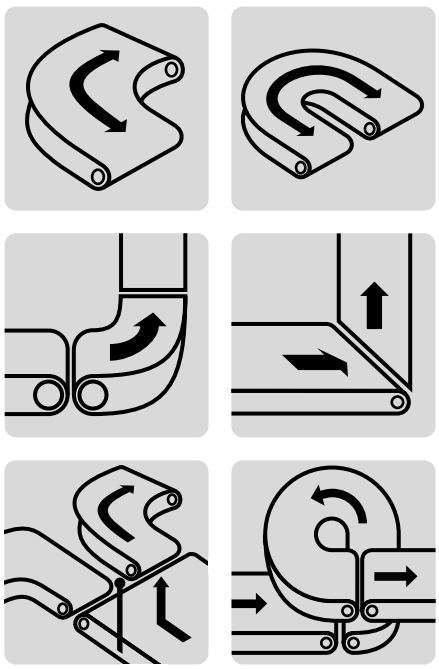
Edition: April 2002
Replaces edition: –

habasit

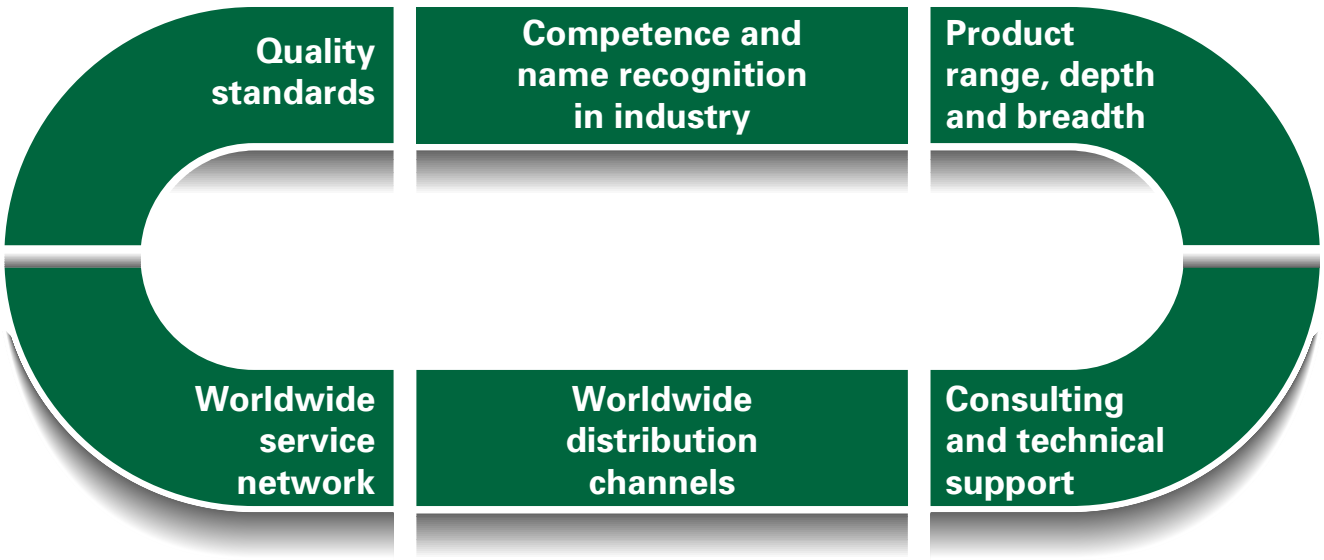
Application
brochure

2039

# Habasit conveyor belts for power turns



# Benefits of power turns offered by Habasit or our VALUE PROPOSITION




## Features and benefits of power turns

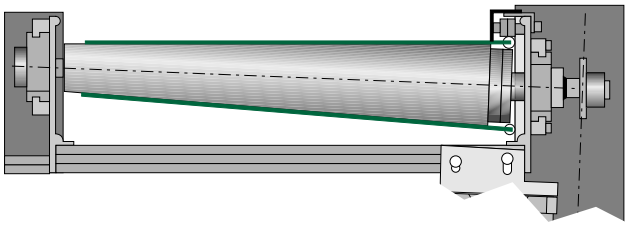
| | |
|---|---|
| Ultimate exploitation of space | Excellent transfer of goods |
| Freedom of systems design | Transfer at adapted speed |
| Carrying of high loads possible | Low maintenance, long/maintenance-free running |
| Narrow transfer points for small goods possible | Transfer of goods without change of relative position |

## Know-how, experience and products of Habasit

- Belt assortment covering wide range of applications. Quality products
- Belts suitably adapted for any equipment technology
- Perfected belt geometry assured by use of automated belt fabrication technology
- Technical support by our application specialists
- Equipment design technology available for our customers

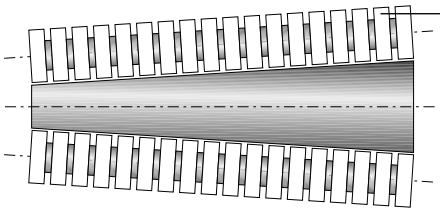
# Power turn systems

## Tapered pulleys and end drive systems

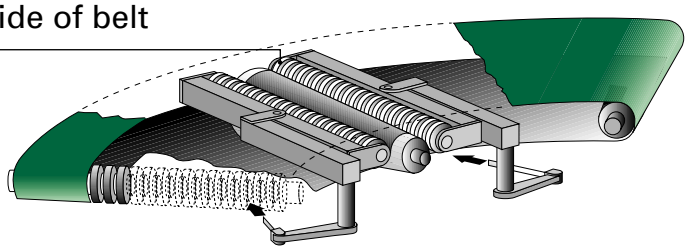


Belt drive via tapered end pulley

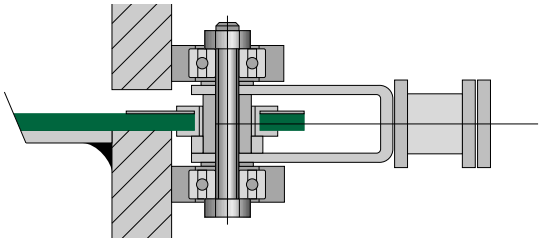
## Cylindrical end pulleys and central drive systems



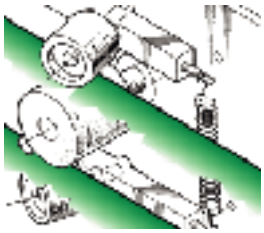
Friction drive acting on slack side of belt



## Chain drive acting on belt periphery

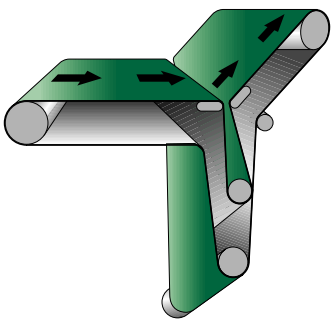


## Combined drive/guiding systems



Source: Maruyasu

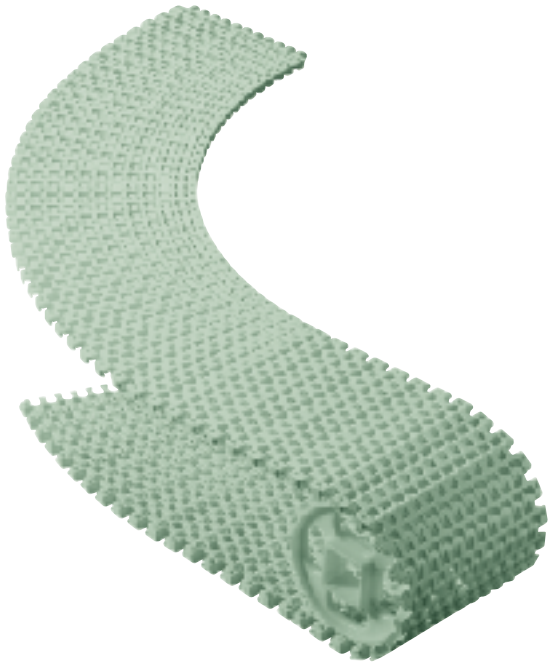
## Oblique nosebar systems



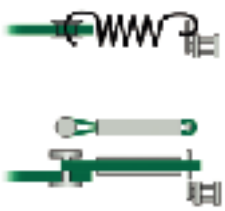
# Alternative belt concept/system

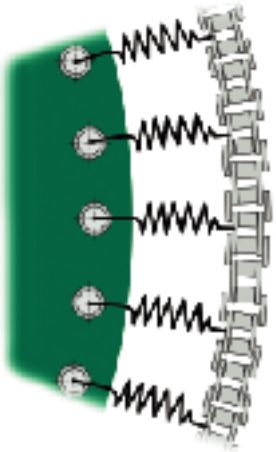
## Modular belt systems

The smart modular belt range: HabasitLINK®

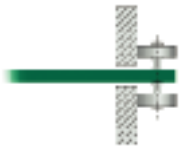


# **Power turn guiding system** (principle) (commonly used systems)



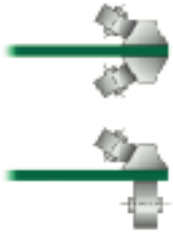


Belt guided with coil springs or round belts attached to chain that is acting as belt drive. Springs/round belts located in grommets.



Belt guided by roller sets that are attached around belt circumference.

Belt either driven over end pulley or by tangential drive.

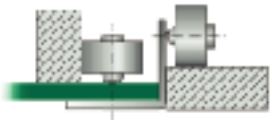


Belt guided by spring-loaded rollers acting on V-profiles or special beads.

Belt driven either by end pulleys or by tangential drive.

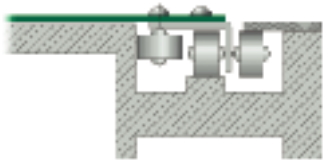
Belt guided by spring-loaded rollers acting on special beads.

Belt driven either by end pulleys or by tangential drive.



Belt guided by rollers that are acting on outer race of power turn.

Belt either driven over end pulley or by tangential drive.



Belt guided by rollers acting on outer race of power turn.

Belt either driven over end pulley or by tangential drive.

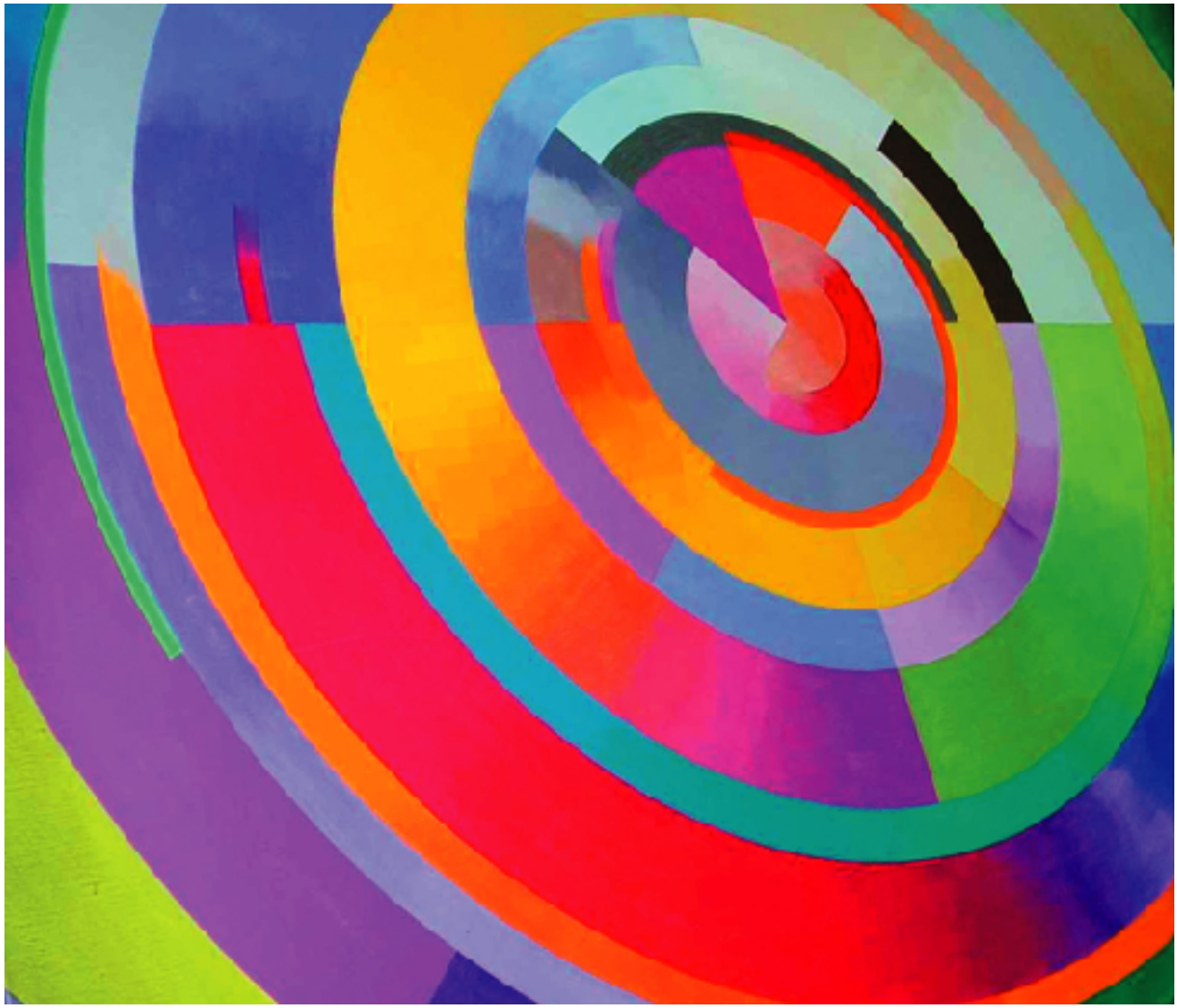
Source: Rapistan-Dematic

# A fine selection of belts for power turns

| | Technical data | | | Product construction/design | | | | Characteristics | | | Application | | | | Special features |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Belt type | Tensile force for 1% elongation (k1%) per unit of width [N/mm] | Belt thickness [mm] | Pulley diameter minimum [mm] / r = radius [mm] | Conveying side (Surface) | Conveying side (Property) | Conveying side (Color) | Conveying side (Material) | Flame retardant (DIN 22103, ISO 340) | Permanently antistatic | Food suitability: FDA/USDA | General Materials Handling | Food | Mini conveyors | Airport | |
| **NAB-10EBAV** | 10 | 2.4 | 30 | mat | adhesive | anthr. | PVC | ○ | ● | ○ | ● | ○ | ○ | ◐ | heavy duty |
| **NVT-229** | 10 | 2.5 | 60 | blank/smooth | non-adh. | black | PVC | ● | ● | ○ | ○ | ○ | ○ | ● | heavy duty |
| **NVT-256** | 8 | 2.2 | 24 | structured | adhesive | black | PVC | ○ | ● | ○ | ● | ○ | ○ | ◐ | high grip |
| **NVT-295** | 8 | 1.9 | 30 | super mat | non-adh. | black | PVC | ○ | ● | ○ | ● | ○ | ○ | ◐ | |
| **G18/0NNB6E** | 9 | 2.5 | 25 | non-woven | non-adh. | black | PES | ○ | ● | ○ | ● | ○ | ○ | ○ | soft top, resilient |
| **G23/0NNB6E** | 12 | 4.0 | 50 | non-woven | non-adh. | black | PES | ○ | ● | ○ | ● | ○ | ○ | ◐ | soft top, resilient |
| **G23/0NNB6S** | 12 | 4.0 | 50 | non-woven | non-adh. | black | PES | ● | ● | ○ | ● | ○ | ○ | ● | soft top, resilient |
| **HSW-5EB** | 6 | 1.6 | r=4 | waffle struct. | super-adh. | black | TPU | ○ | ● | ○ | ○ | ○ | ● | ○ | nosebar suitable, high grip |
| **E-5EBBT** | 5 | 1.5 | 15 | blank/smooth | medium-adh. | black | TPU | ○ | ● | ○ | ○ | ○ | ● | ○ | extra wear resistant |
| **FAB-3EB** | 3 | 0.8 | r=4 | blank/smooth | medium-adh. | white | TPU | ○ | ● | ● | ○ | ● | ● | ○ | |
| **FAB-5EB** | 5 | 1.5 | r=4 | blank/smooth | medium-adh. | white | TPU | ○ | ● | ● | ○ | ● | ● | ○ | |
| **FAB-5ER** | 5 | 0.95 | r=4 | blank/smooth | super-adh. | white | Silicone | ○ | ● | ● | ○ | ● | ● | ○ | |
| **FMB-5EQ** | 10 | 1.4 | r=4 | blank/smooth | medium-adh. | white | TPU | ○ | ○ | ● | ○ | ● | ● | ○ | |
| **HAR-12E** | 20 | 1.9 | 50 | rough textile structure | adhesive | green | NBR | ○ | ● | ○ | ◐ | ○ | ○ | ○ | highest wear resistance |
| **HNA-12E** | 20 | 1.1 | 60 | blank/smooth | non-adh. | green | PUR | ○ | ● | ○ | ◐ | ○ | ○ | ○ | highest wear resistance, low friction |
| **F16/0ANW5** | 8 | 2.9 | 50 | non-woven | non-adh. | white | PES | ○ | ○ | ◐[1)] | ◐ | ● | ○ | ○ | soft top, resilient |
| **F18/0NNW6** | 9 | 2.5 | 25 | non-woven | non-adh. | white | PES | ○ | ○ | ◐[1)] | ◐ | ● | ○ | ○ | soft top, resilient |
| **F24/0ANW5** | 12 | 3.6 | 50 | non-woven | non-adh. | white | PES | ○ | ○ | ◐[1)] | ◐ | ● | ○ | ○ | soft top, resilient |

Explanation: ● applicable ◐ conditionally applicable ○ not applicable r = radius [1)] FDA only

All data are approximate values under standard climatic conditions: 23°C/73°F, 50% relative humidity (DIN 50005/ISO 554).



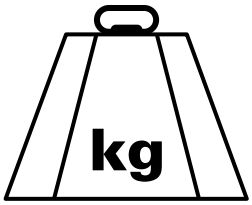
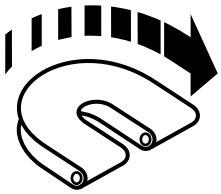
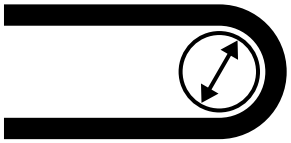
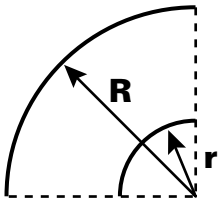
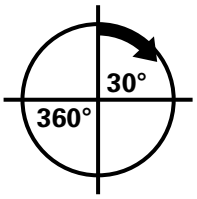
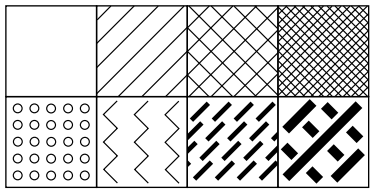
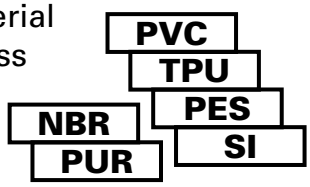
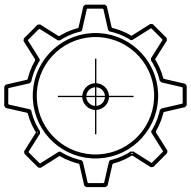
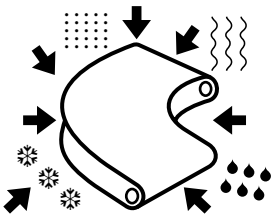
**Product Liability, Application Consideration**

The proper selection and application of Habasit products, including the related area of product safety, is the responsibility of the customer.

All indications / information are recommendations and believed to be reliable, but no representations, guarantees, or warranties of any kind are made as to their accuracy or suitability for particular applications. The data provided herein are based on laboratory work with small-scale test equipment, running at standard conditions, and do not necessarily match product performance in industrial use. New knowledge and experiences can lead to modifications and changes within a short time without prior notice.

BECAUSE CONDITIONS OF USE ARE OUTSIDE OF HABASIT'S AND ITS AFFILIATED COMPANIES CONTROL, WE CANNOT ASSUME ANY LIABILITY CONCERNING THE SUITABILITY AND PROCESS ABILITY OF THE PRODUCTS MENTIONED HEREIN. THIS ALSO APPLIES TO PROCESS RESULTS / OUTPUT / MANUFACTURING GOODS AS WELL AS TO POSSIBLE DEFECTS, DAMAGES, CONSEQUENTIAL DAMAGES, AND FURTHER-REACHING CONSEQUENCES.

# Criteria for power turn belt selection

| | |
|---|---|
| **1** Load to be transported   | **2** Types of goods to be transported   |
| **3** Dimensions of goods to be conveyed   | **4** Required belt velocity  |
| **5** Pulley diameter to be negotiated  | **6** Inner- and outer diameter of belt turn   |
| **7** Angle of belt turn   | **8** Require-ments on belt surface structure and color  |
| **9** Special requirements: antistatic, food suitable, flame retardant, low noise, etc.   | **10** Type of belt material and total thickness requirements    |
| **11** Type of drive system (by end pulley or by tangential drive)  | **12** Environmental/ operating conditions  |

# Specific critical issues for power turn belts

- Pratically unchanged flexibility of belt material in all directions
- Perfect geometric projection of belt
- True to measure application of belt guiding system in respect to turning point
- Unchanged surface properties in joining area
- Minimal belt distortion in belt joining area

# Belt design worksheet for power turn belt

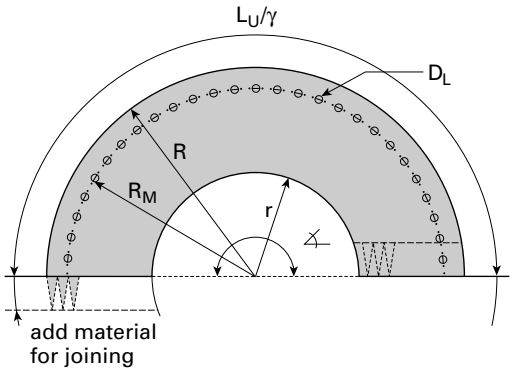
habasit

**To ensure perfected fabrication of power turn belt the following parameters are required**

## 1. Belt data

| | | | |
|---|---|---|---|
| Habasit belt type | | | ..... |
| Inner radius | r | [mm] | = ..... |
| Outer radius | R | [mm] | = ..... |
| Belt width | $b_O$ | [mm] | = ..... |
| Geometrical peripheral length | $L_U$ | [mm] | = ..... |
| Angle of the belt segment | γ | [°] | = ..... |
| Pitch circle for holes | $R_M$ | [mm] | = ..... |
| Hole diameter | $D_L$ | [mm] | = ..... |
| Number of holes | $N_L$ | | ..... |
| Others: ..... | | | ..... |

## Belt segment




## In case belt data is not known, the following data will be required

## 2. Installation data

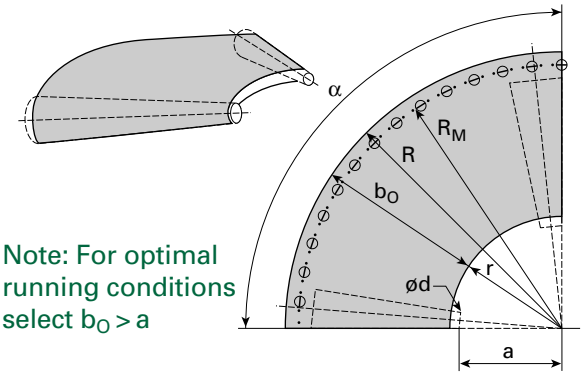
Type of conveyor belt system

- ❑ Lugs – spring elements – chain
- ❑ Roller sets in guiding rails
- ❑ Others: .....

| | | | |
|---|---|---|---|
| Pitch circle of holes | $R_M$ | [mm] | = ..... |
| Hole diameter | $D_L$ | [mm] | = ..... |
| Number of holes | $N_L$ | | ..... |

## Power turn with tapered rollers

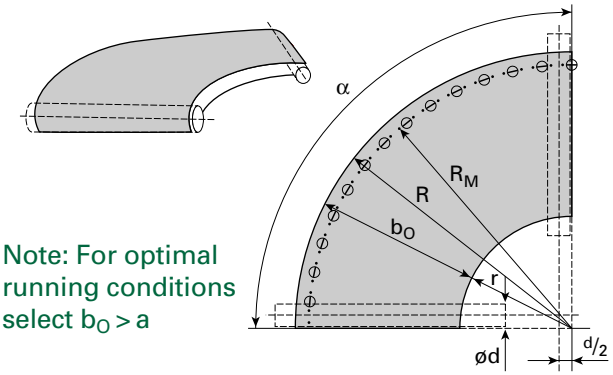
| | | | |
|---|---|---|---|
| Inner radius | r | [mm] | = ..... |
| Outer radius | R | [mm] | = ..... |
| Belt width | $b_O$ | [mm] | = ..... |
| Inner pulley diameter | d | [mm] | = ..... |
| Transfer angle | α | [°] | = ..... |
| Distance between pulley and center | a | [mm] | = ..... |




Note: For optimal running conditions select $b_O > a$

## Power turn with cylindrical rollers

| | | | |
|---|---|---|---|
| Inner radius | r | [mm] | = ..... |
| Outer radius | R | [mm] | = ..... |
| Belt width | $b_O$ | [mm] | = ..... |
| Pulley diameter | d | [mm] | = ..... |
| Transfer angle | α | [°] | = ..... |



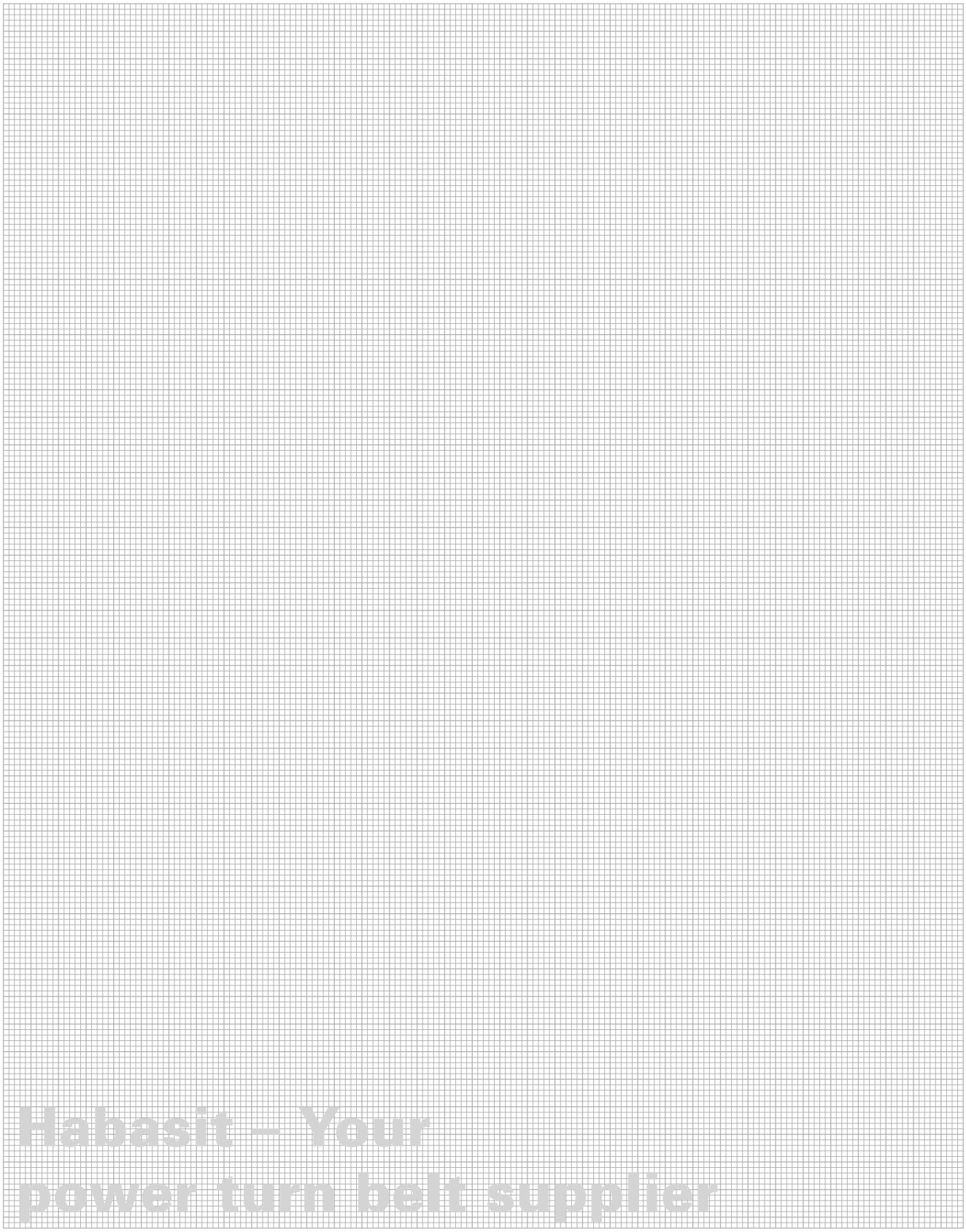

Note: For optimal running conditions select $b_O > a$

Make a copy or tear out page to fill in.

# Belt design worksheet for power turn belts



## Sketches, comments



# Habasit –
# The No. 1 Belting Company

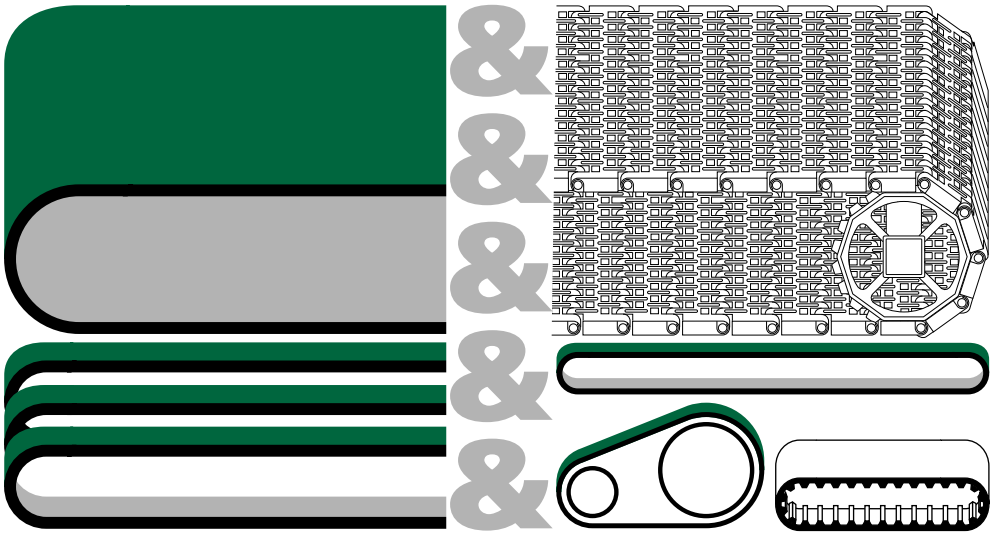
or some reasons to choose Habasit as your belting partner

## 1 Experience

Habasit was founded in 1946 and has accumulated more than 50 years of belting experience backed by our own state-of-the-art engineered processing machinery. Production at Habasit is maintained by well trained and committed teams. Our activities are supported by in-house Research & Development teams and aim at excellence in application and customer-oriented solutions. We have extensive experience in most industries including: food – materials handling – printing & paper – textile – wood – aluminium – glass – metal working – canning – bottling – automotive – electronics – business machines.

## 2 One partner – one source

Habasit – One partner for all your belting needs such as – traditional conveyor and processing belts – modular belts – machine tapes – seamless belts – power transmission belts – timing belts – round belts – etc.



## 3 Worldwide service

Habasit's engineering consulting and service network extends worldwide with local distribution and service associates in more than 70 countries.

**www.habasit.com**

## 4 Quality

Habasit has been certified according to the ISO 9001/EN 29001 quality standards since 1987.

Certified
Quality System
SQS
ISO 9001/EN 29001
Reg. No. 10425-03

Antriebs-, Transportelemente
Eléments de transmission, de transport
Power transmission, conveyor belts
Elementos de transmisión, de transporte
Elementi di trasmissione, di trasporto
Elementos de transmissão, de trasporte
Aandrijf-, transportelementen
Transmissions-, transportelement
Voimansiirto-, kuljetuselementit
Kraftoverførings-, transportelementer
動力の伝達及びコンベヤーの原理

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