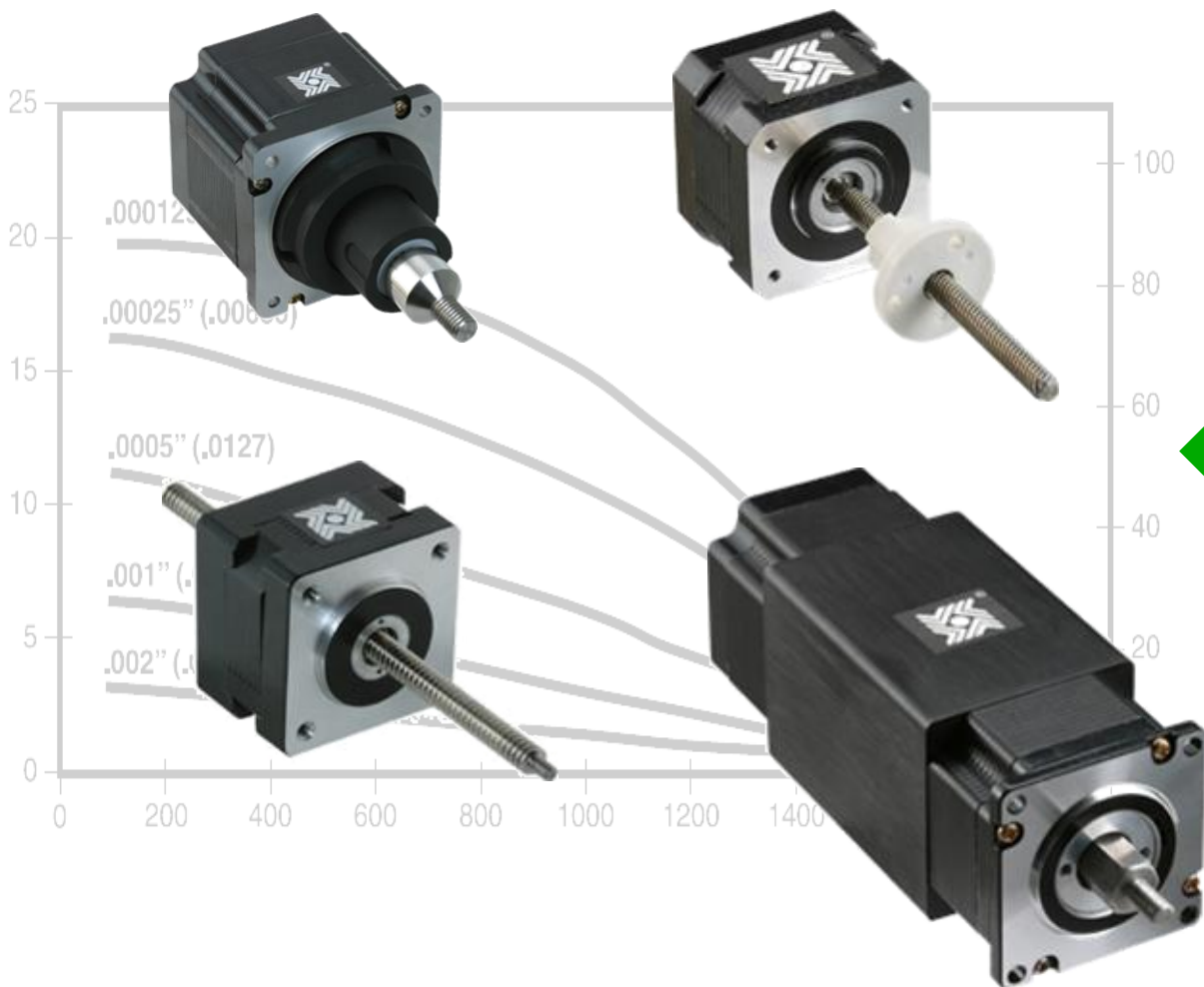


# Hybrid-Aktuatoren Kennlinien



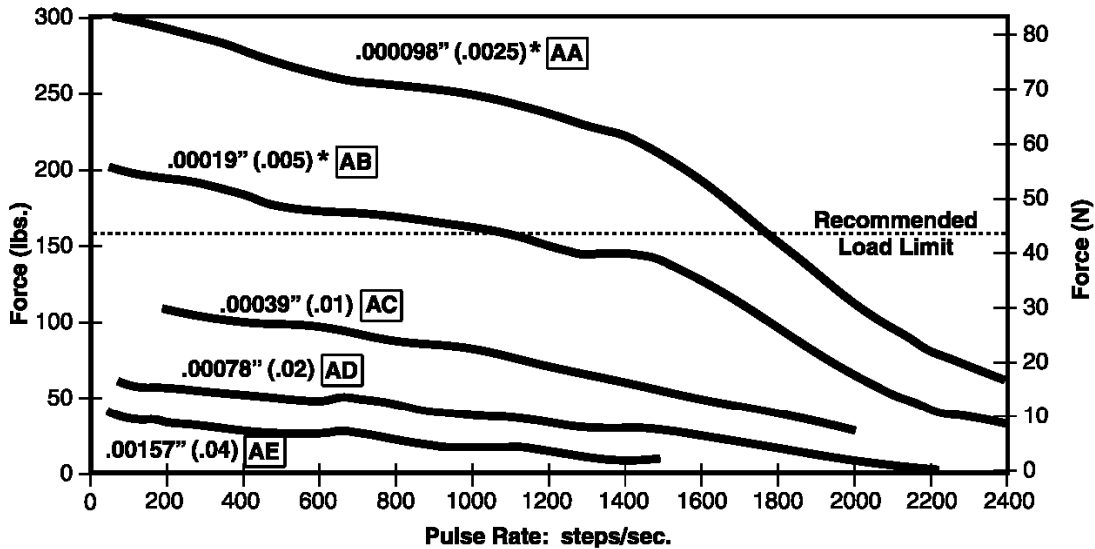
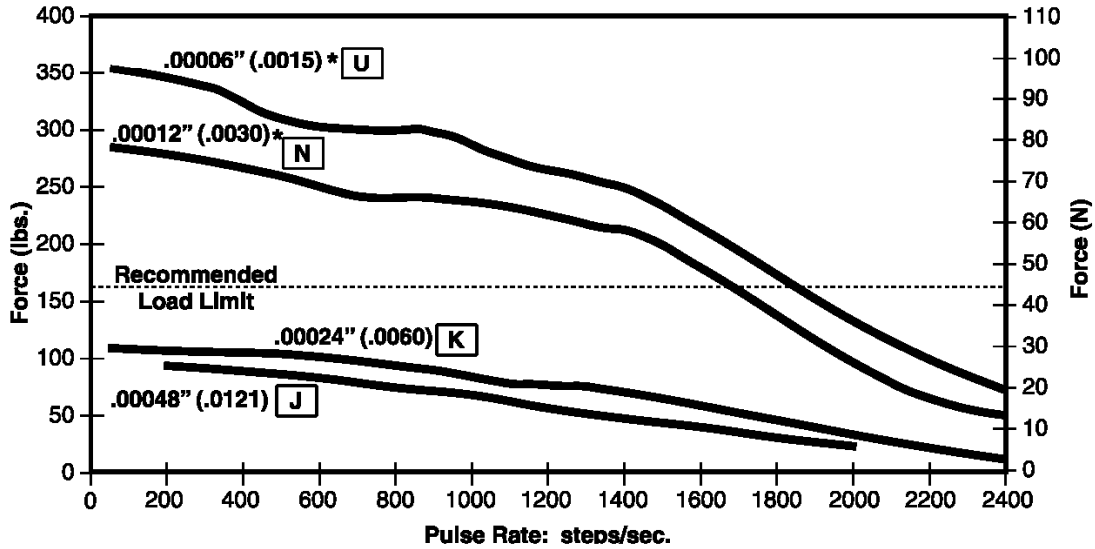
- NEMA 8
- NEMA 11
- NEMA 14
- NEMA 17
- NEMA 23
- NEMA 34
- Dual Motion NEMA 14
- Dual Motion NEMA 17

# Series 21000 Size 8 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle

Ø .138 (3.50) Leadscrew



\*Care should be taken when utilizing these screw pitches to ensure that the physical load limits of the motor are not exceeded. Please consult the factory for advice in selecting the proper pitch for your application.

NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

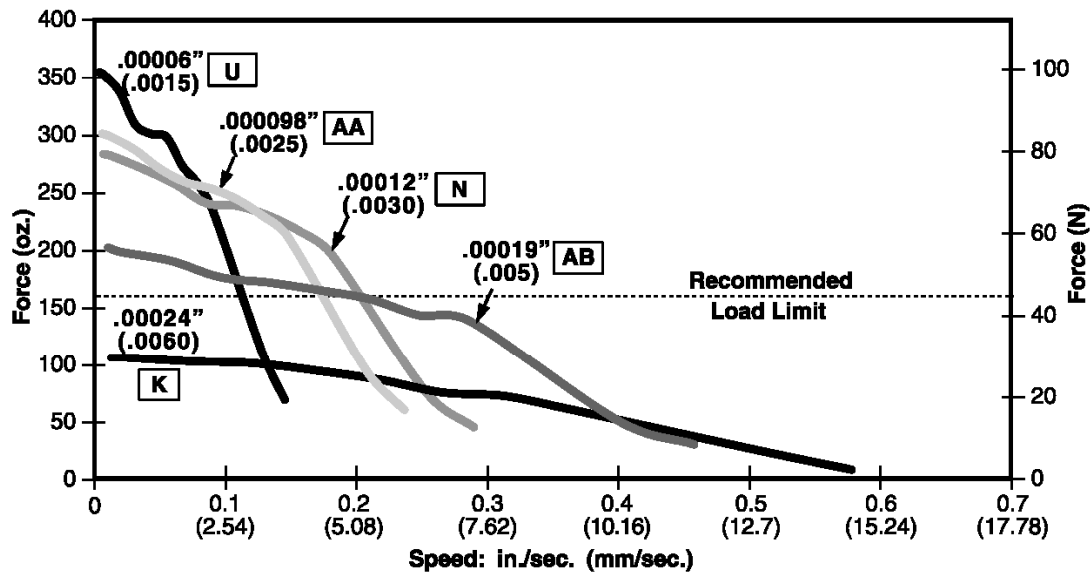
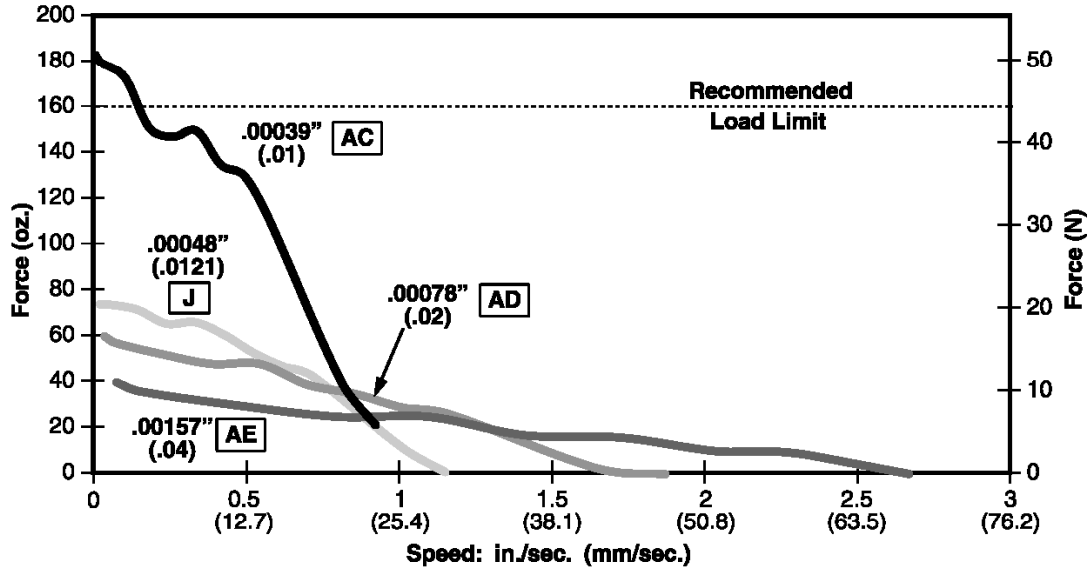
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Series 21000 Size 8 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .138 (3.50) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

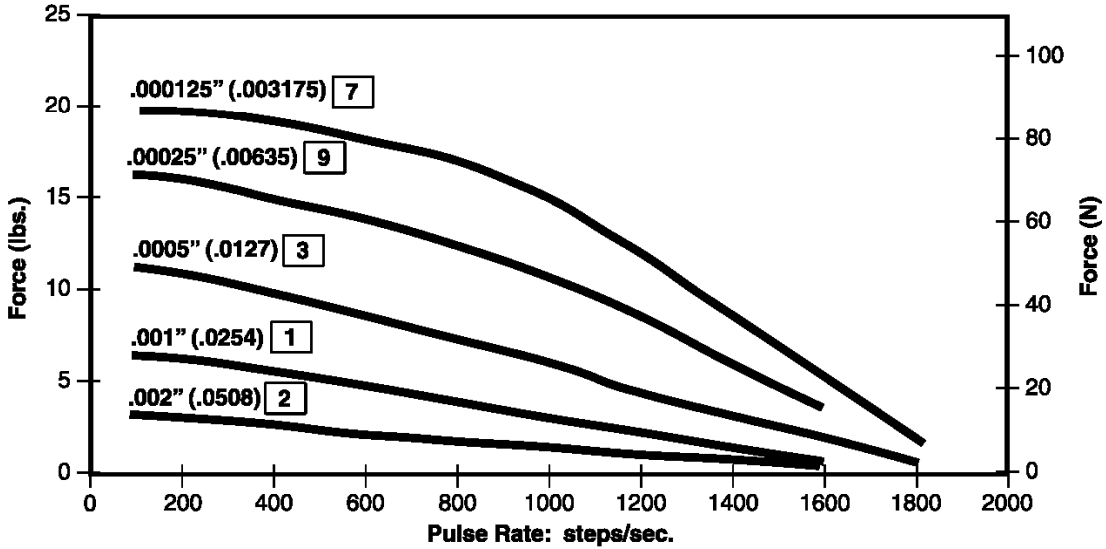
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

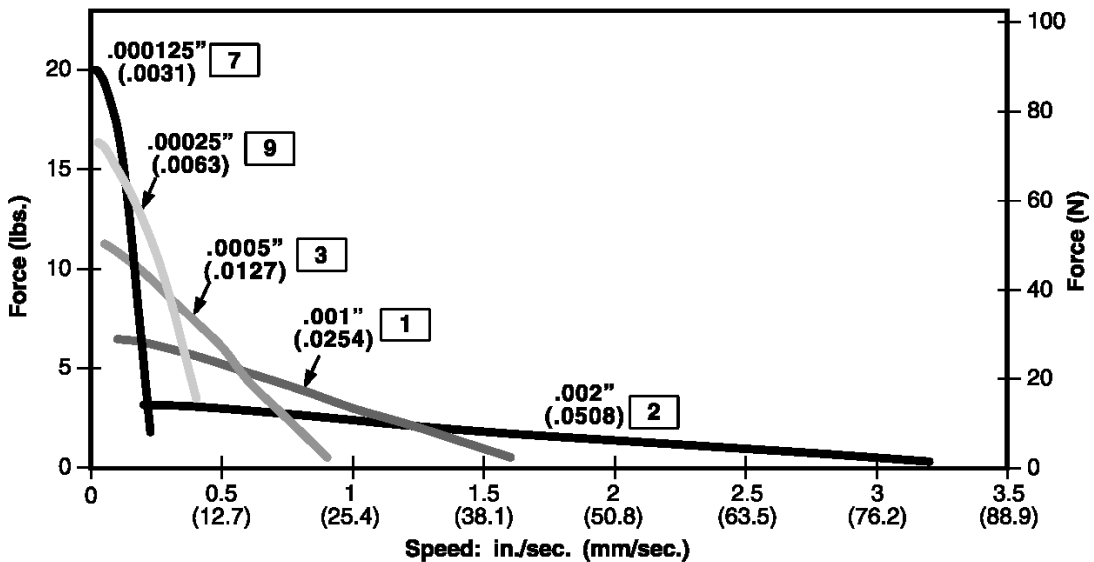
# Series 28000 Size 11 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle Ø .187 (4.75) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .187 (4.75) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

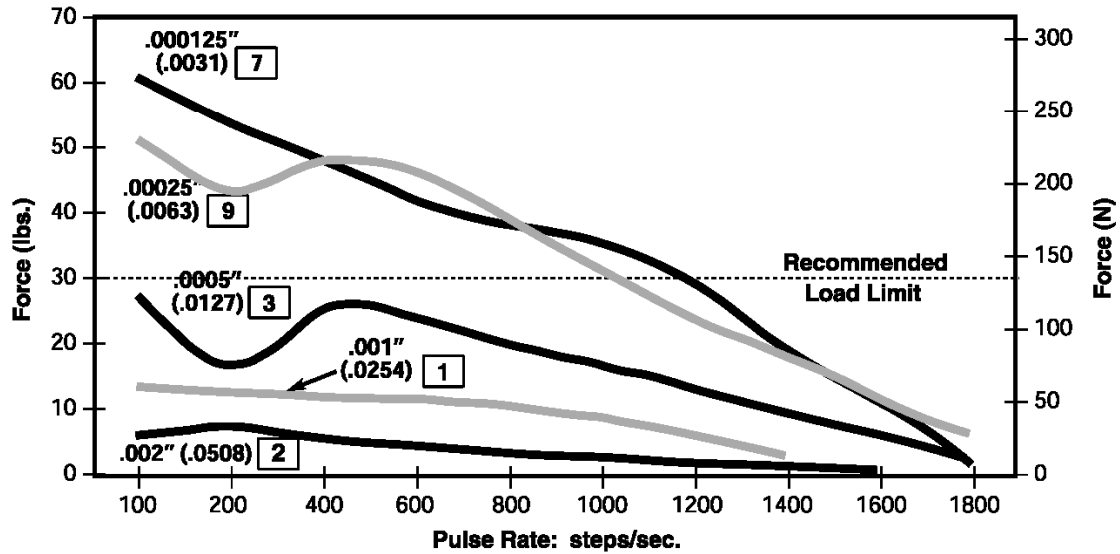
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

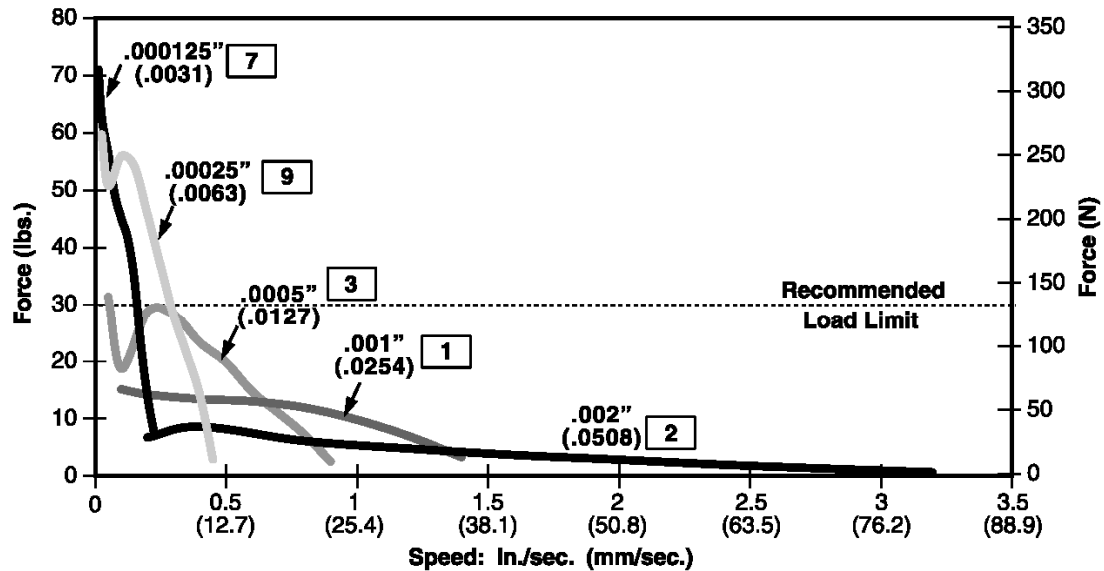
# Series 28000 Size 11 Double Stack Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle Ø .187 (4.75) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .187 (4.75) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

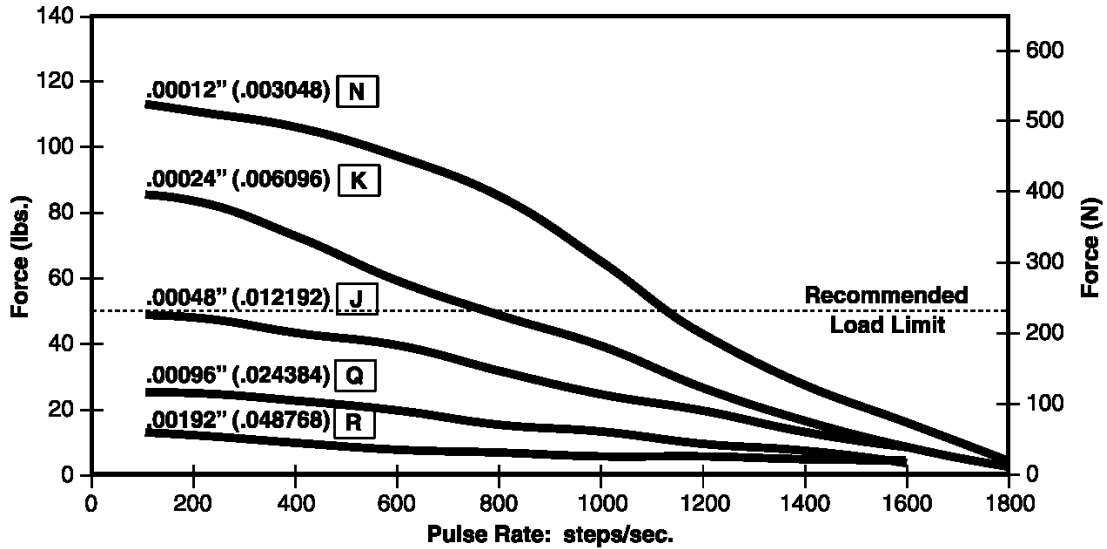
With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Series 35000 Size 14 Speed Curves

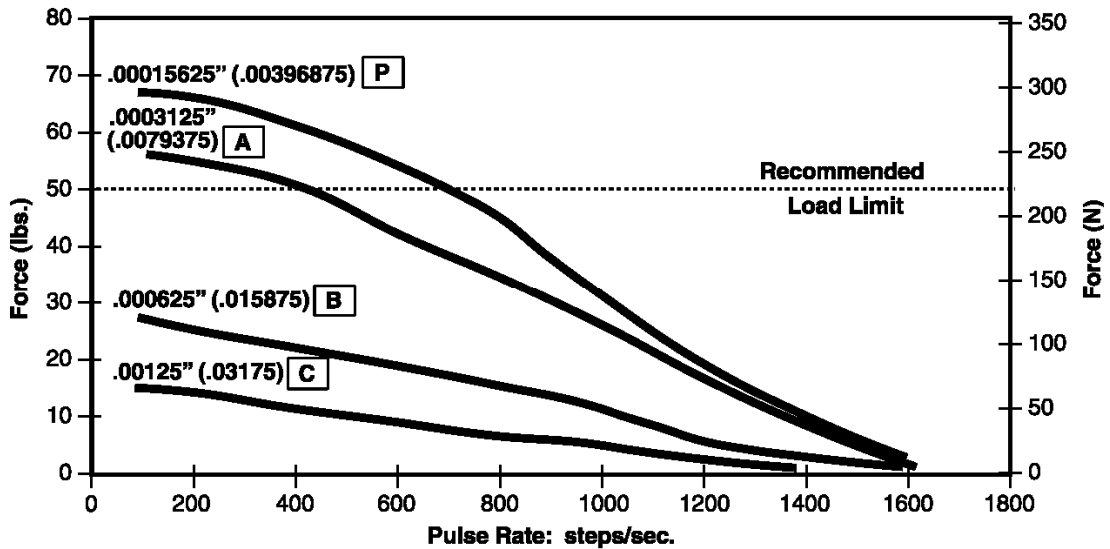
HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle

### Ø .218 (5.54) Leadscrew



### Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

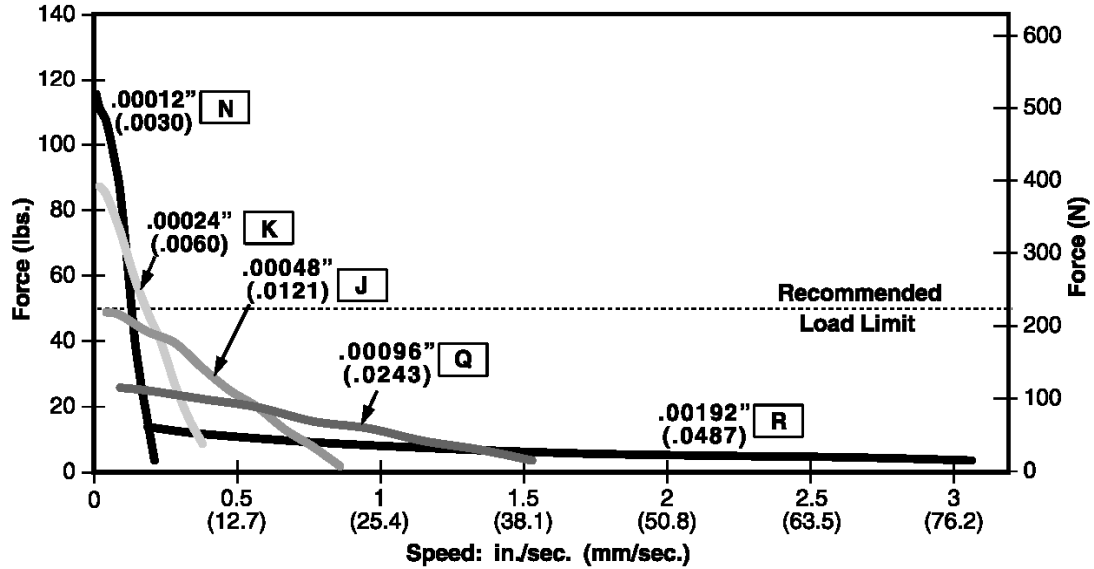
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

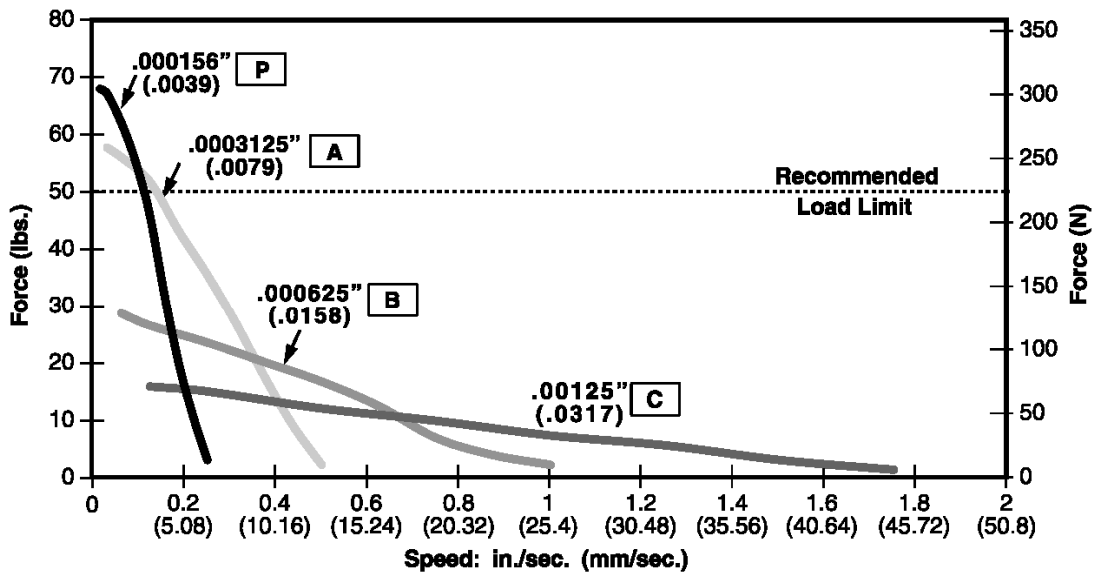
# Series 35000 Size 14 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .218 (5.54) Leadscrew



## Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

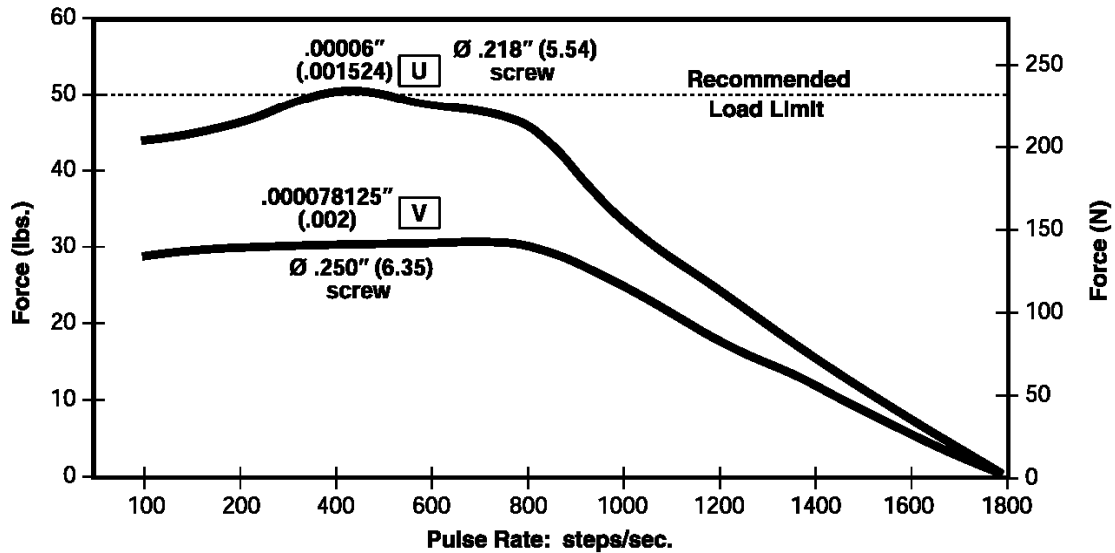
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

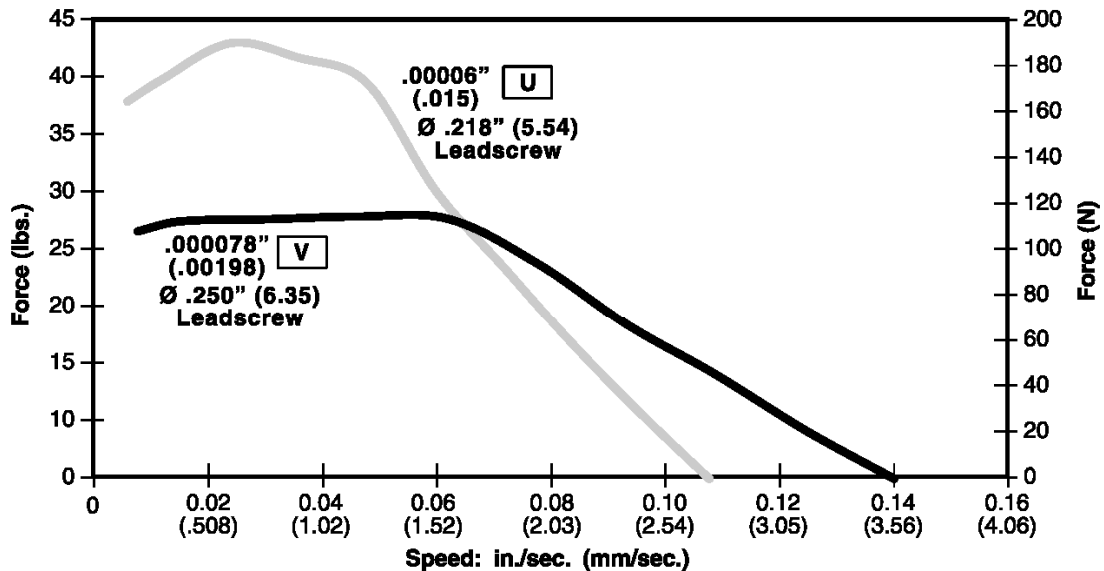
# Series 35000 Size 14 Hi-Res Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

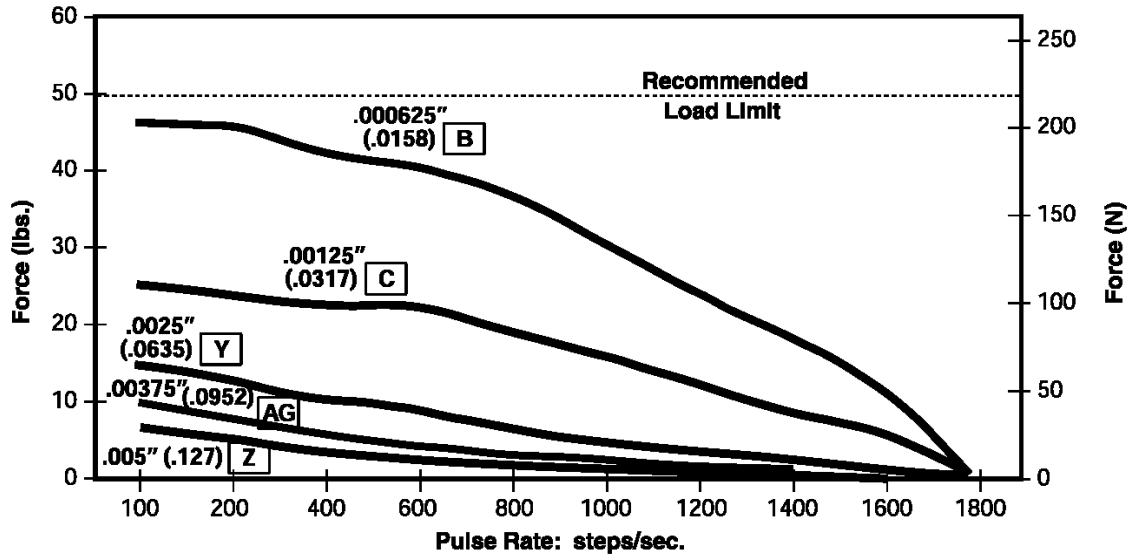
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

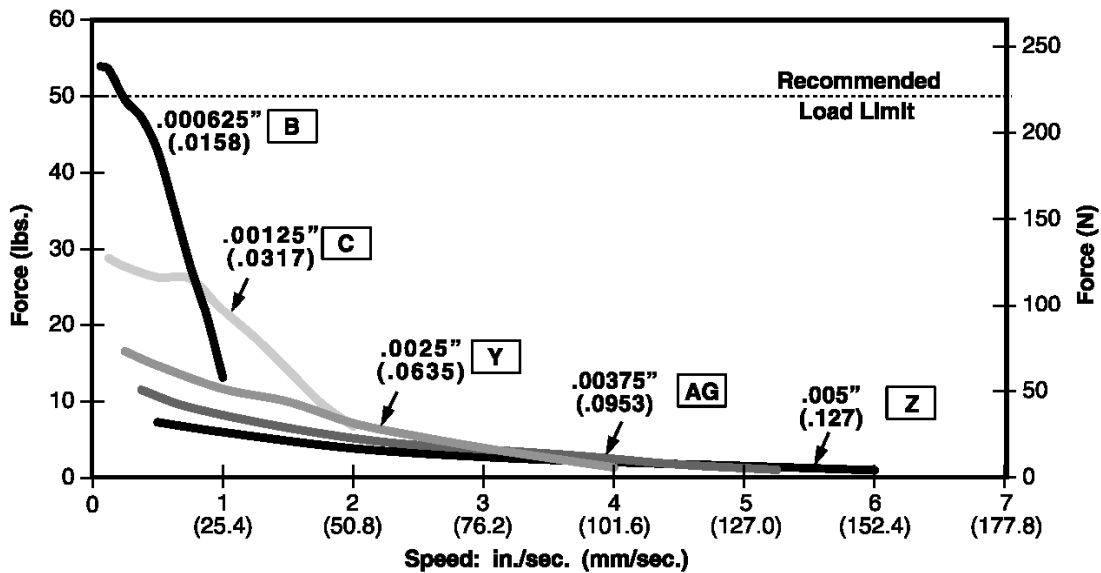
# Series 35000 Size 14 Double Stack Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle Ø .250 (6.35) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

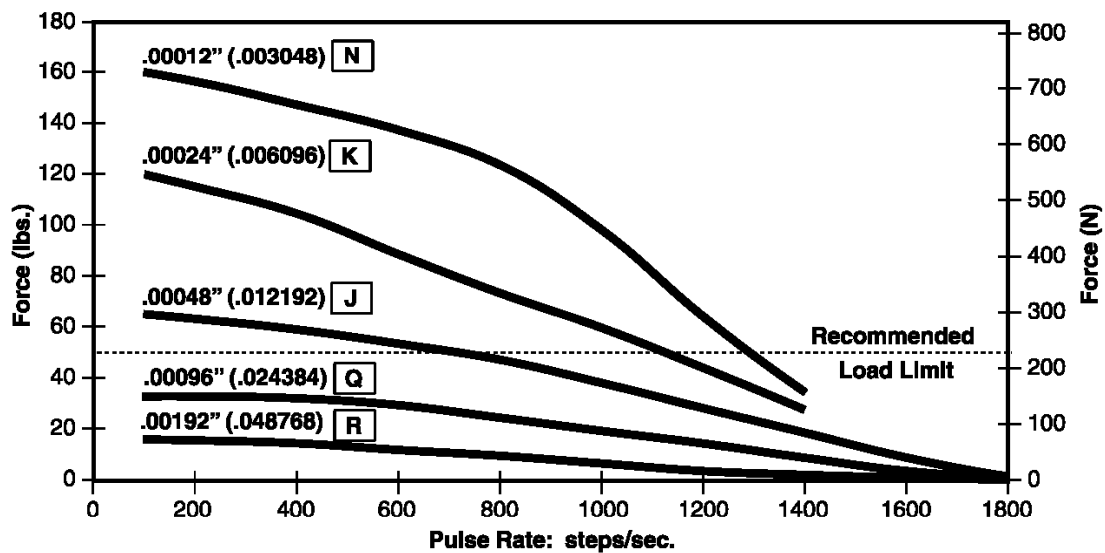
With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Series 43000 Size 17 Speed Curves

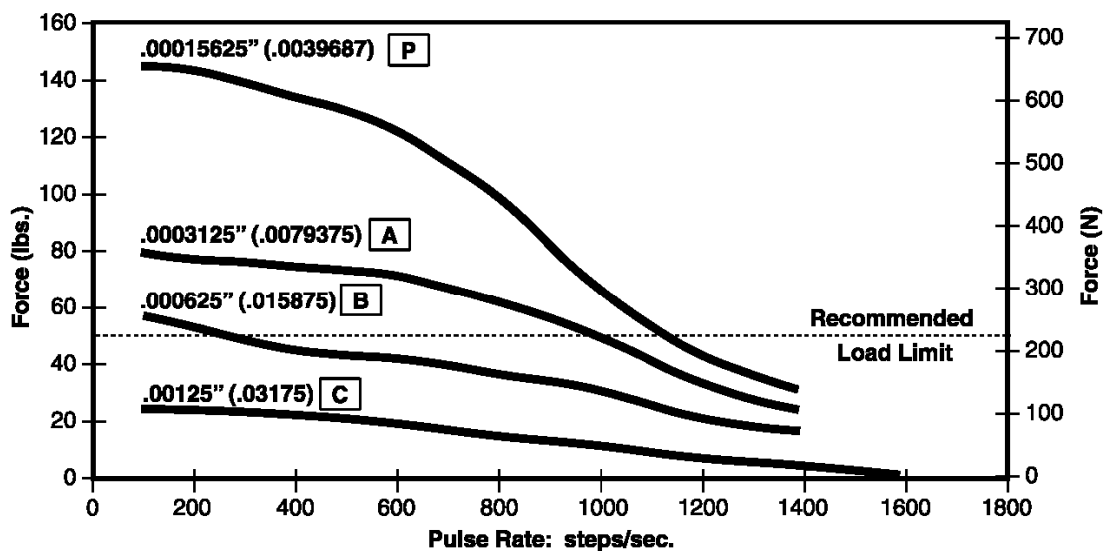
HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle

### Ø .218 (5.54) Leadscrew



### Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

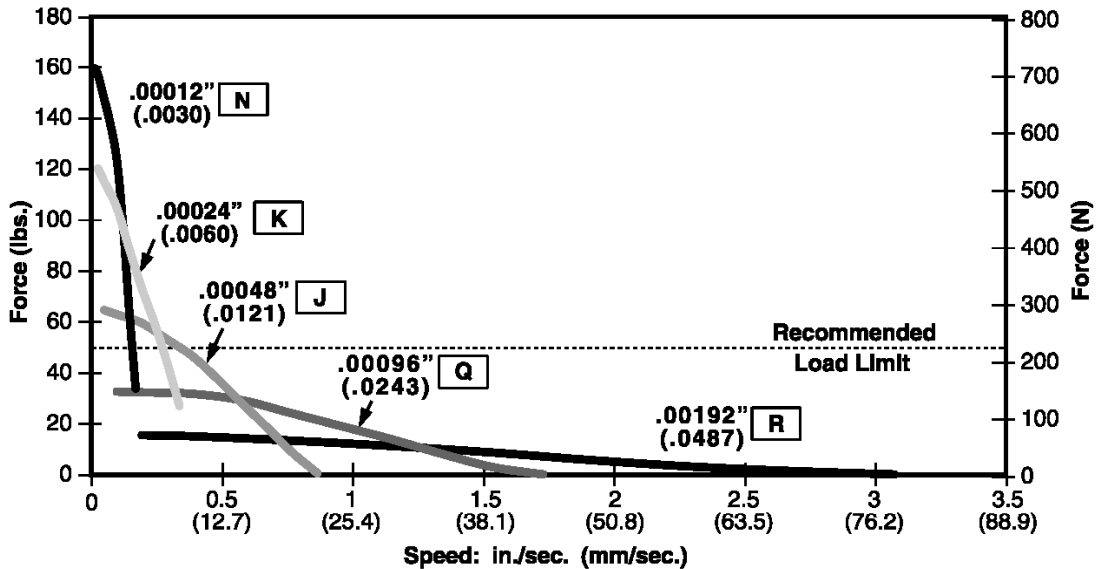
With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Series 43000 Size 17 Speed Curves

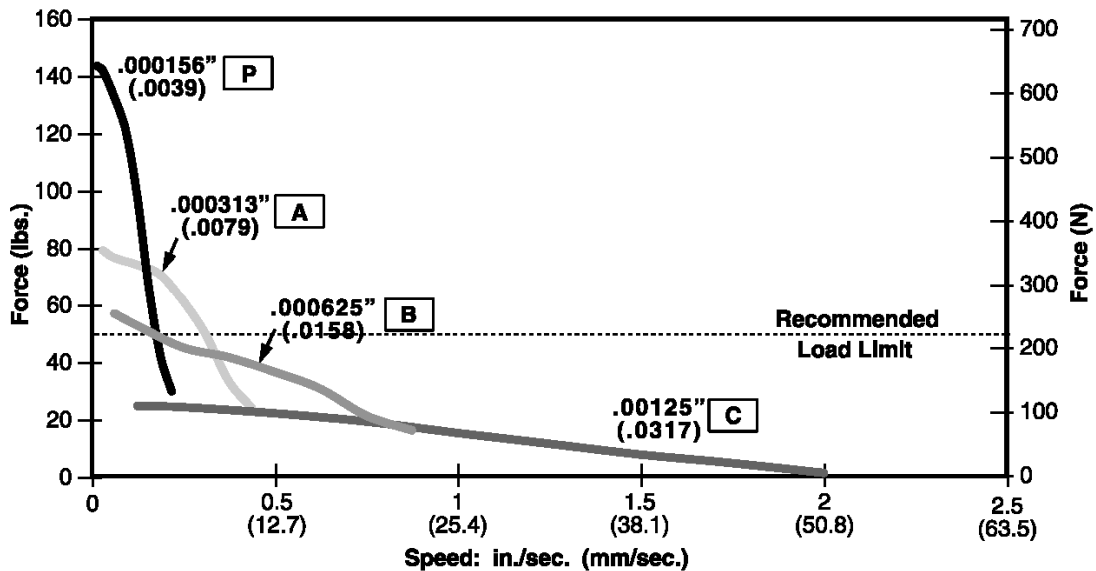
HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle

### Ø .218 (5.54) Leadscrew



### Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

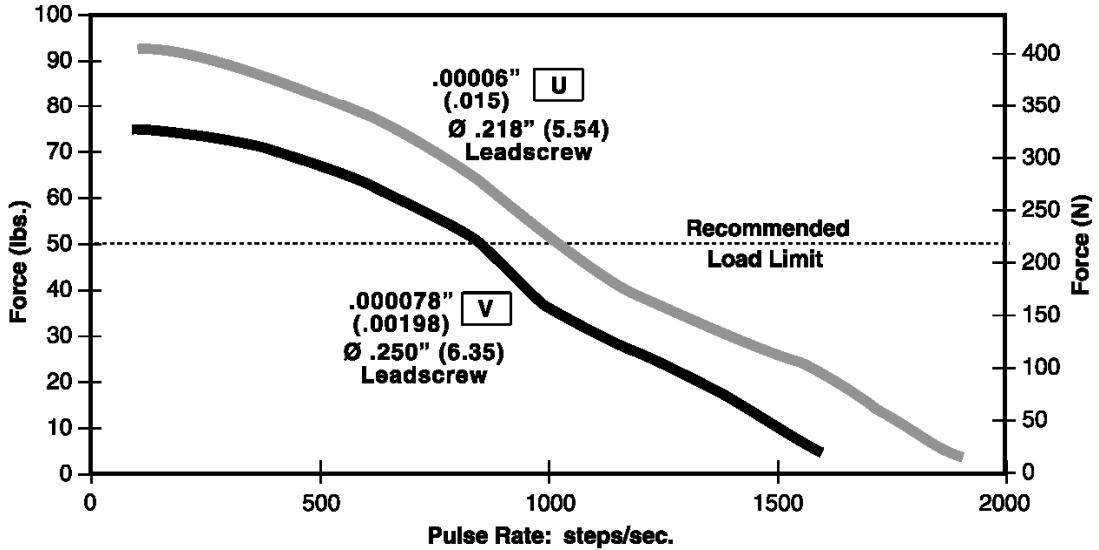
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

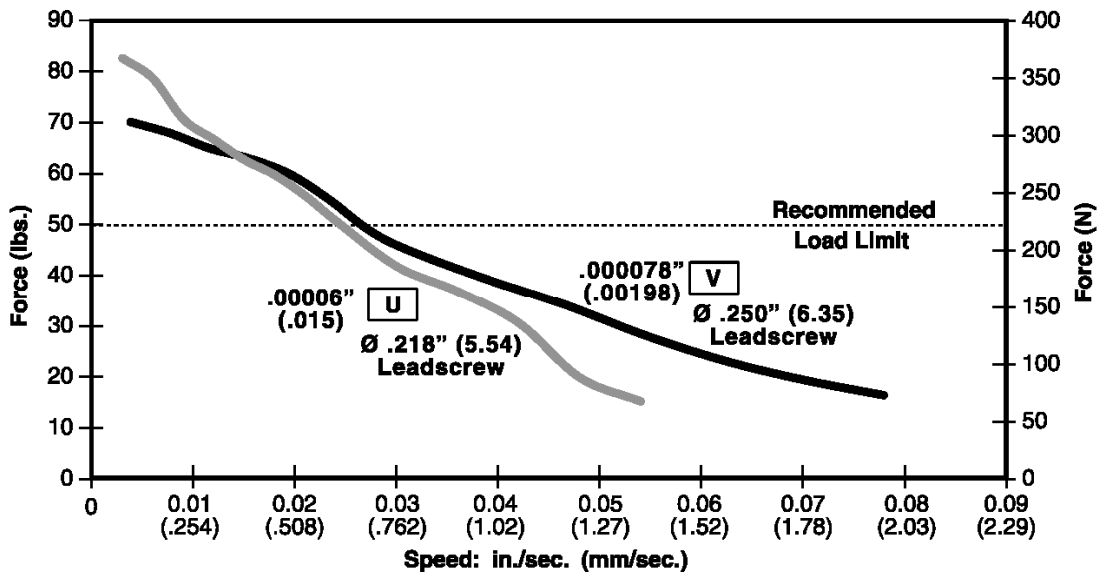
# Series 43000 Size 17 Hi-Res Speed Curves

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## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

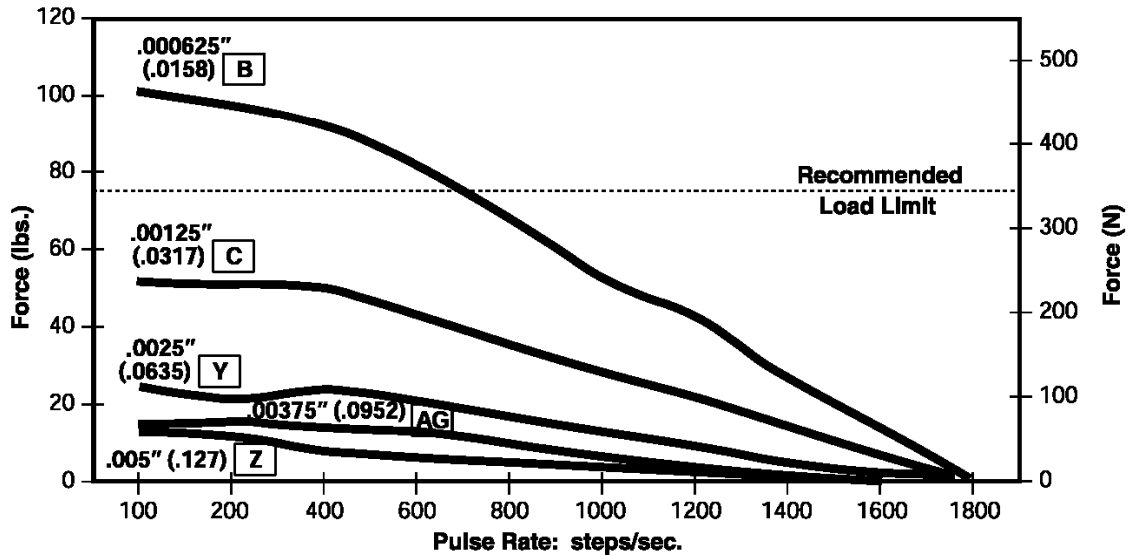
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

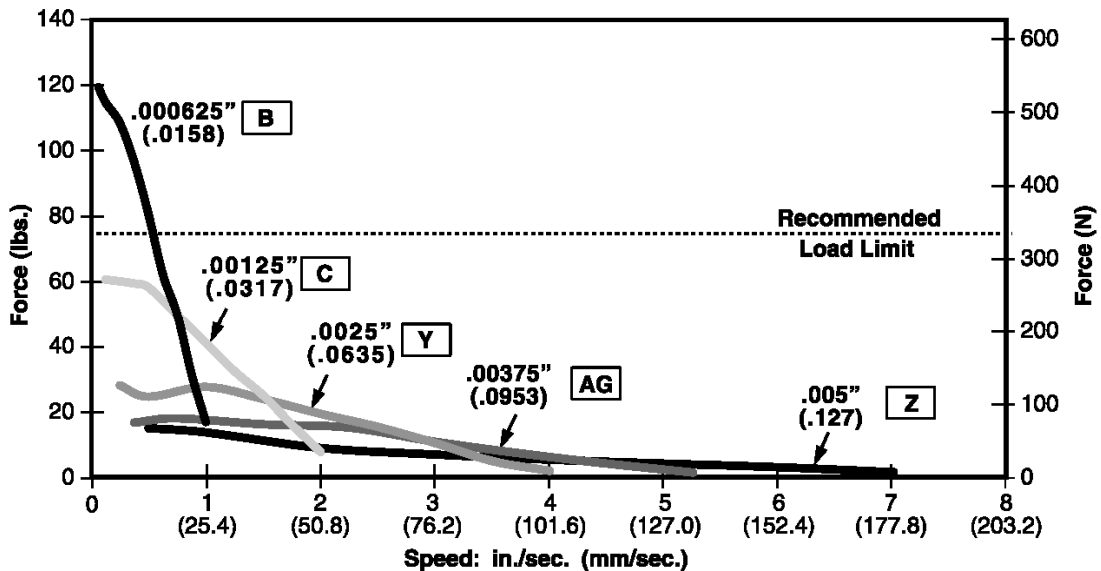
# Series 43000 Size 17 Double Stack Speed Curves

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## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle Ø .250 (6.35) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .250 (6.35) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

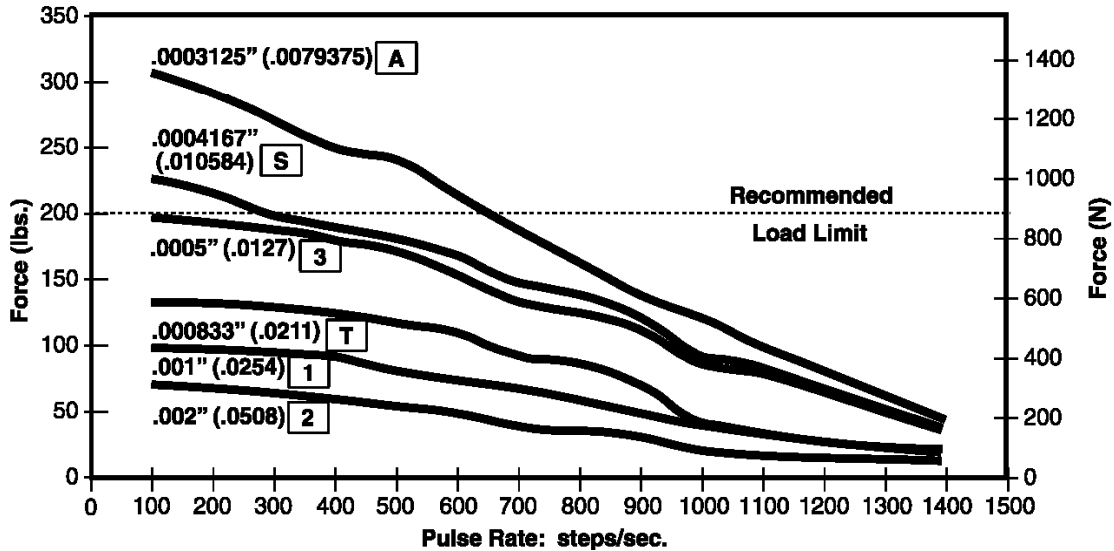
With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Series 57000 Size 23 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

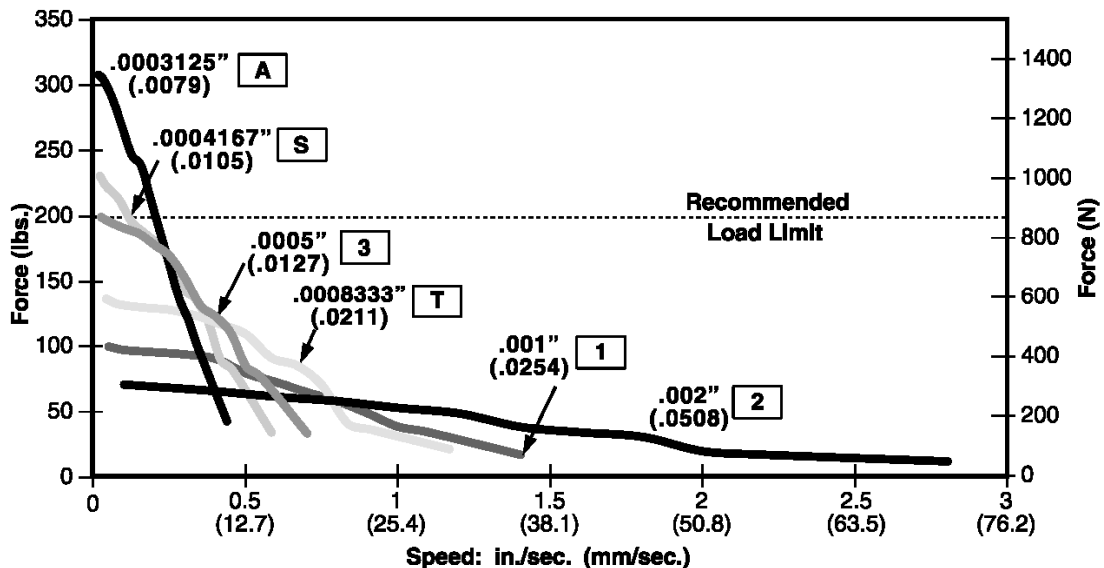
## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle

### Ø .375 (9.53) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle

### Ø .375 (9.53) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

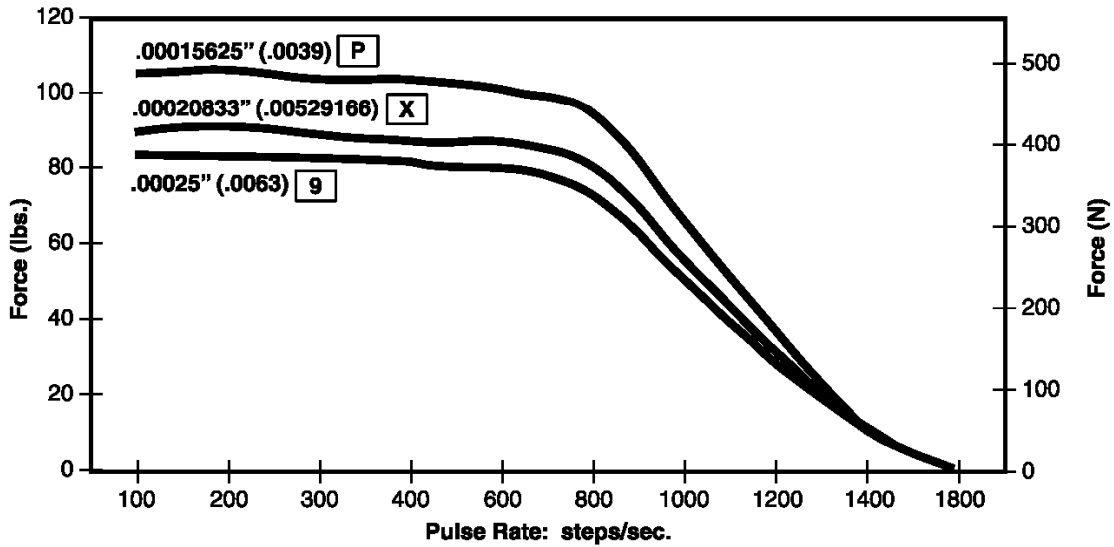
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

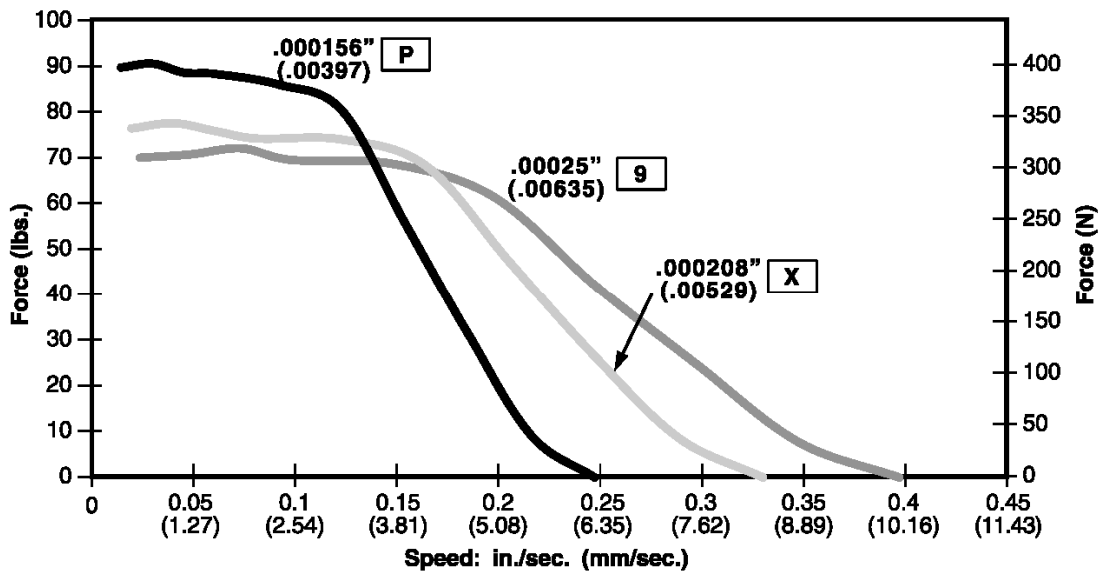
# Series 57000 Size 23 Hi-Res Speed Curves

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## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

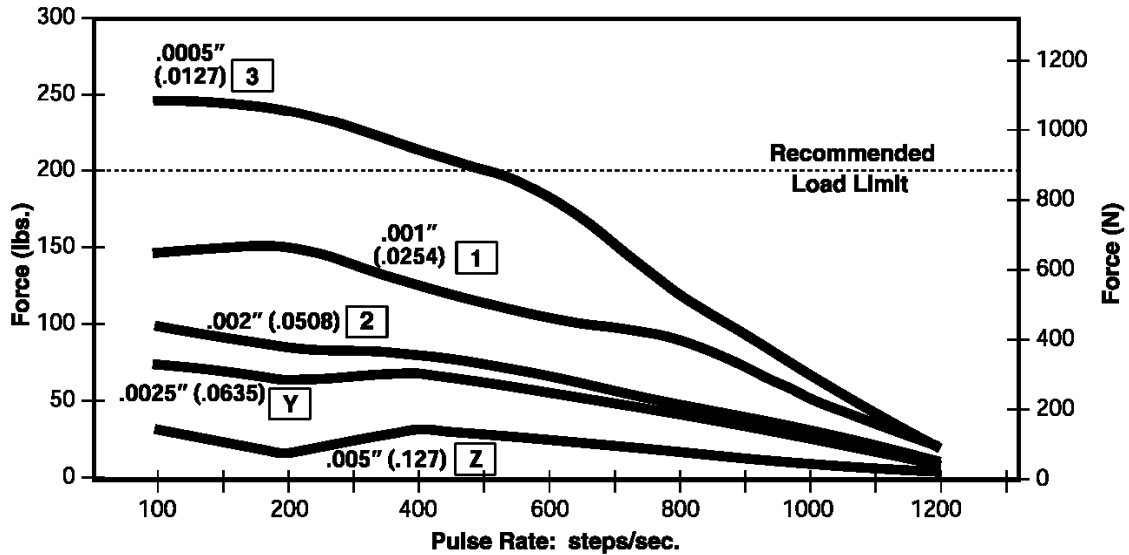
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

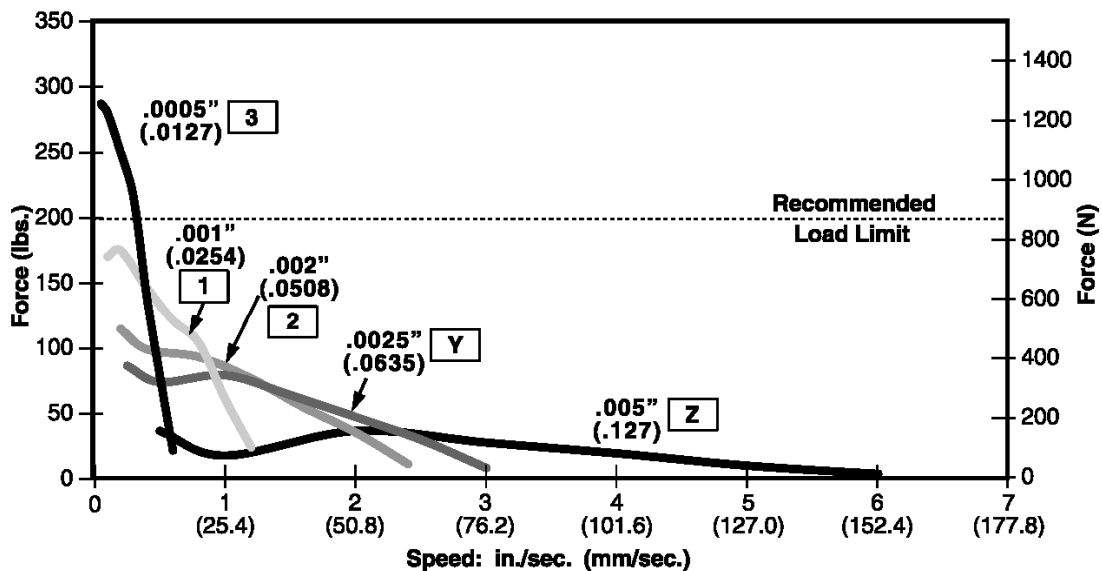
# Series 57000 Size 23 Double Stack Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## THRUST vs STEP/TIME Bipolar • Chopper • 100% Duty Cycle Ø .375 (9.53) Leadscrew



## FORCE vs TRAVEL/TIME Bipolar • Chopper • 100% Duty Cycle Ø .375 (9.53) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

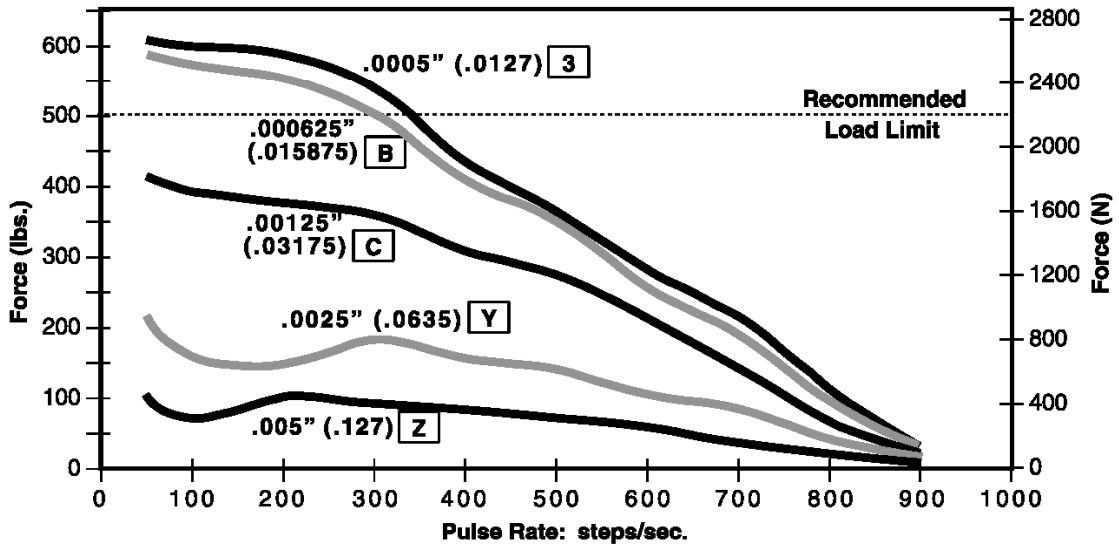
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

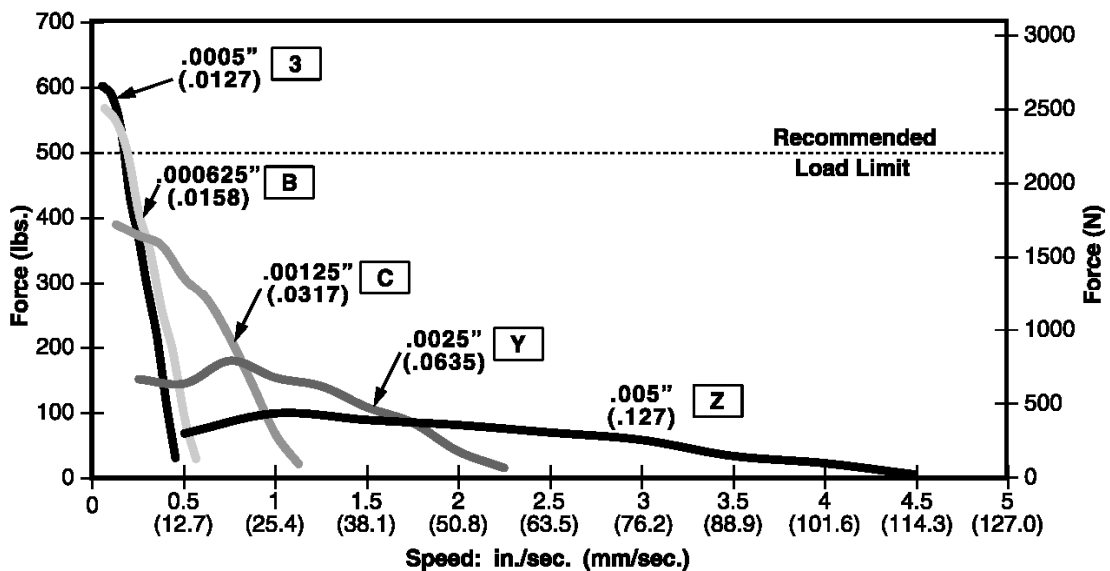
# Series 87000 Size 34 Speed Curves

HAYDON SWITCH & INSTRUMENT, INC. • 800.243.2715 (203.756.7441) • WWW.HSI-INC.COM

## FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle Ø .625 (15.88) Leadscrew



## FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle Ø .625 (15.88) Leadscrew



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

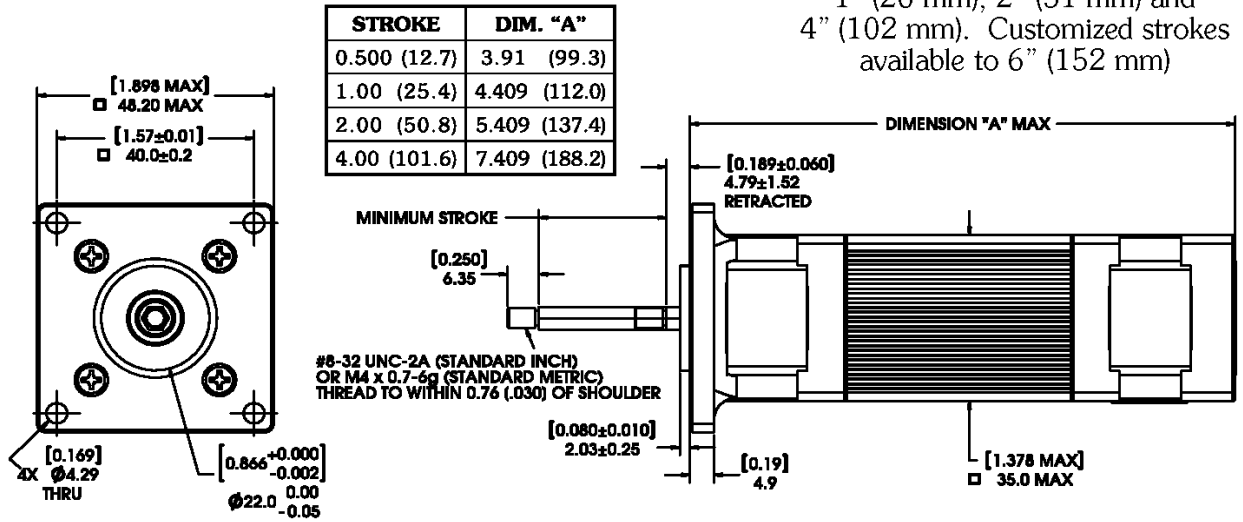
Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Size 14 Dual Motion Actuator Dimensional Drawing

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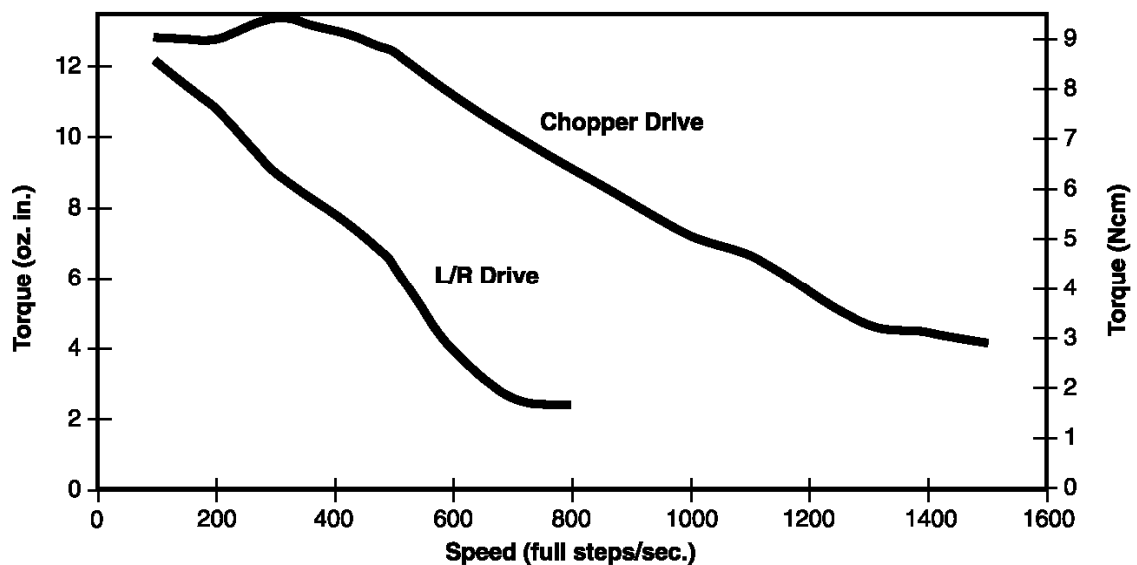
Standard strokes available:  
1" (26 mm), 2" (51 mm) and  
4" (102 mm). Customized strokes  
available to 6" (152 mm)



## Size 14 Dual Motion Actuator Speed vs. Torque

### Size 14 • Rotary Function • Bipolar • 100% Duty Cycle

For speed/force curves for Linear Actuators Size 14, see pages 41 and 42.



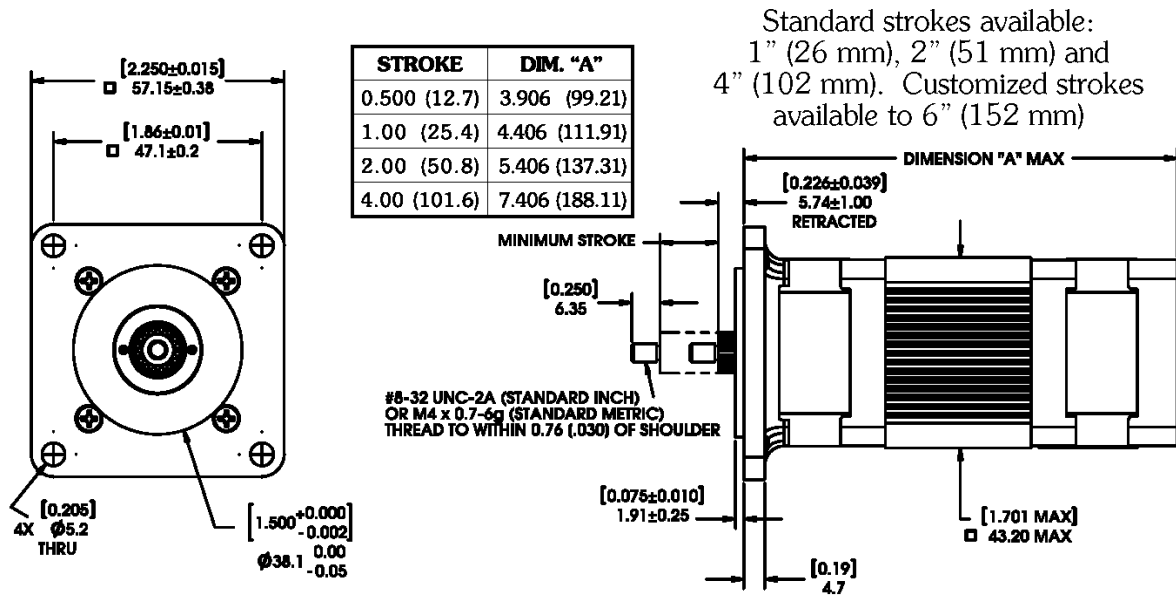
NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.

# Size 17 Dual Motion Actuator Dimensional Drawing

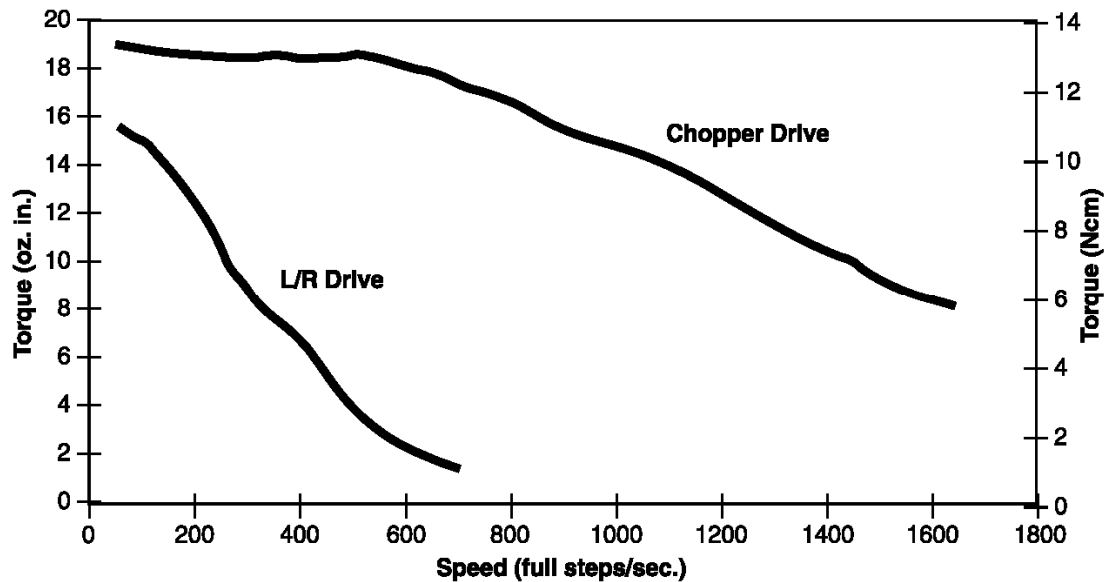
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## Size 17 Dual Motion Actuator Speed vs. Torque

### Size 17 • Rotary Function • Bipolar • 100% Duty Cycle

For speed/force curves for Linear Actuators Size 17, see pages 52 and 53.



NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.