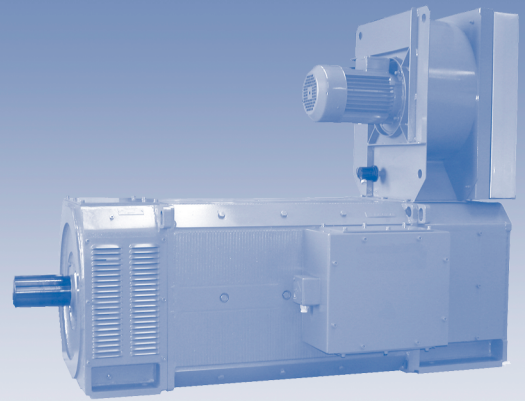
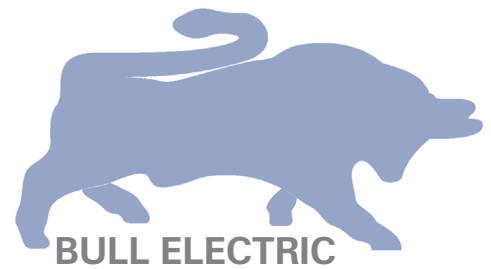


# DC Motors Bull MkIV Range



Outputs 15kW to 750kW



**BROOK  
CROMPTON**

# Standards

## IEC Reference standards

Rating and performance	60034-1
Methods for determining losses of efficiency	60034-2
Classification of degree of protection	60034-5
Classification of cooling methods	60034-6
Type of construction and mounting arrangement	60034-7
Terminal markings and direction of rotation	60034-8
Noise limits	60034-9
Grade of vibration	60034-14
Dimensions	60072-1
Low voltage directive	73/23/EEC
Electromagnetic compatibility directive	89/336/EEC
Machine directive	98/37/CE

## General specification

### Degree of protection

IP23 standard, up to IP55.

### Cooling form

IC06 standard, IC16, IC17, IC410, IC610, IC36, IC37, IC86W and IC666 also available.

### Mounting arrangements

IM1001 (Foot, B3) standard, other standard mounting arrangements available.

### Supply

Thyristor convertor, PWM convertor, DC generator, rectifier, battery.

### Insulation

Class H

# Features

## Field / Poles

Magnetic circuit fully laminated to improve commutating ability.  
Compensating winding available up to 250 frame size.  
Compensating winding standard on 280 frame and above.

## Commutator

All commutators are constructed using electrolytic copper with mica segments.  
Size 132-200 are moulded construction, the conductors are soldered with high temperature solder, TIG welding optional.  
225-315 commutators are moulded in a resin, TIG welding is standard.  
355-400 commutators are built on Vee rings with additional glass banding at the centre. TIG welding is standard.

## Construction

Armature lamination pack shrunk on to shaft.  
Field assembly fully welded.  
Foot fixing on each precision machined endshield.  
Brush holders constant pressure mounted on epoxy impregnated moulded glass bush ring.  
Ball bearings up to 200 frame size.  
Roller bearing at DE on 225 frame and above.

## Cooling

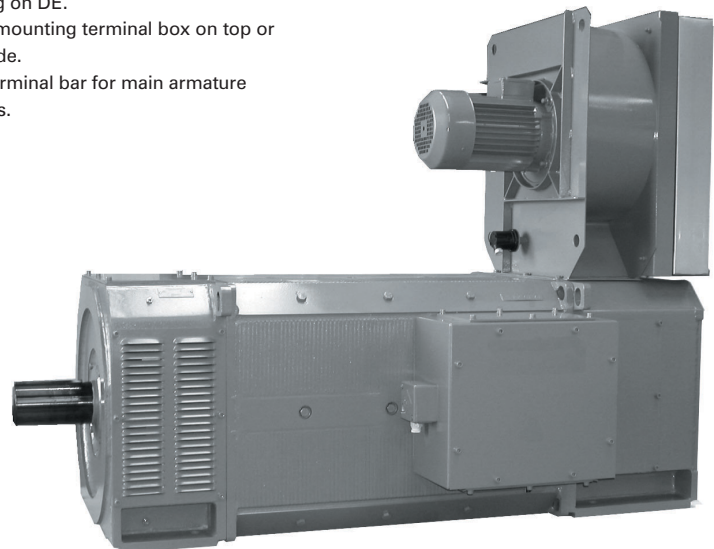
Force ventilated with filter standard construction.  
Option to mount blower in any position.  
Closed air - water cooled and closed air - air cooled an option on all sizes to give IP55 protection.  
Pipe ventilated an option.

## Terminal box

Welded steel construction with separate gland plates.  
Standard terminal box position is right hand side looking on DE.  
Option for mounting terminal box on top or left hand side.  
Moulded terminal bar for main armature connections.

## Armature

High tensile steel shaft.  
Epoxy glass banding and slot wedges to withstand high centrifugal forces.  
Skewed slots to reduce noise and give optimum operation at low speed.  
Through ventilated for optimum heat transfer.



## Extras and accessories

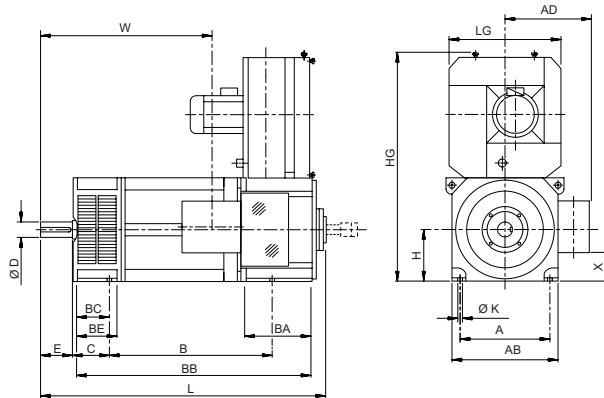
A wide range of extras and accessories are available including:  
Tacho-generators and encodes or adaptor kits only.  
Overheat protection, thermostats are standard.  
Airflow switch.  
Special shaft and double shaft.  
Anti-condensation heaters.  
Special balance.  
Sole plates and flange adaptors to obtain mechanical inter-changeability.  
Tropical treatment.  
Special paint finish.

# Performance data and dimensions

Plain shunt, separately excited MkIV Range Cooling form IC06, Protection IP23. Voltage: 440 or 460V<sub>a</sub>

FRAME	nominal output	nominal output	maximum safe speed rpm	excitation W	cooling air requirement		inertia m <sup>2</sup>	force vent	
	1750 rpm kW	1750 rpm Nm			m <sup>3</sup> /sec	Pa		kW	dB(a) 1m
P132NS	17.5	95	4800	720	0.18	1000	0.07	0.37	80
P132NM	21.0	120	4800	800	0.18	1000	0.08	0.37	80
P132NL	28.5	150	4800	920	0.18	1000	0.10	0.37	80
P132NX	32.5	170	4500	1050	0.18	1000	0.115	0.37	80
P160NS	35.5	218	4200	1050	0.28	1300	0.25	0.55	80
P160NM	47.0	272	4200	1200	0.28	1300	0.28	0.55	80
P160NL	58.0	345	4200	1350	0.28	1300	0.33	0.55	80
P160NX	73.0	390	4000	1500	0.28	1300	0.36	0.55	80
P180NM	81.0	470	3600	1950	0.40	1600	0.56	1.1	82
P180NL	109.0	595	3600	2100	0.40	1600	0.65	1.1	82
P200KM	133.0	722	3400	1800	0.60	2000	0.92	2.2	85
P200NL	146.0	804	3200	2100	0.60	2000	1.05	2.2	85
P200KL	160.0	869	3200	2100	0.60	2000	1.05	2.2	85
P200KX	180.0	1006	2800	2300	0.60	2000	1.20	2.2	85
NP225NS	226.0	1235	3000	2300	0.80	2000	2.00	2.2	85
NP225NM	251.0	1394	3000	2600	0.80	2000	2.15	2.2	85
NP225NL	283.0	1584	3000	2900	0.80	2000	2.30	2.2	85
NP250KS	349.0	1890	2800	2900	1.00	2000	3.65	3.0	85
NP250KM	374.0	2100	2800	3300	1.00	2000	3.90	3.0	85
NP250KL	410.0	2215	2800	3700	1.00	2000	4.20	3.0	85
NP280KS	488.0	2837	2600	3500	1.25	1600	5.05	3.0	85

280, 355, 400 and 450 frame performance on application.



Type	D	E	C	B	BA	BB	BC	BE	L	W	AD	H	HG	K	A	AB	X	LG	Net Weight kg
P132N(K)S2	38 k6 with key	80	89	325	60	393	35	60	625	355	235	132	525	12	216	287	50	258	135
P132N(K)M2	38 k6 with key	80	89	365	60	433	35	60	665	395	235	132	525	12	216	287	50	258	150
P132N(K)L2	38 k6 with key	80	89	415	60	483	35	60	715	445	235	132	525	12	216	287	50	258	170
P132N(K)X2	38 k6 with key	80	89	445	60	513	35	60	745	475	235	132	525	12	216	287	50	258	185
P160N(K)S2	48 k6 with key	110	108	415	70	498	41	70	765	452	275	160	630	15	254	343	70	308	235
P160N(K)M2	48 k6 with key	110	108	465	70	548	41	70	815	502	275	160	630	15	254	343	70	308	264
P160N(K)L2	48 k6 with key	110	108	530	70	613	41	70	880	567	275	160	630	15	254	343	70	308	304
P160N(K)X2	48 k6 with key	110	108	570	70	653	41	70	920	607	275	160	630	15	254	343	70	308	329
P180N(K)S4	55 m6 with key	110	121	475	115	595	41	80	905	492	300	180	735	15	279	390	80	358	370
P180N(K)M4	55 m6 with key	110	121	530	115	650	41	80	960	547	300	180	735	15	279	390	80	358	415
P180N(K)L4	55 m6 with key	110	121	605	115	725	41	80	1035	622	300	180	735	15	279	390	80	358	475
P180N(K)X4	55 m6 with key	110	121	650	115	770	41	80	1080	667	300	180	735	15	279	390	80	358	515
P200N(K)S4	65 m6 with key	140	133	480	120	617	55	90	975	527	365	200	846	19	318	423	83	408	490
P200N(K)M4	65 m6 with key	140	133	545	120	682	55	90	1040	592	365	200	846	19	318	423	83	408	555
P200N(K)L4	65 m6 with key	140	133	630	120	767	55	90	1125	677	365	200	846	19	318	423	83	408	640
P200N(K)X4	65 m6 with key	140	133	680	120	817	55	90	1175	727	365	200	846	19	318	423	83	408	690
NP225N(K)S5	85 m6 with key	170	149	785	270	1033	125	160	1284	777	410	225	930	19	356	445	105	448	910
NP225N(K)M5	85 m6 with key	170	149	835	270	1083	125	160	1334	827	410	225	930	19	356	445	105	448	970
NP225N(K)L5	85 m6 with key	170	149	885	270	1133	125	160	1384	877	410	225	930	19	356	445	105	448	1030
NP250N(K)S5	95 m6 with key	170	168	755	300	1122	144	180	1379	857	435	250	1075	24	406	495	125	500	1200
NP250N(K)M5	95 m6 with key	170	168	805	300	1172	144	180	1429	907	435	250	1075	24	406	495	125	500	1275
NP250N(K)L5	95 m6 with key	170	168	865	300	1232	144	180	1489	967	435	250	1075	24	406	495	125	500	1365
NP280(K)S6	95 m6 with key	170	190	845	325	1262	166	205	1519	912	500	280	1261	24	457	555	127	570	1665
NP280(K)M6	95 m6 with key	170	190	905	325	1322	166	205	1579	972	500	280	1261	24	457	555	127	570	1785
NP280(K)L6	95 m6 with key	170	190	975	325	1392	166	205	1649	1042	500	280	1261	24	457	555	127	570	1925
NP315(K)R8	100 m6 with key	210	216	833	425	1307	192	235	1604	897	533	315	1500	28	508	625	162	770	2155
NP315(K)S8	100 m6 with key	210	216	933	425	1407	192	235	1704	997	533	315	1500	28	508	625	162	770	2155
NP315(K)M8	100 m6 with key	210	216	993	425	1467	192	235	1764	1057	533	315	1500	28	508	625	162	770	2305
NP315(K)L8	100 m6 with key	210	216	1063	425	1537	192	235	1834	1127	533	315	1500	28	508	625	162	770	2480

# Rotating Electrical Machines

Every care has been taken to ensure the accuracy of the information contained in this publication, but, due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication

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