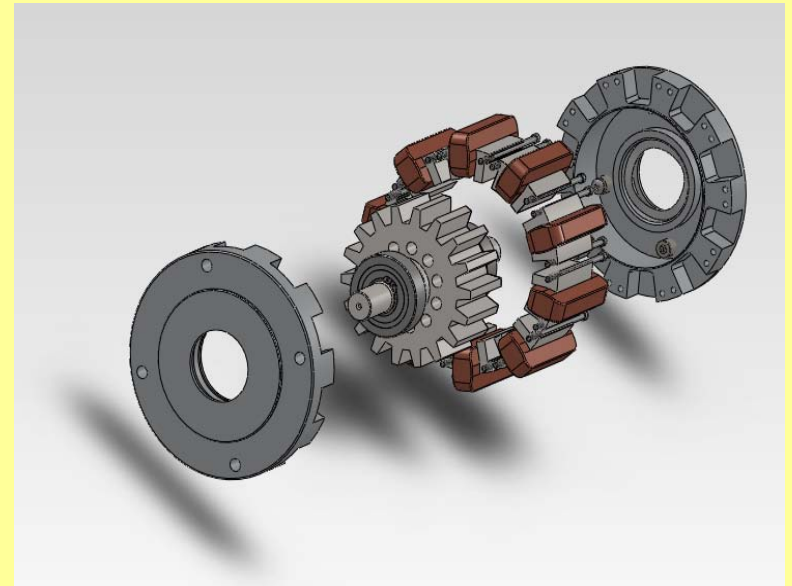
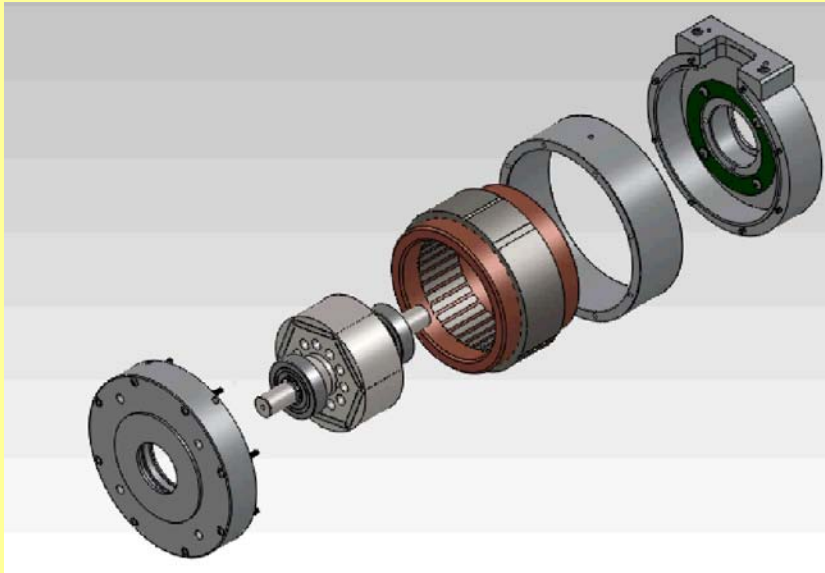
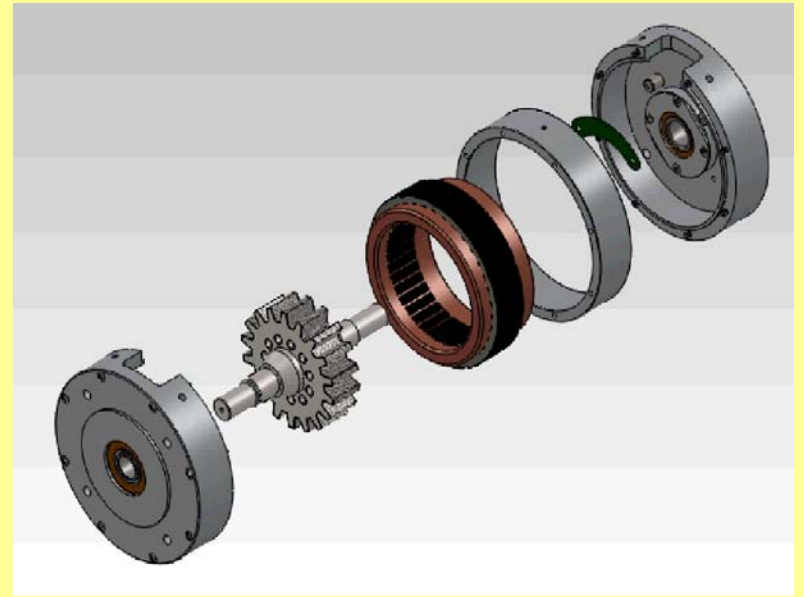


Dakota Power

- Produce motors, generators, and electric drives
- Non-rare earth magnet, competitive with PM
- DP Switched Reluctance Technology
 - Legacy mechanical design
 - Leading edge magnetic simulation software
 - Embed advances in computer electronics
 - Produce high efficiency, power dense machines
 - Lightweight, low-cost, high temperature

Motor Design

	Type	Flux Path	Stator Poles	Phases	Rotor	Status
Hughes-1	SRDCM	Axial	12 Pole	3 Phase	6 Lobe	Built by Hughes 2006
Hughes-2	SRDCM	Axial	12 Pole	3 Phase	6 Lobe	Built by Hughes 2006
DP-01	SRDCM	Axial	9 Pole	4 Phase	9 Lobe	Built by DP 02/10
DP-02	SRDCM	Axial	9 Pole	4 Phase	9 Lobe	Built by DP 10/10
DP-03	SRDCM	Axial	12 Pole	3 Phase	6 Lobe	Built by DP 12/10
DP-04	SRDCM	Axial	9 Pole	4 Phase	18 Lobe	Built by DP 01/11
DP-05	SRM	Axial	2 Pole	4 Phase	6 Segment	Built by DP 02/11
DP-06	SRM	Radial (Short)	18 Pole	2 Phase	18 Lobe	Built by DP 02/11
DP-07	SRM	Radial (Short)	12 Pole	3 Phase	12 Lobe	Design completed
DP-08	IPM	Radial	6 Pole	3 Phase	6 Lobe / NdFeB	Built by DP 03/11
DP-09	IPM	Radial	6 Pole	3 Phase	6 Lobe / Ceramic	Built by DP 04/11
DP-10	SRM	Radial	20 Pole	5 Phase	18 Lobe	Will be assembled/tested in 07/11
DP-11	SRM	Radial	12 Pole	2 Phase	6 Lobe	Will be assembled/tested by 08/11
DP-12	SRM	Radial	12 Pole	3 Phase	10 Lobe	Will be assembled/ tested by 08/11



Comparison Summary

	Power Density	Efficiency	Speed Range	Thermal Rating	Price
AC Induction	Fair	Good	Fair	Good	Good
Permanent Magnet DC	Excellent	Excellent	Good	Fair	Fair
Switched Reluctance	Good	Good	Excellent	Excellent	Very Good



Poor	Fair	Good	Very Good	Excellent
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Light Weight Portable Generator

- Objective
 - Develop a light weight portable engine-generator set to provide electrical power in remote locations
- Advantages of turbine engines
 - High power density
 - High speed output shaft allows for the use of a high speed, high power density generator



Genset Weight (lb)

