

# TABLE OF CONTENTS

INTRODUCTION.....	1-2
PRODUCT SELECTION/REFERENCE GUIDE .....	3-6
NONREGENERATIVE AND REGENERATIVE, DC CONTROLLERS.....	7-37
OPTIONS AND MODIFICATIONS FOR DC CONTROLLERS.....	38-46
ACCESSORIES .....	47-53
CLUTCHES AND BRAKES.....	55-80
MOTOR ENCLOSURES .....	81
DC MOTORS .....	83-91
AC MOTORS .....	93-109
WASHDOWN PRODUCTS .....	111-112
APPLICATION ENGINEERING .....	113-127
TERMS AND CONDITIONS .....	128-129

BOSTON GEAR®, RATIOCONTROL®, RATIOCONTROL PAX®, ACE®, DCX® and DCXplus® are registered trademarks of Boston Gear.

# PRODUCT SELECTION/REFERENCE GUIDE

## DC Controllers, Single Phase, Nonregenerative

Ratiopax



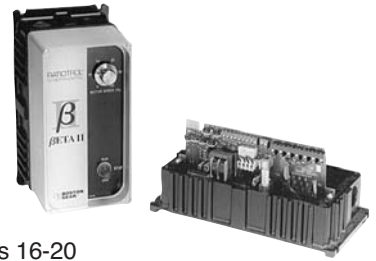
Pages 9-10

DCX



Pages 11-15

BETA II



Pages 16-20

BETAplus



Pages 21-25

VEplus



Pages 26-30

## DC Controllers, Single-Phase, Regenerative

RBA/VEA-RG



Pages 31-37

# PRODUCT SELECTION/REFERENCE GUIDE

## Accessories

Remote Stations



Pages 47-48

Tachometer Generator



Pages 49-50

Magnetic Pick-up



Page 51

Analog Meter



Page 52

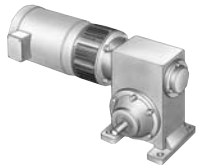
Digital Meter



Page 52

## Clutches and Brakes

DC C-Face



Page 57-58

DC Foot Mounted



Page 59-62

DC Shaft Mounted



Pages 63-76

AC C-Face



Page 77

AC C-Face Washdown



Pages 78-79

AC Motor Brake Kit



Page 80

## DC Motors

Permanent Magnet



Pages 86-87

Permanent Magnet-Washdown



Page 88

Shunt Wound



Pages 89-91

## AC Motors

Open Dripproof



Pages 95-96

Totally Enclosed



Page 97-102

Washdown



Page 103

Brake Motors



Pages 104-105

Rigid Base



Page 107

Inverter Duty



Pages 108-109

# RATIOTROL SYSTEMS

## System Selection

The proper selection of a Ratiotrol system is based on first determining the load torque, second, the horsepower of the motor and last, the type and configuration of the controller to power the selected motor. Sizing an adjustable speed drive generally is no different than selecting a motor and reducer for a constant speed application. Maximum RPM and maximum torque are used in all calculations involving constant torque applications, which are the most common. Our standard Ratiotrol systems are constant torque drives and therefore, selection is straight forward.

Constant horsepower applications, typically winders or machine tools, require the use of the maximum load torque (usually at the minimum speed) in selecting a suitable drive. If the required constant HP value is known, the required system HP is equal to the required speed range ratio multiplied by the constant HP figure.

NOTE: Auxiliary drives beyond the reducer output shaft can reduce the cost of a system significantly since a chain or gear drive multiplies the torque delivered by the reducer, thereby reducing the load required to be driven by the reducer. For instance, if a 3:1 ratio chain drive can be incorporated in a drive train, the driven load (torque) can be divided by 3 and the load speed multiplied by 3 before selecting a suitable motor and reducer combination.

### SELECTION PROCEDURE:

- 1) Select a reducer as you would for a constant speed application and size the motor/controller package to provide the HP indicated by the reducer's input HP rating.

Note: When using compound worm gear reducers with ratios greater than 200:1, use a motor with twice the HP shown for that reducer. This technique will provide sufficient starting torque at low motor speeds to overcome the near-static friction conditions present in the output bearings and gearing of the reducer.

- 2) The motor selected in Step 1 determines the "System HP" to use when you progress to the Ratiotrol System Selection Guides.
- 3) From the Selection Guide, proceed to the appropriate AC or DC Controller section to determine the complete motor and controller catalog numbers, options and any desired accessories.

**SINGLE PHASE DC CONTROLLER SELECTION GUIDE**

System HP	Line Voltage (VAC)	Nonregenerative					Regenerative		Motor Series*	
		Ratiopax	DCX	BETA II	BETAplus	VEplus	RBA-RG	VEA-RG	PM	Shunt
1/12	115	•	•						BPM/PM908T	—
1/6	115	•	•	•	•	•	•	•	PM916	V91600
1/4	115	•	•	•	•	•	•	•	PM925	V92500
1/3	115	•	•	•	•	•	•	•	PM933	V93300
1/2	115	•	•	•	•	•	•	•	PM950	V95000
	230	•	•	•	•	•	•	•	PM1850	—
3/4	115		•	•	•	•	•	•	PM975	V97500
	230	•	•	•	•	•	•	•	PM1875	V18750
1	115		•	•	•	•	•	•	PM9100	V91000
	230	•	•	•	•	•	•	•	PM18100	V18100
1-1/2	230		•	•	•	•	•	•	PM18150	V18150
2	230		•	•	•	•	•	•	PM18200	V18200
3	230		•	•	•	•	•	•	PM18300	18300
5	230					•		•	PM18500	18500

\*Basic DC Motor Catalog number, refer to Pages 86-87 for complete motor selection.