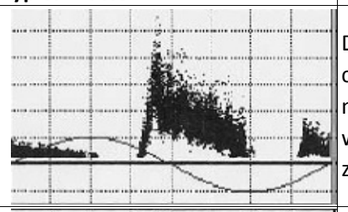
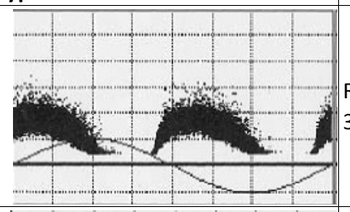
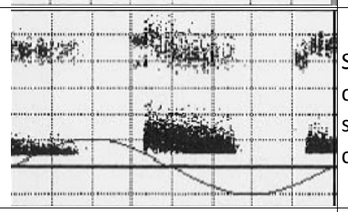
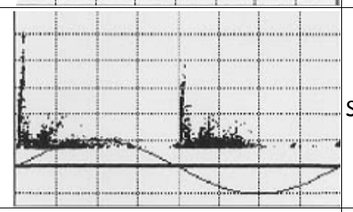
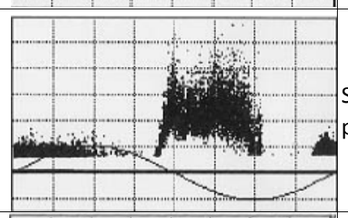
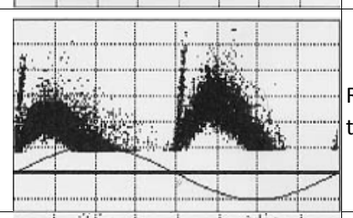
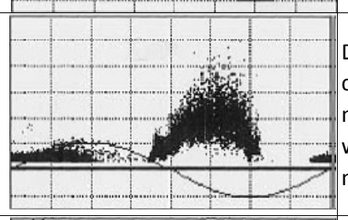
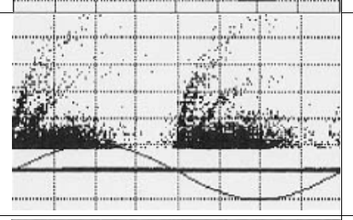
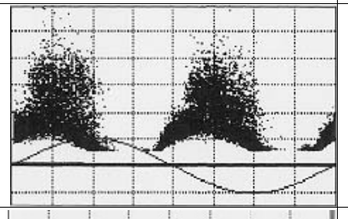
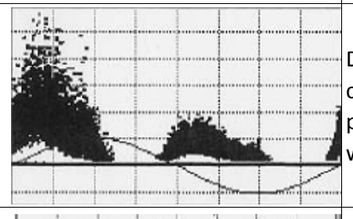
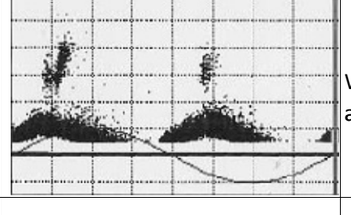
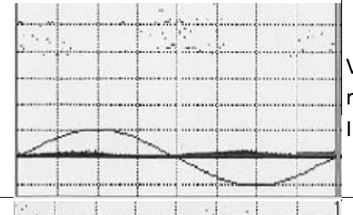
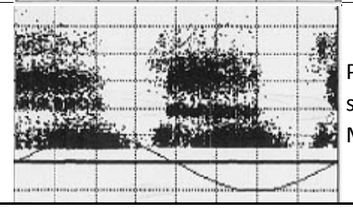
TYPICAL PARTIAL DISCHARGE PATTERNS IN ROTATING MACHINERY

Type of PD	Location	Typical Pattern	Description	Type of PD	Location	Typical Pattern	Description
Slot discharges	F		Discharge magnitude is higher in negative half cycle than the positive. The pattern in the negative half cycle has a distinct triangular shape with a sharp rise around the negative voltage zero.	Internal discharges	C		Roughly equal in both half cycles; centred around 30 degrees.
Slot discharges + End winding discharges	F + J		Slot discharge + sparks in end winding due to light contamination with conductive remnants. The spark PD at J would be almost equal in both half cycles.	Internal discharges	A or B		Slight asymmetry, positive higher.
Slot discharges + End winding discharges	F + J		Slot discharge + eroded end winding corona protection.	Internal discharges + Thermal ageing	C		Roughly equal in both half cycles; distinct triangular shape.
End winding discharges	J		Discharge magnitude is higher in negative half cycle than the positive. The pattern in the negative half cycle has a distinct triangular shape with a sharp rise around the negative voltage maximum.	Internal discharges + Stress grading defect	C + I		
Internal discharges + End winding discharges	C + J			Internal Discharges	C		Discharge magnitude is higher in positive half cycle than the negative. The pattern in the positive half cycle has a distinct triangular shape with a sharp rise around the positive voltage zero.
End winding discharges	C		Weak discharge; one or two locations may be associated with surface tracking.	Defective Internal Stress Grading	I		Very strong sparking (> 200 nC), low repetition rate; due to poor contact of the stress grading. Internal corona shield too may be damaged.
				Defective Internal Stress Grading	L		Poor contact between slot corona protection & stress grading, capacitive charging effect. Magnitudes between 30 nC to 100 nC.

Courtesy - www.diatechindia.com