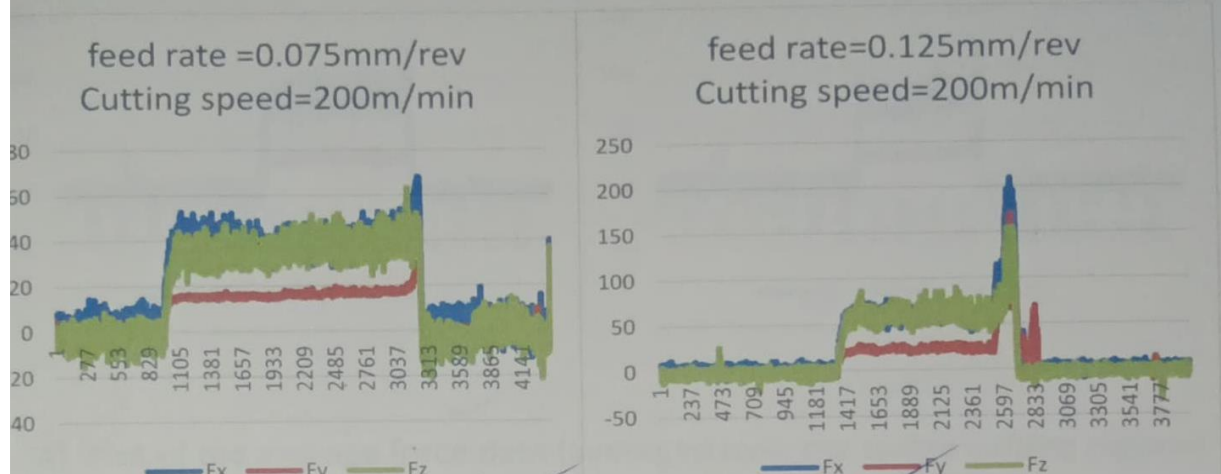
Table1: Cutting parameters

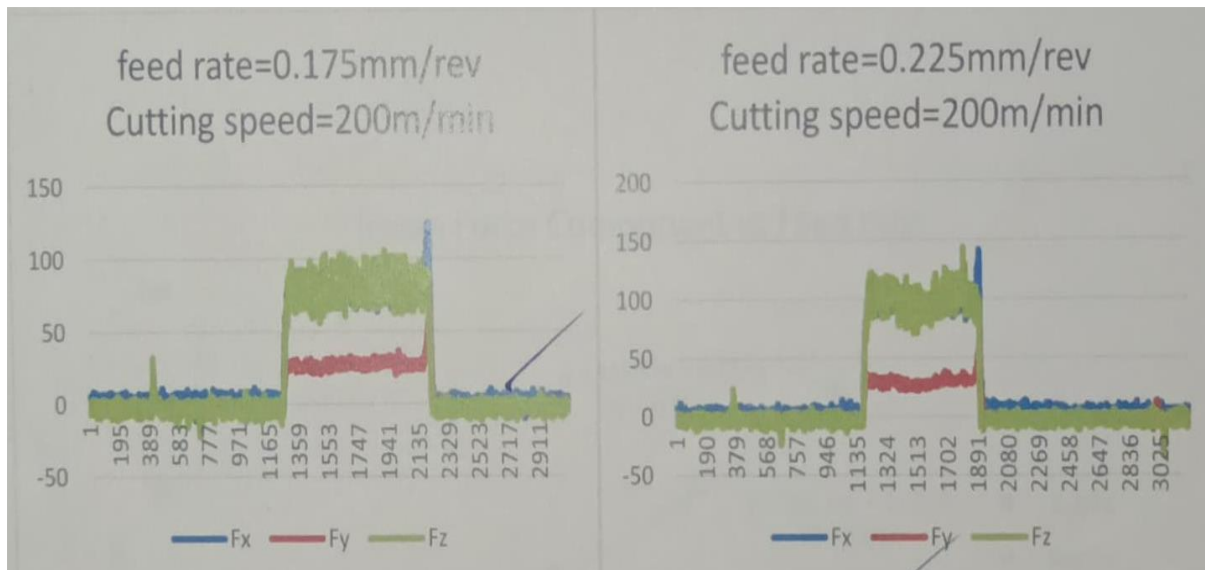
S.no	Feed Rate (mm/rev)	Cutting Speed (m/min)	Thickness(mm)			Avg(Fx) (N)	Avg(Fy) (N)	Avg(Fz) (N)
			Avg					
1	0.075	200	0.294	0.288	0.291	39.71464	16.1004	36.64458
2	0.125	200	0.375	0.425	0.400	62.60694	24.11906	60.18109
3	0.175	200	0.500	0.519	0.509	79.37653	26.78786	80.38739
4	0.225	200	0.793	0.784	0.789	94.8172	28.83253	99.22154

S.no	Feed Rate (mm/rev)	Cutting Speed (m/min)	Thickness(mm)			Avg(Fx) (N)	Avg(Fy) (N)	Avg(Fz) (N)
			Avg					
1	0.175	100	0.369	0.425	0.397	93.7344	33.9684	111.435
2	0.175	150	0.644	0.607	0.626	92.54187	33.82399	103.7967
3	0.175	200	0.500	0.519	0.509	79.37653	26.78786	80.38739
4	0.175	250	0.465	0.500	0.483	73.78834	24.48521	74.49039

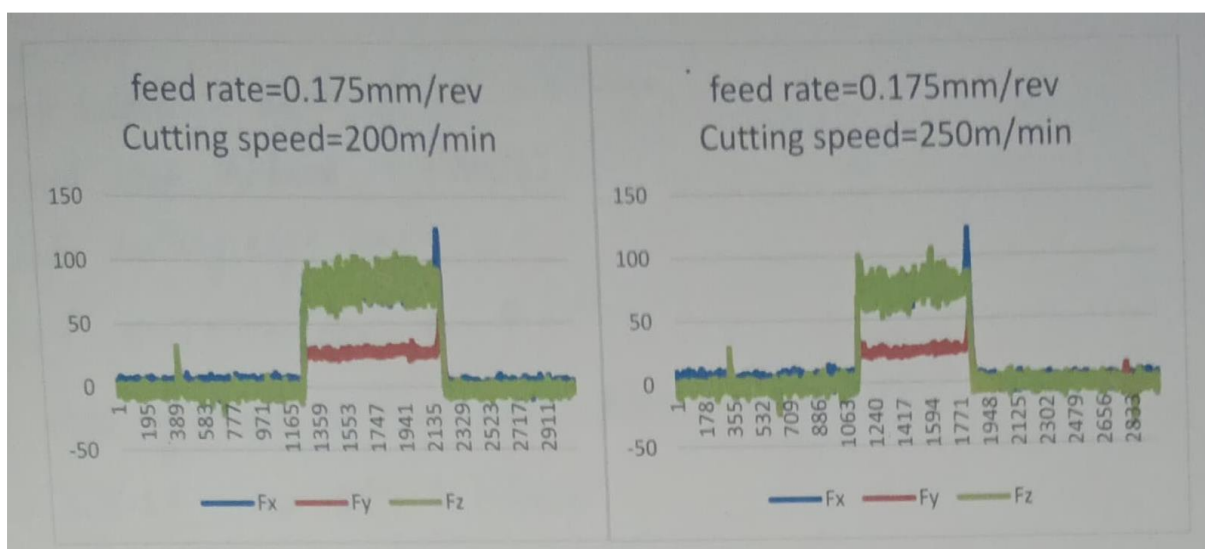
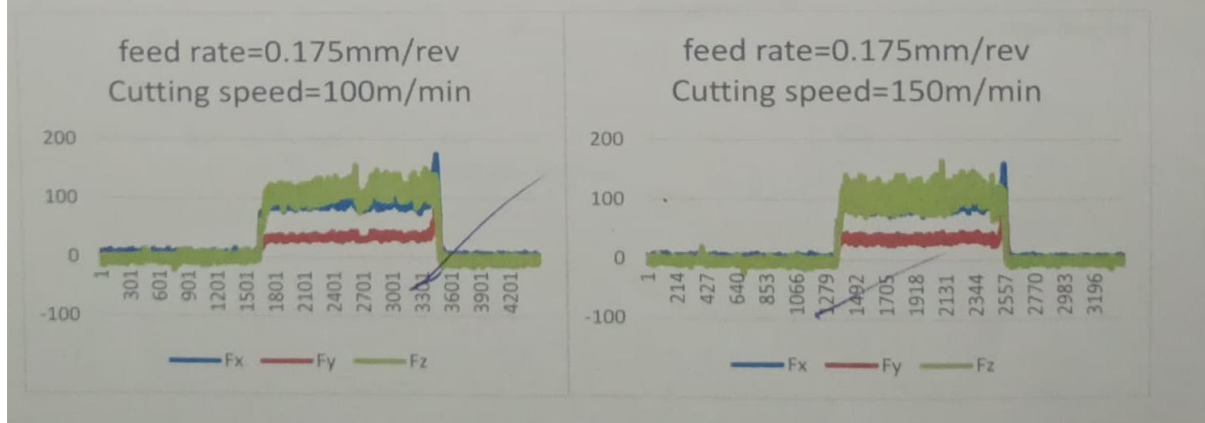
1) Plots of measured Cutting forces (N) vs Time:

a) For varying feed values:





b) For varying cutting speed



2) Plot of the average force data (averaged over the stable cutting regime) fit using linear regression modelling with the value of R^2 .

