

HFD SYSTEM™

AUTO ALIGNING & TENSIONING
FLAT BELT SYSTEM



BANDO



**P R E M I U M
POWER TRANSMISSION PRODUCTS**

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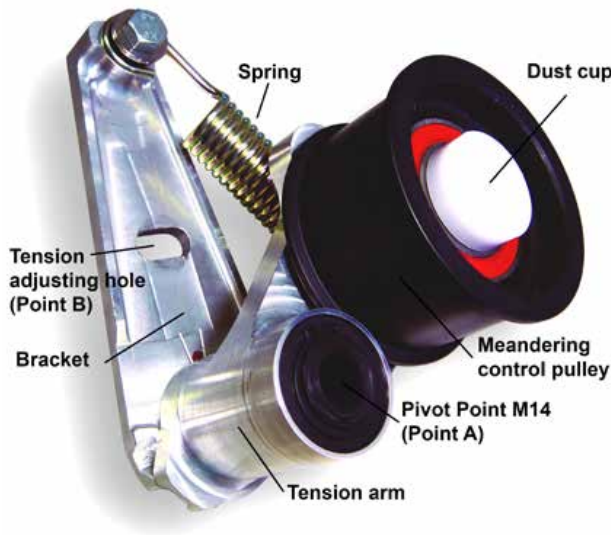
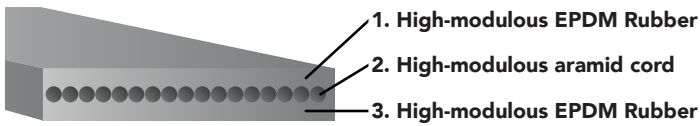
HFD™ (HYPER FLAT DRIVE) PRODUCT CONCEPT

- At Bando, we refined our Flat Belt with further improved transmission capability.
- We developed a meandering control and prevention device that autonomously controls the belt running position.
- By combining that device with our auto-tensioner technology, we overcame the belt side-tracking and tension problems.

FEATURES

- Operation with ideal tension and improved transmission efficiency, leading to energy savings and CO² reduction.
- Maintenance-free due to the longer service life and tension control by the auto-tensioner.
- Thin belt construction allows for very low bending distortion.
- Compact layouts are possible because reverse bending has no influence on the durability.

STRUCTURE

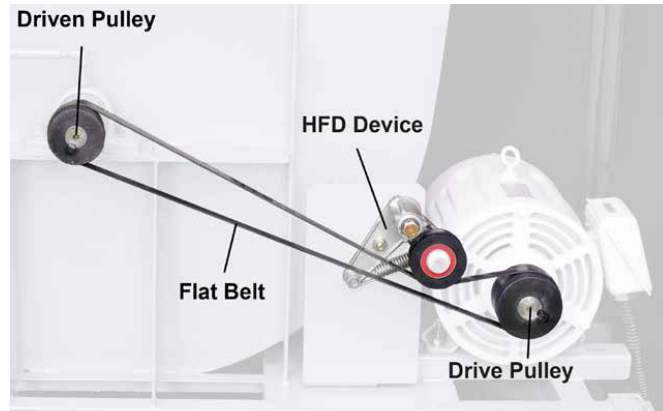


The Flat Belt is constructed of EPDM rubber. Bando has made full use of the cord design technology to create a very efficient power transmission belt.

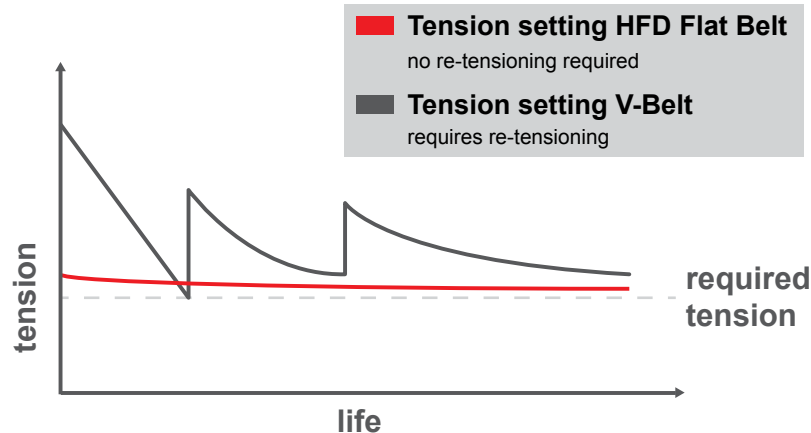
By installing the automatic tension and meandering device, an autonomous control system for the flat belt and pulley is created. Therefore a maintenance-free system is created.

The tension pulley is fixed in Point A (Pivot Point) and the requested tension adjustment can be done by the elongated hole in Point B. After the positions A and B are fixed, the device can operate as a self-control tension and meandering system.

INSTALLED EXAMPLE

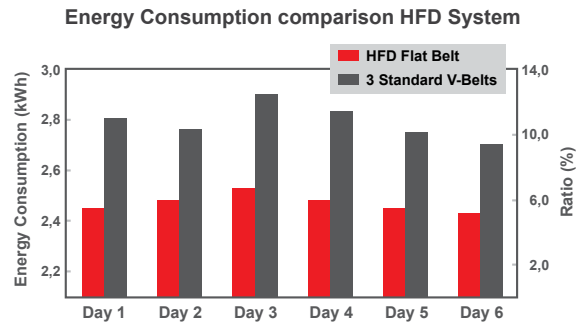
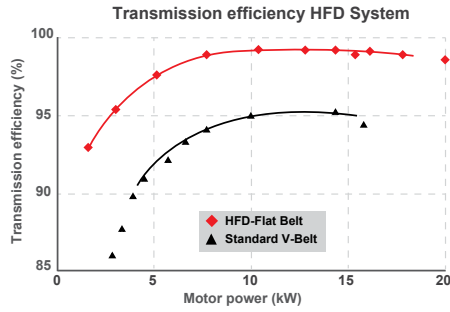


MAINTENANCE FREE



TRANSMISSION EFFICIENCY

Results of an 7.5 kW blower by comparing 3 parallel running V-belts and one HFS System



PRODUCT RANGE

PRODUCT RANGE	
DEVICE	HORSEPOWER (hp)
Standard Duty	3.0 ~ 30
Heavy Duty	40 ~ 100

FLAT BELT LENGTH (mm)					
600	630	670	710	750	800
850	900	950	1000	1060	1120
1180	1250	1320	1400	1500	1600
1700	1800	1900	2000	2120	2210
2360	2500	2650	2800	3000	

Standard belt width: 30mm and 40mm

HFD Device: Standard pulley width 30 mm and 40 mm

Flat Pulley: All pulleys in the system should be designed as flat pulleys

Flat Belt System Design: The described setting range is designed for a usage from 3 hp to 100 hp engines. All terms of use are depending on the layout and the energy saving requirements. For a usage out of the particularized range please contact Bando and we will design a fit and proper system for you. Please contact our Technical Department at techsupport_bando@bandogrp.com.

ENERGY SAVINGS & CO² REDUCTION

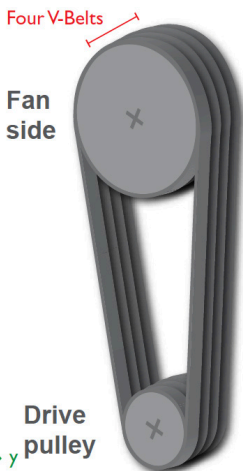
Calculation Example	V-Belt	Bando HFD System	Results /year
Operation Time	24 hours per day / 365 days per year		
Energy Costs	0.21 € / kW h		
Energy Consumption	16.5 kW h	15.26 kW h	-1.24 kW h
Total Energy Costs	16.5 x 24 x 365 x 0.21 = 30,353 € / year	15.26 x 24 x 365 x 0.21 = 28,072 € / year	-2,281€
CO ² Reduction*	0.378 x 16.5 x 24 x 365 = 54,636 kg / year CO ²	0.378 x 15.26 x 24 x 365 = 50,530 kg / year CO²	-4,106kg

*Note: CO² reduction coefficient 0.378 Kg CO² / kW h is according to a report of the ministry of Global Environment Bureau dated July 2003.

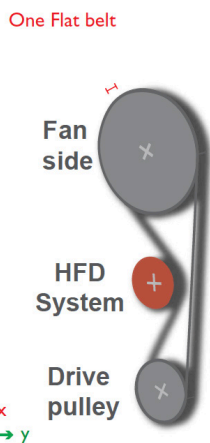
COMPACT DESIGN POSSIBILITIES

Because the HFD System requires only one Flat Belt, compact layouts are possible.

V-Belt System



HFD System



Layout Example: Industrial Blower
 Motor: 25 hp (Mitsubishi)
 Hz: 50 (4 Pole)
 Total electricity savings: 7.27%

Industrial Blower	V-Belt System	Bando HFD System
Belt Type	V-Belt STD-C	Hyper Flat Belt
Specification	C108	HFDB001-20-2650
Number of Belts	4 pieces (C section)	1 piece (20mm)
Ratio	1.7706	1.7766
Drive Pulley	200 mm	165 mm
Driven Pulley	355 mm	295 mm
Center Distance	931 mm	931 mm
Statistical Axis Force	4458 N	1078 N
Belt Tension	645 N	607 N

INSTRUCTIONS FOR USAGE

Application for blower and compressor machines with an engine range of **2.95 hp to 29.5 hp**.
For a usage out of the standard range please contact us and we will design a suitable system for you.

Operation temperature standard range: **14°F to 140°F**

The HFD installation layout is based on the license agreement in our company.

Please request the confirmation of the Design by Bando. We can also supply an installation guide.

Environmental conditions that should be avoided:

1. Operating in condensation condition.
2. Usage in dusty environment.
3. Usage in wet condition and water contact: Please avoid water contact in the Tensioner Pivot Point and all moving parts.
4. Avoid the usage in an environment with water or oil. For a usage in environments described in [2] and [3] please use a safety protecting device.
5. For the HFD-System installation an additional guidance including setting and misalignment analysis is needed.



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