Custom options availability varies depending on the requested customization and quantity. Contact us for details.

#### **Custom harness**

Connectors, cable ties, and plastic tubing can be added.



#### **Custom shaft**

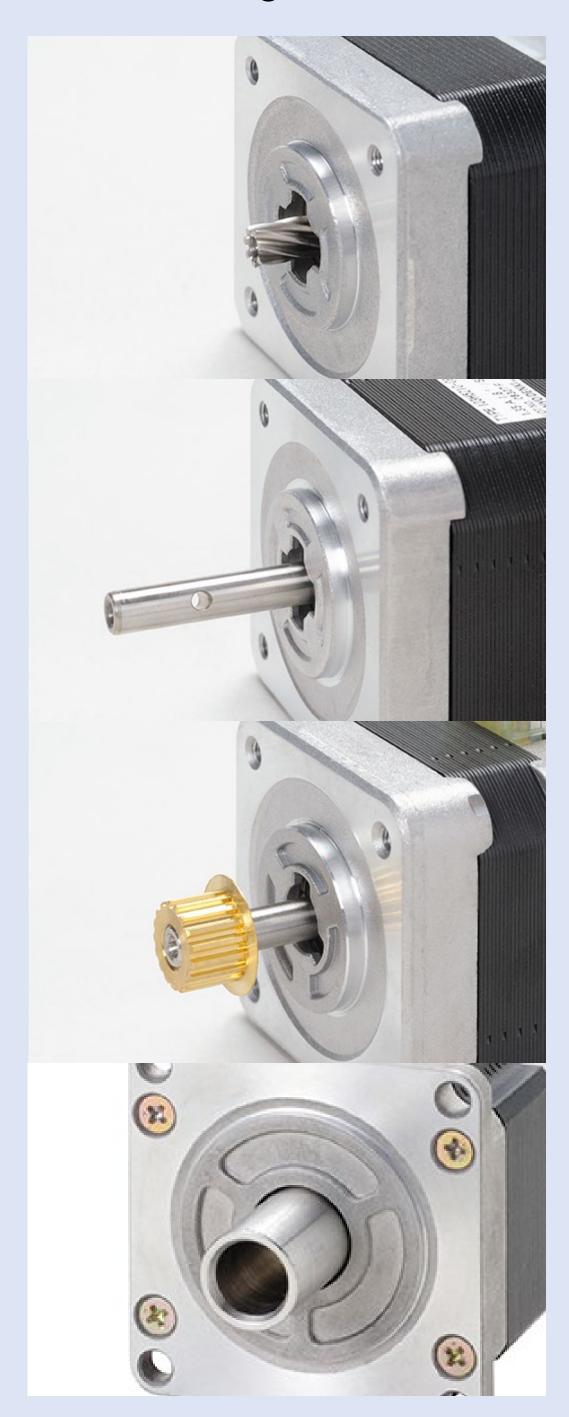
We also offer custom options such as D-shaped shaft, addition of keyway and through-holes, and mounting of gear and pulley. The shaft can be made a hollow shaft for routing cables and air.

Cog wheel customization

Through-hole customization

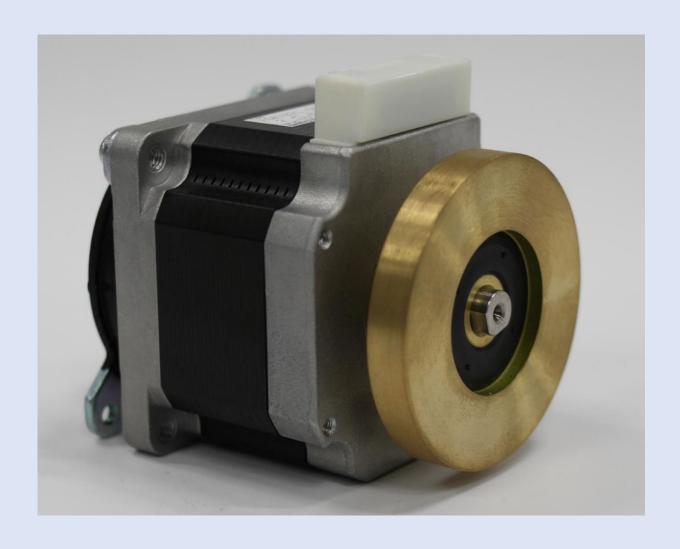
Pulley customization

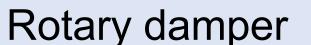
Hollow shaft



### Rotary damper and surface mount damper

A damper can be added to reduce vibrations when rotating.



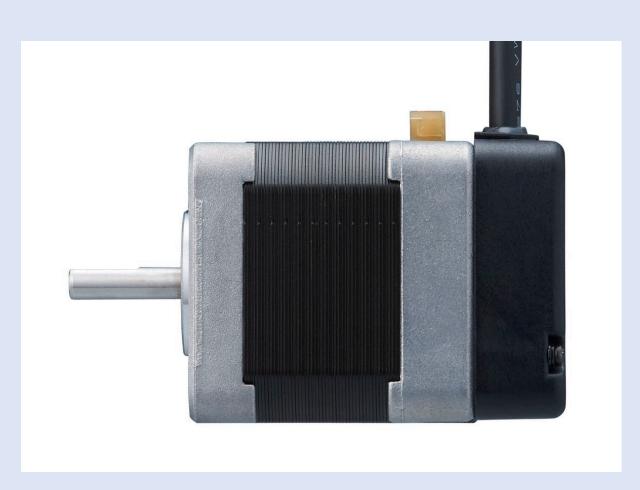




Surface mount damper

#### Gears, encoders, and brake

- A gear can be added for applications where a high load torque is exerted at low speeds.
- An encoder can be added for detecting motor position and speed.
- A brake can be added to hold the motor position at rest.



With encoder



With gear

## STEPPING MOTOR with ENCODER

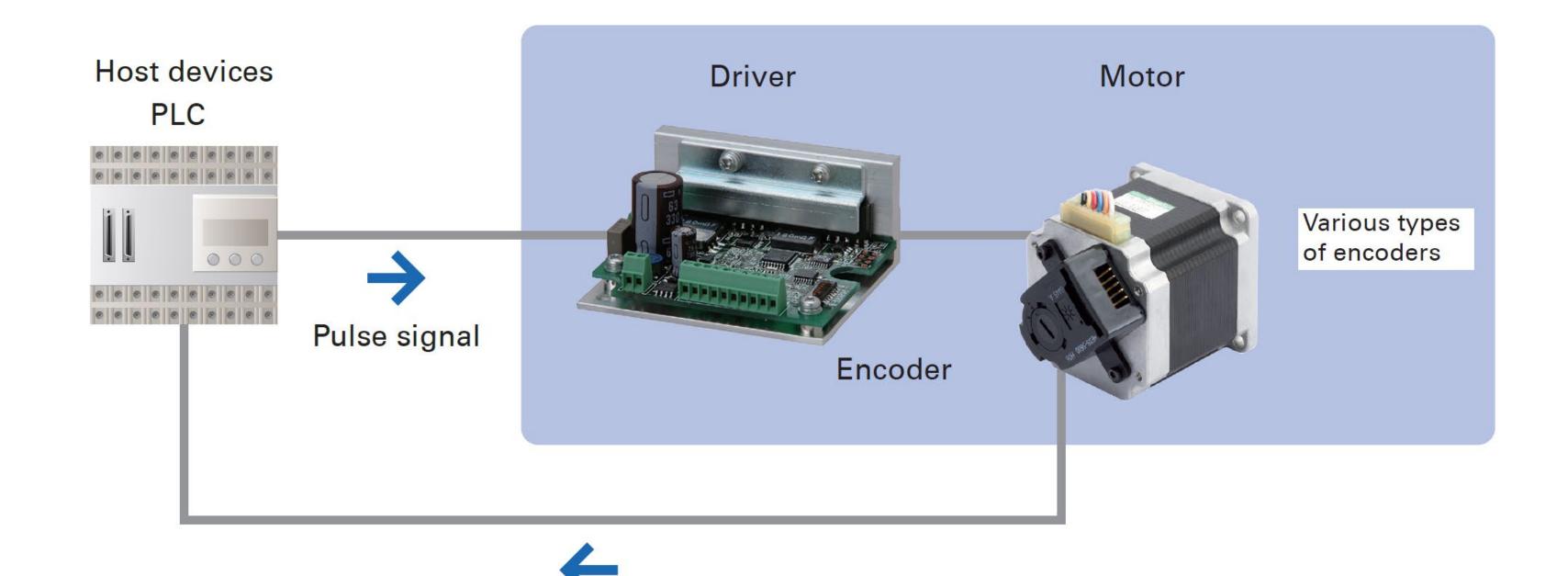
SANYO DENKI EUROPE SA.



### When open-loop control is not enough

There's a risk of desynchronization or position error...

Stepping systems provide precise positioning with easy control. By adding an encoder to a stepping motor, the controller can monitor the actual position directly, closing the feedback loop and improving the safety and reliability.



### **Features**

### 1. Safety: Position verification

Adding an encoder is an ideal and easy solution for safety-sensitive applications, requiring position verification and position maintenance, such as medical instrumentation.

### 2. Reliability: Stall Detection

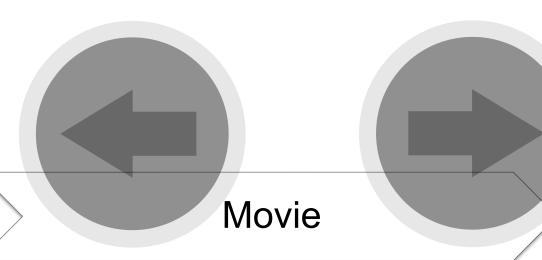
Device reliability is improved with possible detection and reporting of stalls.

## 3. Closed-loop control with stepper benefit

High-end closed loop control can be achieved while keeping the advantages of stepping motors: stable stop without hunting, higher torque than DC servo motor at low speed over the same size, eliminating the need of gearboxes.

## 4. Accurate Homing

Encoder with index pulse option can be used to achieve precise homing.



STEPPING MOTOR with ENCODER

Encoder output signal

# STEPPING MOTOR with ENCODER

### SANYO DENKI EUROPE SA.

### **Product Lineup**

#### Stepping Motors

Basic step angle	Motor size	Holding torque [Nm min.] Model number
1.8°	35 mm sq.	0.195 to 0.23 2H35□
0.9°	42 mm sq.	0.23 2P42□
1.8°	42 mm sq.	0.26 to 0.42 2H42□
1.8°	56 mm sq.	0.83 to 2 2H56□
1.8°	60 mm sq.	0.88 to 2.7 2H60□
1.8°	86 mm sq.	3.3 to 9 2H86□

#### Incremental Optical Encoders

Encoder type	CPR	Index option	Output type	Features
R type	200		single ended	Compact size Simple interface Cost effective
S type	400		single ended	Medium resolution Pulse index option Simple interface
M type	1000 1024		single ended	High resolution Pulse index option Simple interface
L type	400		line driver	Noise immunity Transmitting encoder signal over a long distance

Other types of motors and encoders on demand.









Movie

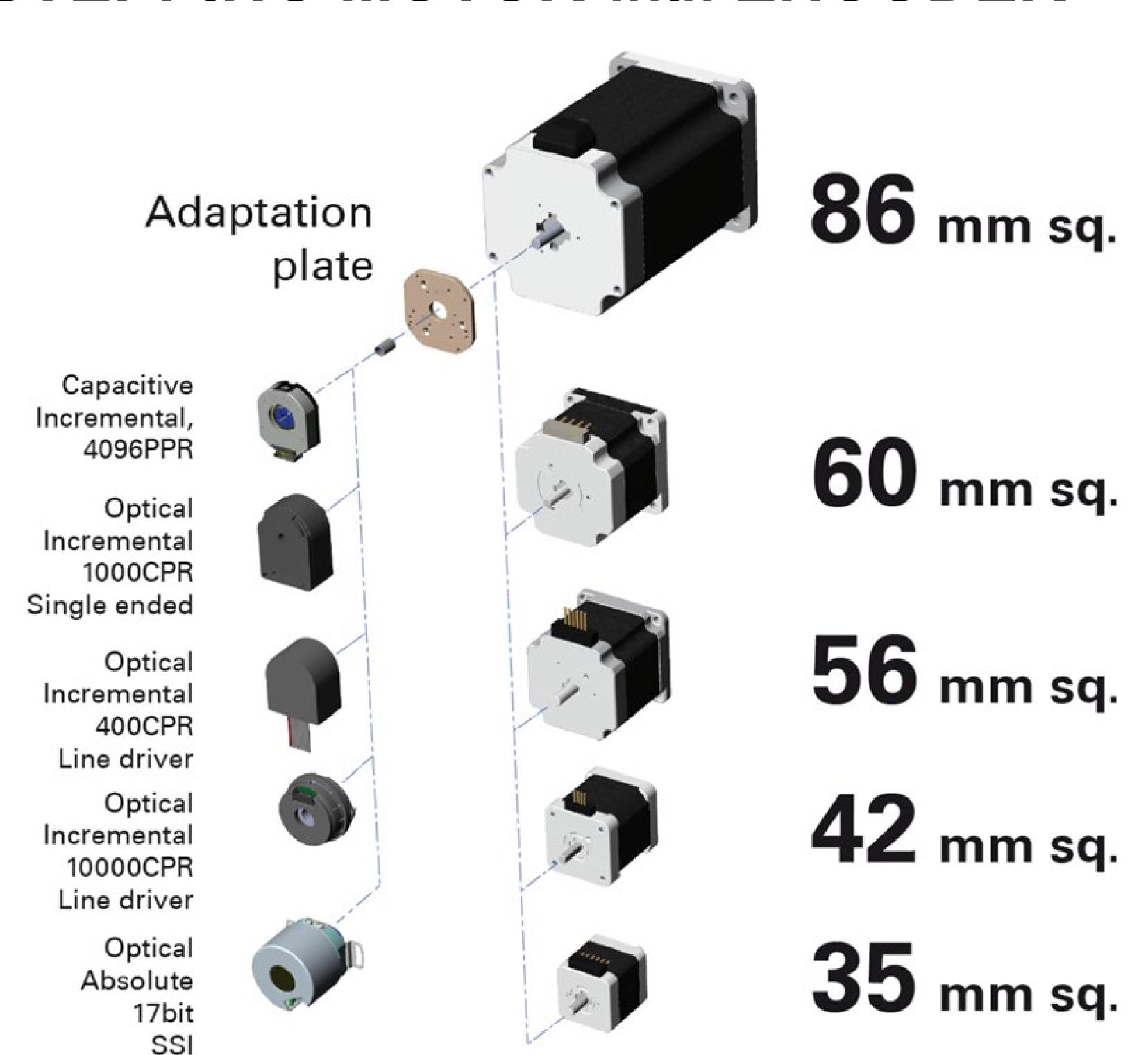


Features

Quick Customization Service STEPPING MOTOR with LEADSCREW

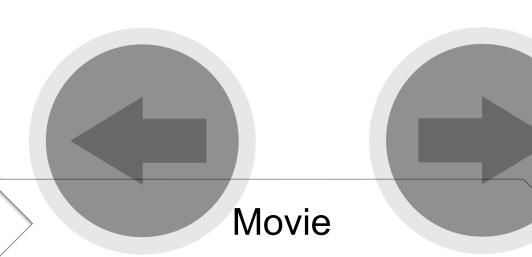
# STEPPING MOTOR with ENCODER

### SANYO DENKI EUROPE SA.



## **Quick Customization Service**

With our extensive experience in designing and manufacturing custom stepping motors with encoder systems, our stepping motors can be easily customized to mount almost any types of encoders thanks to specific adaptation plates.

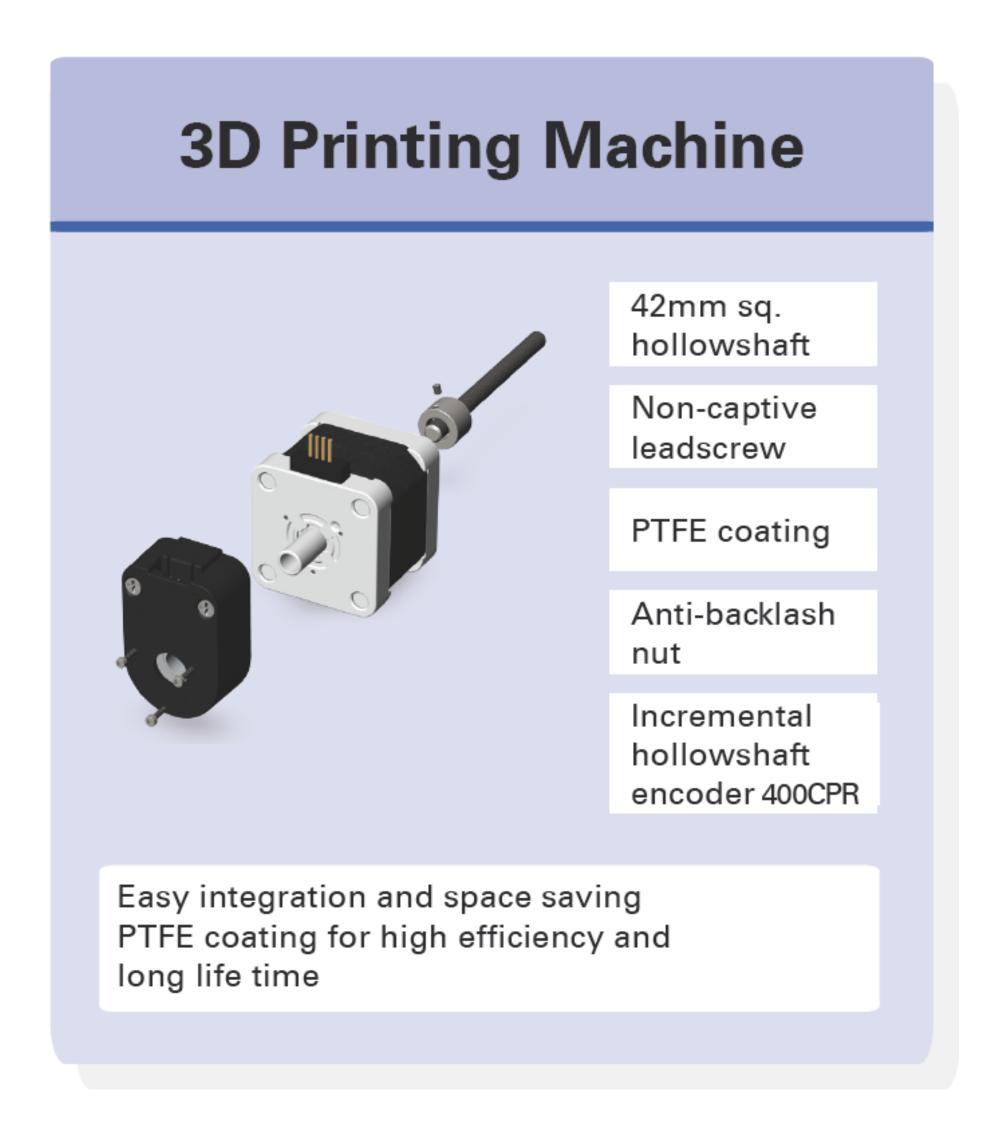


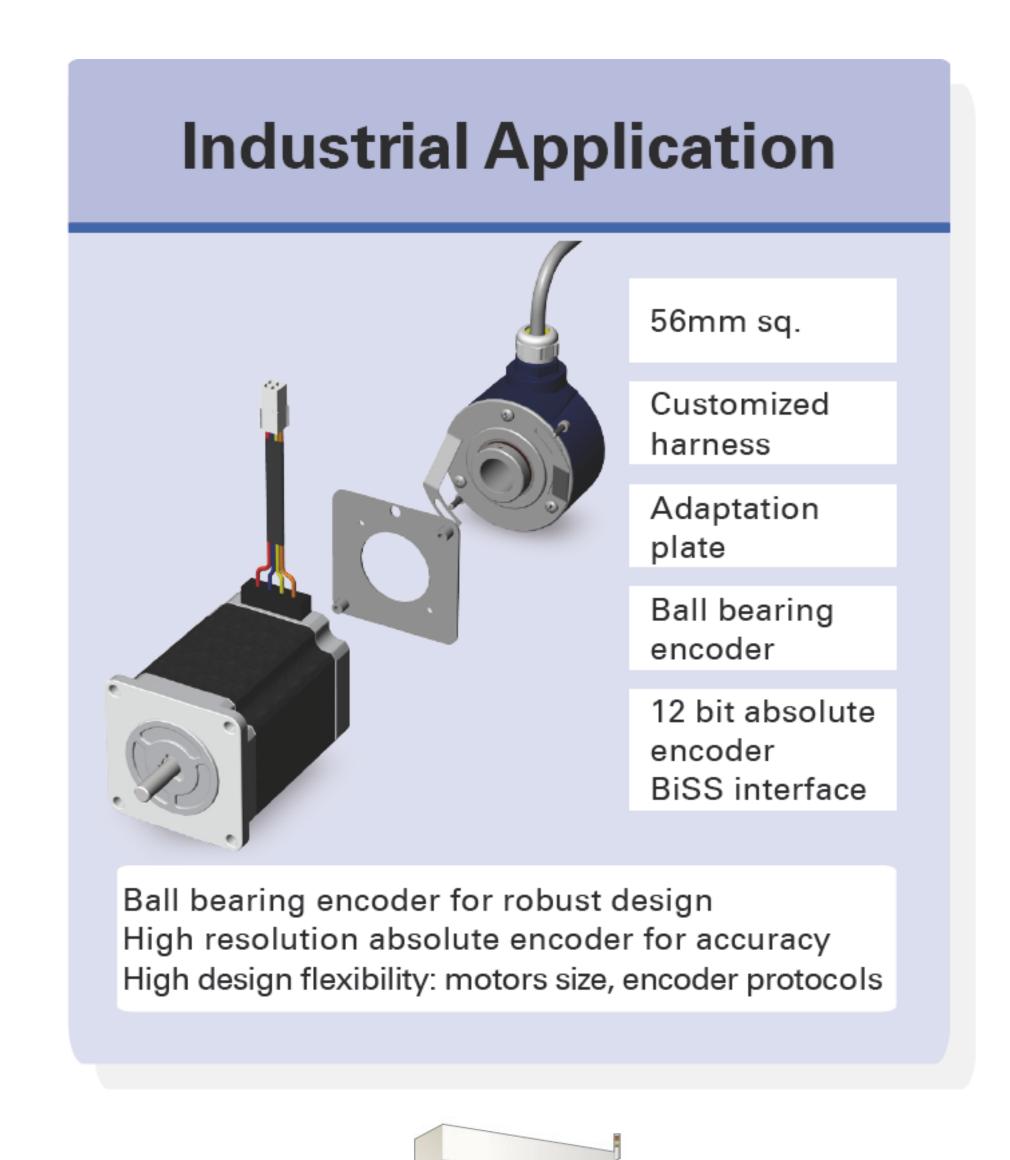
STEPPING MOTOR with LEADSCREW

## STEPPING MOTOR with ENCODER

### SANYO DENKI EUROPE SA.

### **Application Examples**







Medical Instrumentation



3D Printing

Industrial machine



Features

Lineup

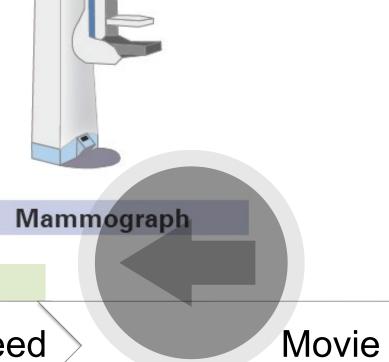
**Quick Customization** Service

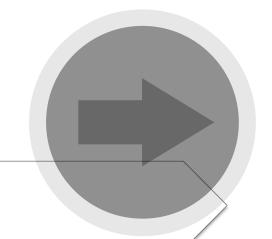
**Application Examples** 

STEPPING MOTOR with LEADSCREW Linear Actuator

We customize per your need

**Blood Analyser** 

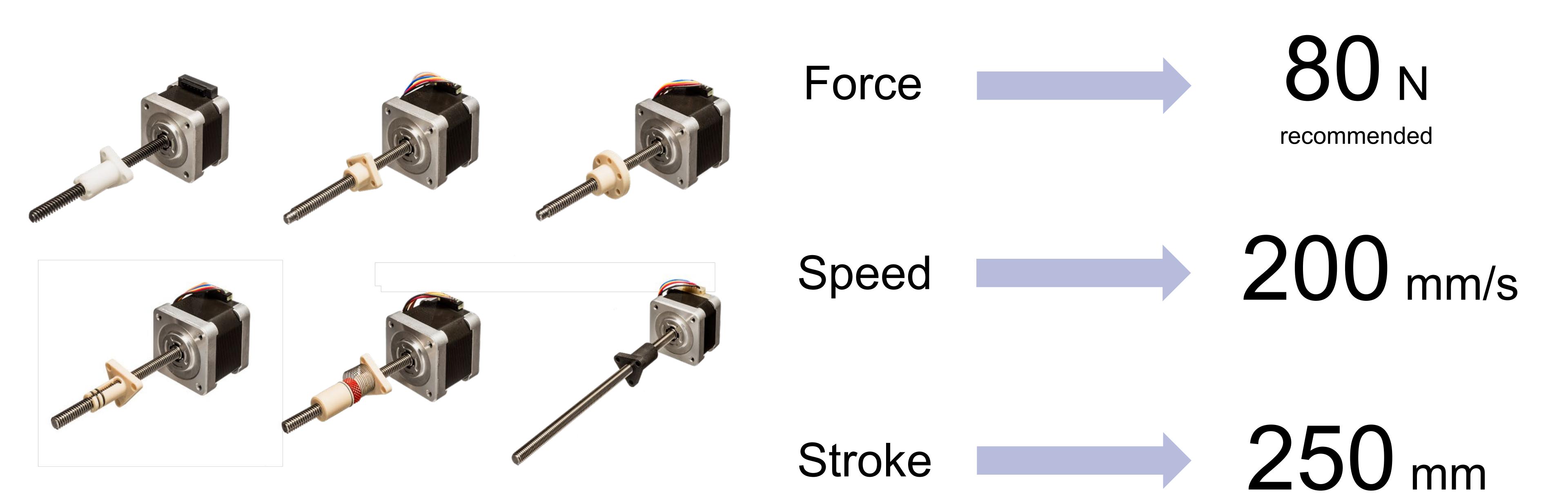




# STEPPING MOTOR with Actuator

SANYO DENKI EUROPE SA.

## **Linear Actuator**



Features

# STEPPING MOTOR with Actuator

### SANYO DENKI EUROPE SA.

## We customize per your need







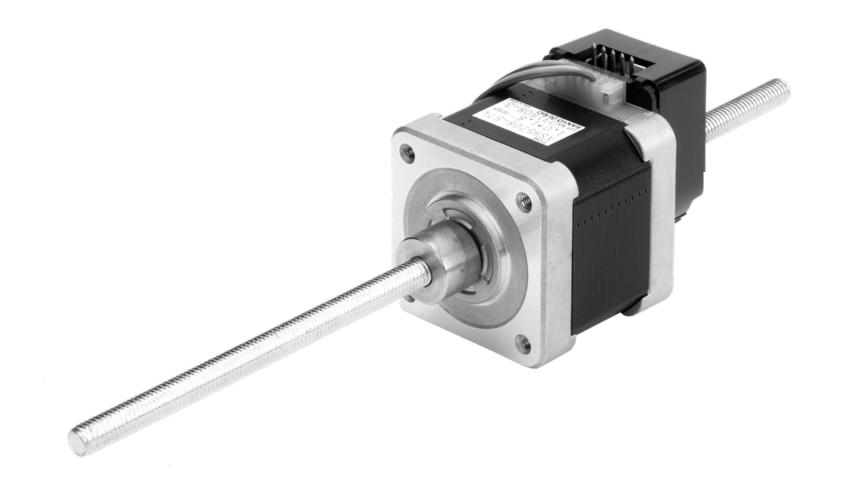




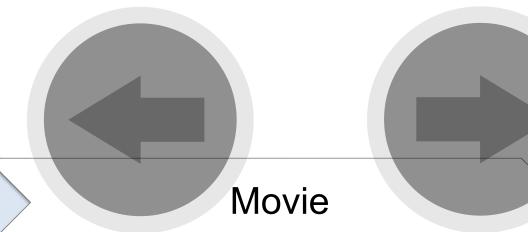


A wide range of nuts with or without backlash adjustment

A wide range of screws with many different pitches and TFE coating options.



Non Captive Linear Actuator + Encoder



Linear Actuator