

# HPC

**MADE TO MEASURE**

Worms and wheels

Gears

Pulleys

Chain sprockets

Racks

Screw jacks

Ball screws

Lead screws

Gearboxes

Springs

Linear shafts

Shock absorbers

Ball pins

Hand wheels

Universal joints

Couplings

Screws and fasteners

Casters

Feet

Brushes

# MADE TO MEASURE

## WORMS AND WHEELS

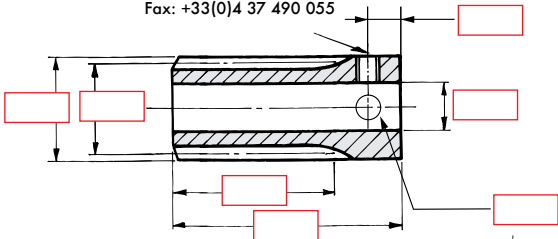
Please complete this form and return it to us!

Email address: [cial2@hpceurope.com](mailto:cial2@hpceurope.com)

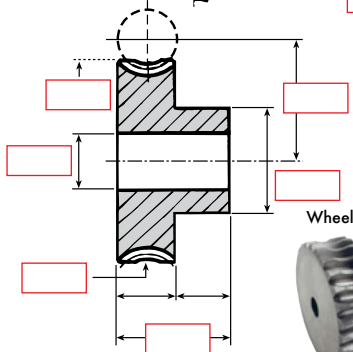
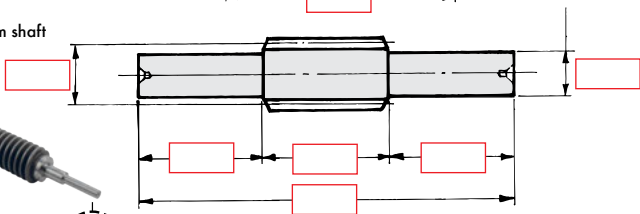
Tel: +33(0)4 37 496 496

Fax: +33(0)4 37 490 055

Bored worm



Worm shaft



Wheel



MODULE

N° OF TEETH

HELIX ANGLE

DISTANCE BETWEEN CENTRES

OPTION :

Left hand helix

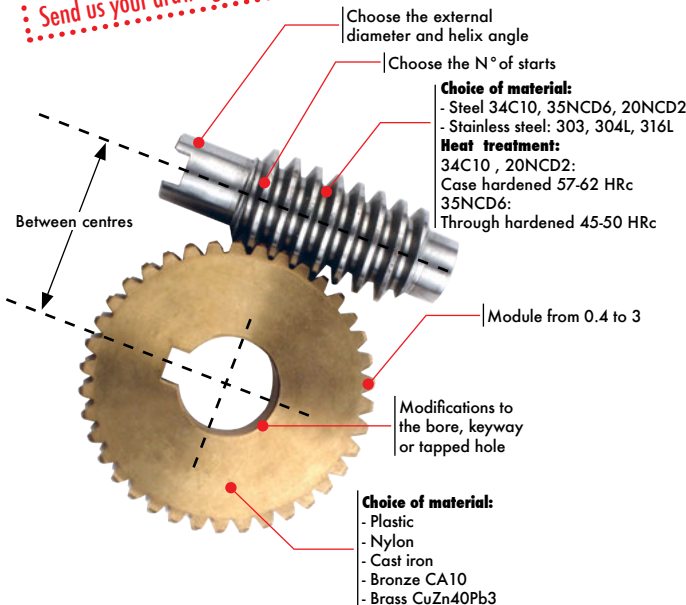
Right hand helix

# MADE TO MEASURE

## WORMS AND WHEELS

From  
1+>

A FACE requires machining?  
Need a PRECISION gear?  
Send us your drawings!



**TIP:** to determine the orientation of the helix angle, lay the gear flat on a table.  
If the teeth rise to the right, the gear has a right hand helix angle.  
If the teeth rise to the left, the gear has a left hand helix angle.

# MADE TO MEASURE

## GEARS – PLEASE FILL IN THE DETAILS

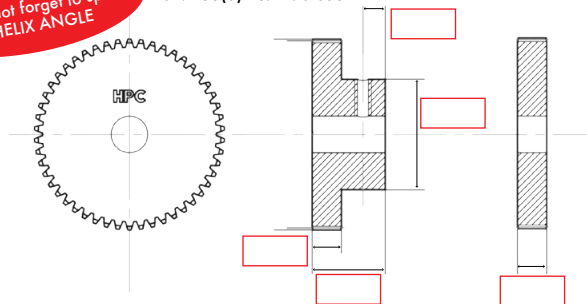
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For helical gears,  
please do not forget to specify  
the **HELIX ANGLE**



Bore	Keyway	Threaded hole	Pin hole
ØA	ØA   K   H	ØT   Qty   α°	ØG

Module		Material	
N° of teeth		Heat treatment	
Pressure angle		Hardness	
Helix angle		Quantity	

# MADE TO MEASURE

## GEARS

1. SMALL CHANGES: Find the Part N° of the standard part (from the catalogue or website) and specify the modification(s) required (bore, keyway....)
2. CHANGES TO DIMENSIONS: Please complete the form opposite
3. CUSTOM MADE PART: Please send us your drawing(s)

A FACE requires machining?  
Need a PRECISION gear?  
Send us your drawings!

### Modules from 0.25 to 8

A reminder for spur gears:

Z = No of teeth

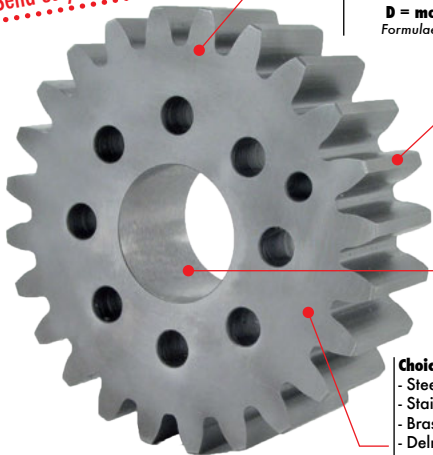
P = Pitch Circle Diameter

**P = module x Z**

D = External diameter

**D = module x (Z+2)**

*Formulae do not apply for helical gears*



Alternative  
teeth widths

Modifications to  
the bore, keyway  
or tapped hole

### Choice of material:

- Steel: 34C10, 35 NCD6, 20NCD2
- Stainless steel: 303, 304L, 316L
- Brass CuZn40Pb3
- Delrin, Nylon, Celeron

### Heat treatment:

34C10, 20NCD2: Case hardened  
57-62 HRC, 35NCD6:  
Through hardened 45-50 HRC

### EXAMPLES OF GEARS ALREADY SUPPLIED



# MADE TO MEASURE

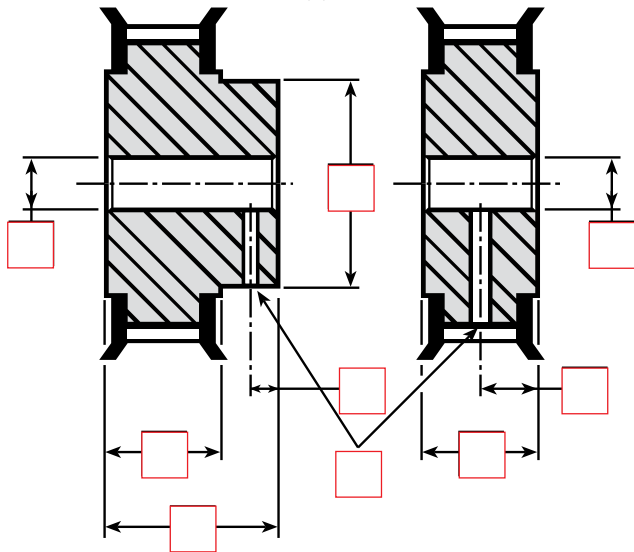
## PULLEYS – PLEASE FILL IN THE DETAILS

Please complete this form and return it to us!

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Tel: +33(0)4 37 496 496

Fax: +33(0)4 37 490 055



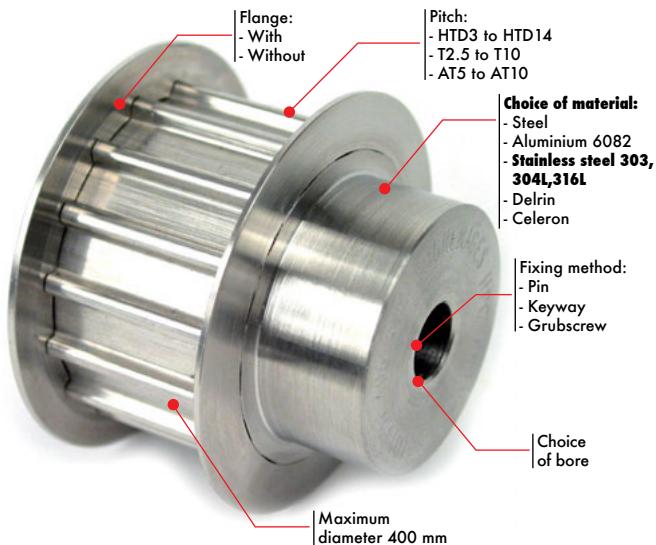
PULLEY CHARACTERISTICS

PULLEY CHARACTERISTICS			
Pitch		Keyway	
N° of teeth		Tapped hole	
Ø PCD		Material	
Ø external		Treatment	
Quantity		Other:	

# MADE TO MEASURE

## PULLEYS

1. **SMALL CHANGES:** Find the Part N° of the standard part (from the catalogue or website) and specify the modification(s) required (bore, keyway....)
2. **CHANGES TO DIMENSIONS:** Please complete the form opposite
3. **CUSTOM MADE PART:** Please send us your drawing(s)



Made to measure Type T,  
AT and HTD pulleys are  
all available!  
Contact us...

EXAMPLES OF PULLEYS ALREADY SUPPLIED



# MADE TO MEASURE

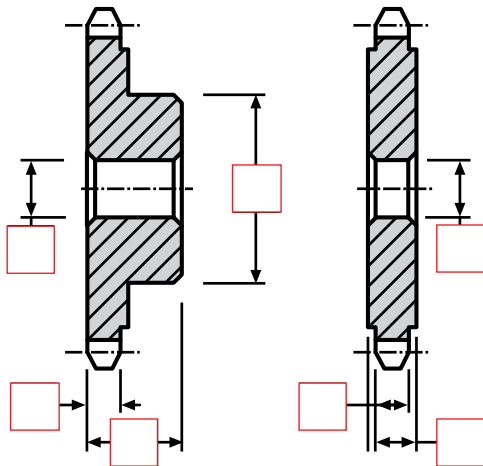
## CHAIN SPROCKETS PLEASE FILL IN THE DETAILS

Please complete this form and return it to us!

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Tel: +33(0)4 37 496 496

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SPROCKET CHARACTERISTICS			
Pitch		Keyway	
N° of teeth		Tapped hole	
Ø PCD		Material	
Ø external		Treatment	
Quantity		Other:	

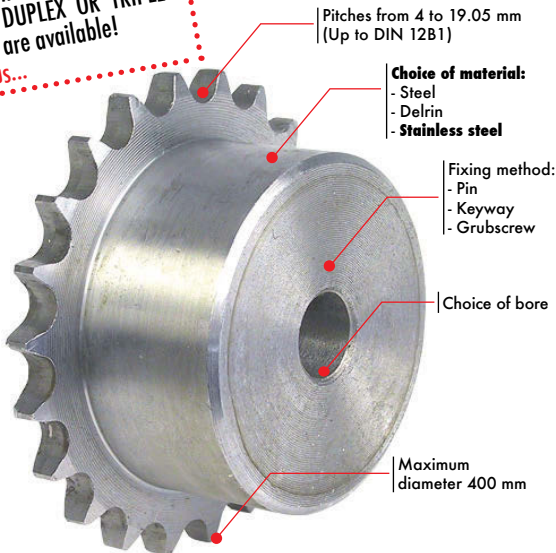


# MADE TO MEASURE

## CHAIN SPROCKETS

1. **SMALL CHANGES:** Find the Part N° of the standard part (from the catalogue or website) and specify the modification(s) required (bore, keyway....)
2. **CHANGES TO DIMENSIONS:** Please complete the form opposite
3. **CUSTOM MADE PART:** Please send us your drawing(s)

Made to measure versions of  
**SIMPLEX, DUPLEX OR TRIPLEX**  
sprockets are available!  
Contact us...



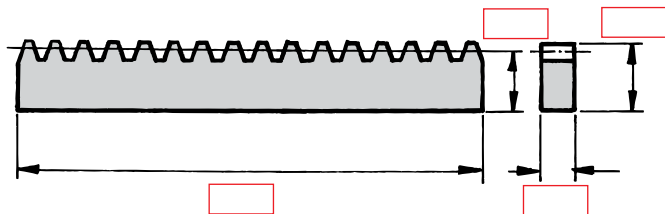
### DID YOU KNOW?

A system built using sprockets and chains must be kept under tension and correctly lubricated. Please do not forget to include a chain tensioner in your system.

Contact our technical support team for more information

# MADE TO MEASURE

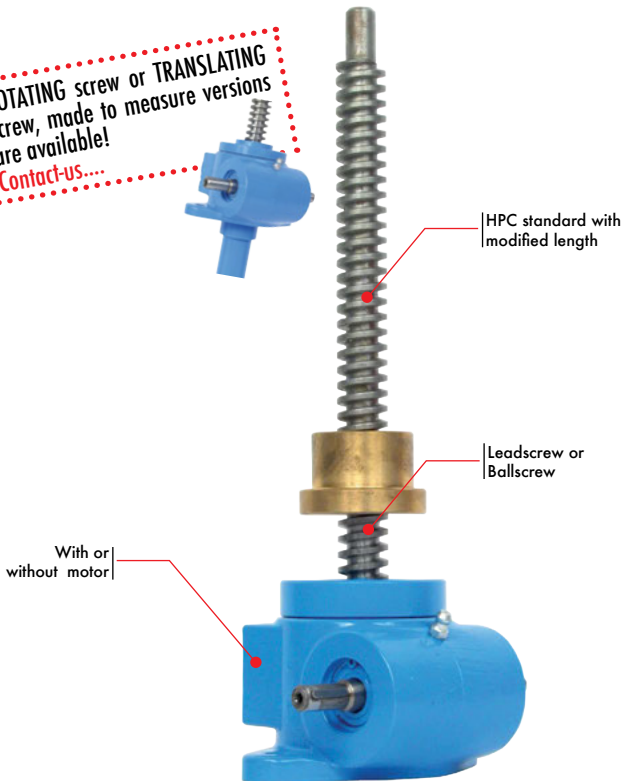
## GEAR RACKS



# MADE TO MEASURE

## SCREW JACKS

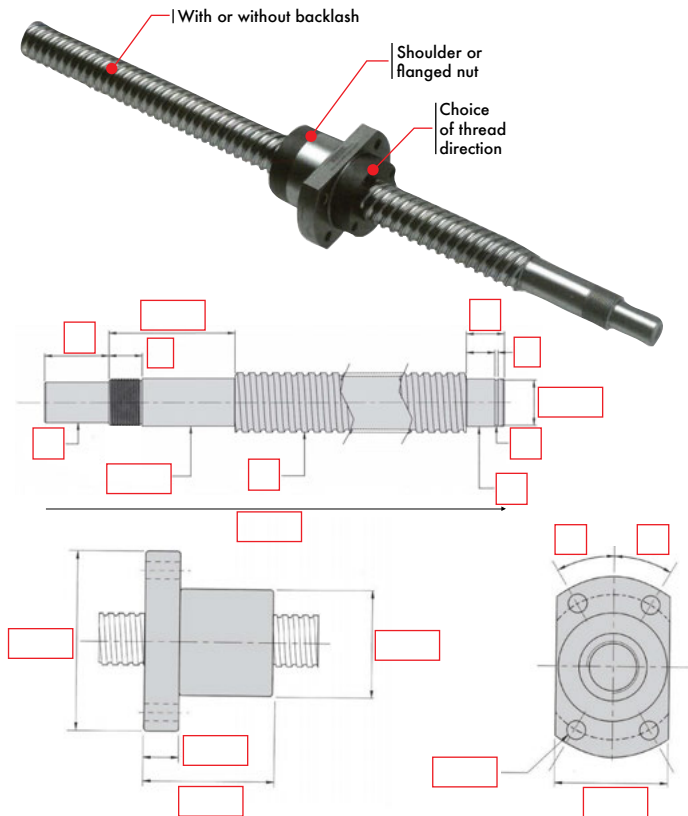
ROTATING screw or TRANSLATING screw, made to measure versions are available!  
Contact-us.....



**Need a custom built version?**  
Send us your design specification

# MADE TO MEASURE

## BALLSCREWS



# MADE TO MEASURE

## TRAPEZOIDAL LEADSCREWS

1 start? 2 starts? BI-DIRECTIONAL?  
Made to measure versions available!  
Contact us...

### Choice of material:

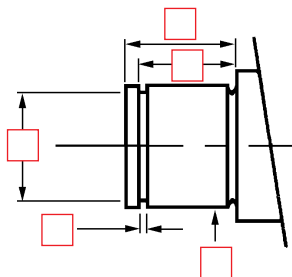
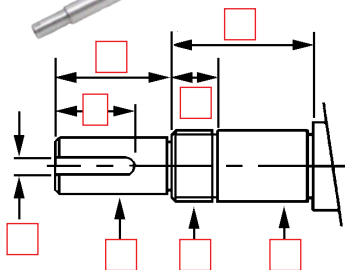
- Mild steel

- Stainless steel

Min  
quantity

Choice of  
length and  
diameter

### EXAMPLES OF DIFFERENT ENDS



# MADE TO MEASURE

## INLINE GEAR REDUCERS

Send us details of your requirements, specifications and special requirements...

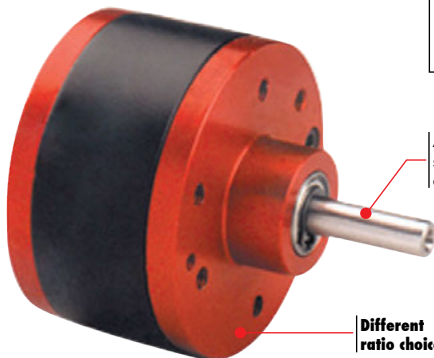
Email address: [cial2@hpceurope.com](mailto:cial2@hpceurope.com)

Tel: +33(0)4 37 496 496

Fax: +33(0)4 37 490 055



Adapted for use  
with a motor



Alternative  
shaft diameters  
and lengths

Different  
ratio choices\*

HPC offers a wide choice of different  
made to measure gear reducers

- epicyclical
- bevel
- worm wheel
- inline spur gear
- double reduction
- offset

### **DID YOU KNOW?**

#### **GREASE FILLING**

HPC gear reducers are greased for life and are maintenance free.

Contact our technical support team for more information

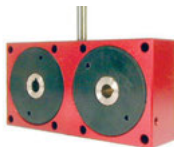
\*Ask us for the ratio you require

# MADE TO MEASURE

## WORM WHEEL GEAR REDUCERS

EXAMPLES OF REDUCERS BUILT TO ORDER

From  
1+>



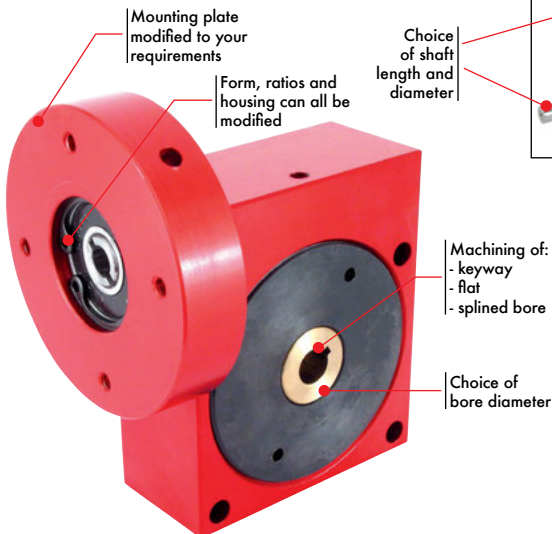
- A single input (worm)
- Dual outputs (2 wheels)
- Housing manufactured to order



- Modified input shaft
- Addition of aluminium hand wheel



- Rotating output table
- Input shaft on one side only



# MADE TO MEASURE

## COMPRESSION SPRINGS

Min  
quantity

**Ends:**

- Ground
- Natural

**Choice of diameter:**

- Wire
- External

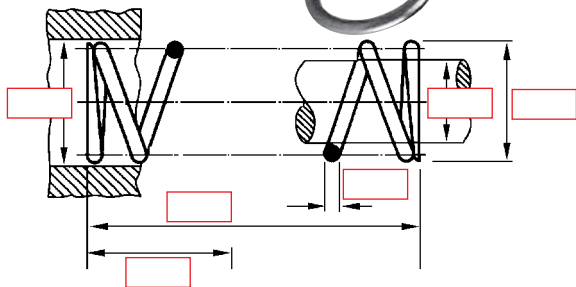
**Choice of material:**

- Steel
- Stainless steel

Choice  
of length

N° of coils

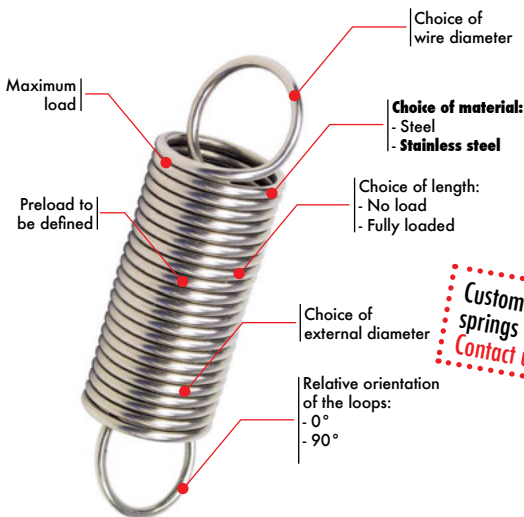
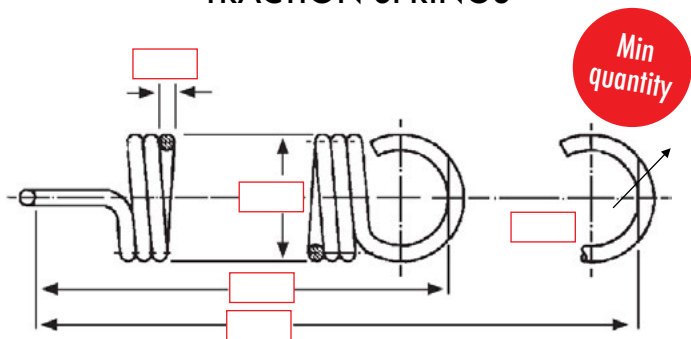
Custom made TORSION  
springs are also available  
Contact us...





# MADE TO MEASURE

## TRACTION SPRINGS



Custom made **TORSION** springs are also available  
Contact us...

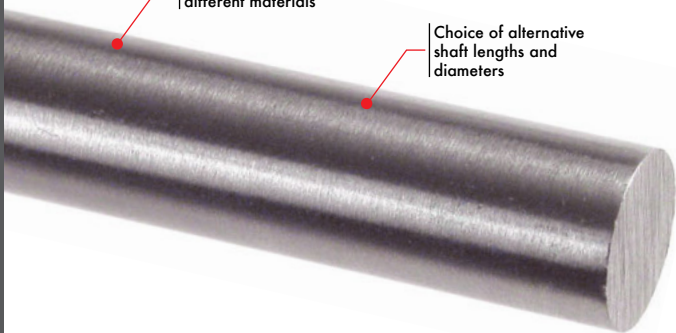
# MADE TO MEASURE

## LINEAR SHAFTS

Need a different END?  
Made to measure  
versions available!  
Contact us...

A wide choice of  
different materials

Choice of alternative  
shaft lengths and  
diameters



HPC can offer you a wide range of modifications  
to our standard linear shafts:

- shorter or longer lengths
- materials
- bores
- specific finishing treatments
- diameters
- machining

**Contact our technical support team  
for more information!**

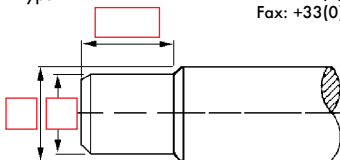
# MADE TO MEASURE

## LINEAR SHAFTS PLEASE FILL IN THE DETAILS

Please send us your drawings!  
Email address: [cial2@hpceurope.com](mailto:cial2@hpceurope.com)  
Tel: +33(0)4 37 496 496  
Fax: +33(0)4 37 490 055

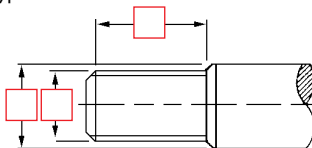
Min  
quantity

Type 1



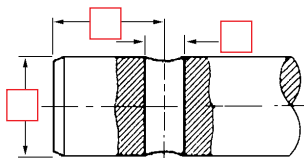
- Alternative diameters
- Machined or hardened versions available

Type 2: Threaded end



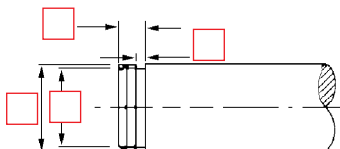
- Annealed end
- Non-hardened thread
- End undercut with or without groove for circlip

Type 3: End with transversal hole



- Shaft annealed around the bore or milled on both sides

Type 4: End with groove for circlip

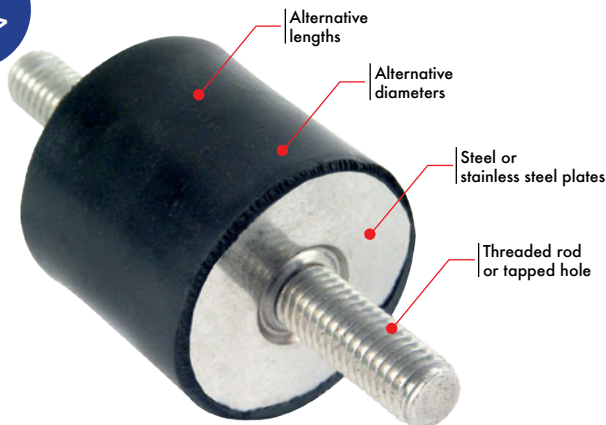


- Shaft tempered/softened or annealed as required

# MADE TO MEASURE

## ELASTIC SHOCK ABSORBERS

From  
50+>



WIDE RANGE OF MODELS AVAILABLE



# MADE TO MEASURE

## BALL LOCK PINS

Min  
quantity

Need IMPERIAL sizes  
or a different shape?  
Contact us...

SELF LOCKING

Choices available:  
- Operating length  
- Diameter  
- **Tolerances**

Choice of pin material:  
- Steel  
- **Stainless steel**  
- Titanium...

Choice of ball  
material:  
- **Ceramic**  
- Steel

Shape of  
handle can  
be altered

Double action  
to unlock version  
available



LIFTING PIN  
WITH RING

**HALDER**  
NORM+TECHNIK

# MODIFIED

## HANDWHEELS PLEASE FILL IN THE DETAILS

Please complete this form and return it to us!

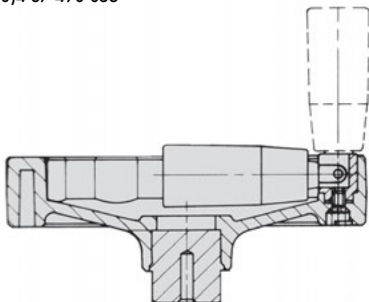
Email address: [cial2@hpceurope.com](mailto:cial2@hpceurope.com)

Tel: +33(0)4 37 496 496

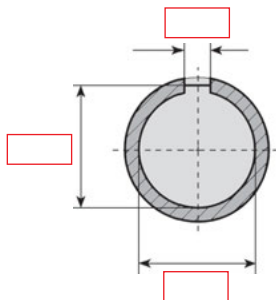
Fax: +33(0)4 37 490 055

**Wheel diameter**

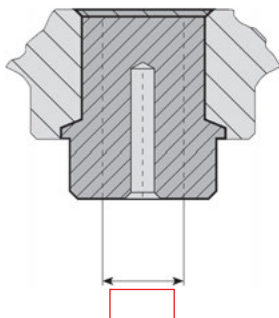
Ø50		Ø200	
Ø65		Ø250	
Ø80		Ø300	
Ø100		Ø400	
Ø125		Ø500	
Ø150			



**Keyway**

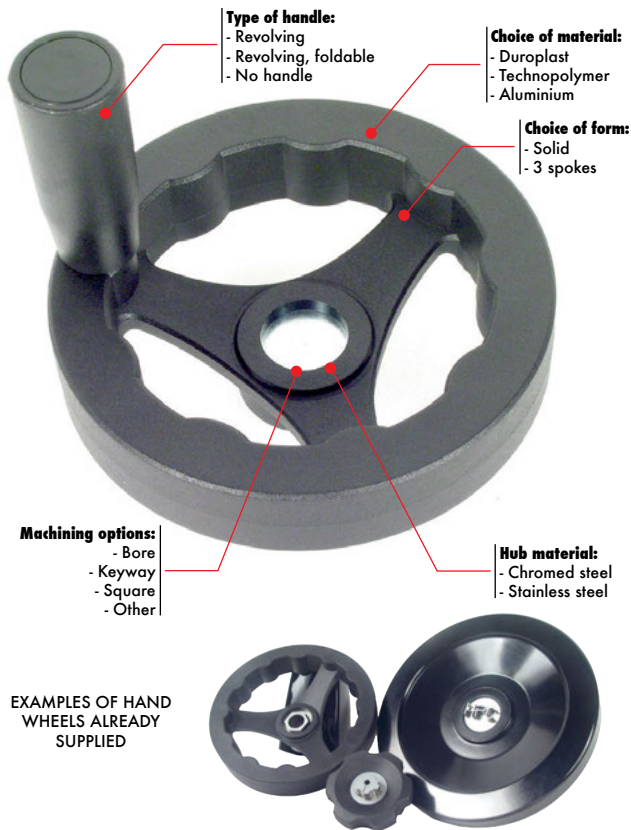


**Bore modifications**



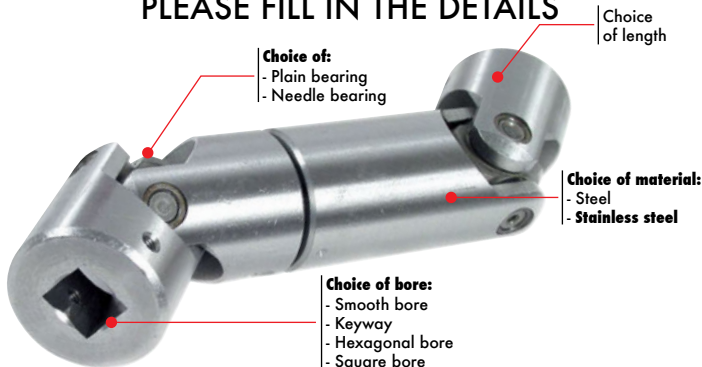
# MODIFIED

## HANDWHEELS



# MODIFIED

## TELESCOPIC UNIVERSAL JOINTS PLEASE FILL IN THE DETAILS



Based on   
universal-joint:   
HPC  
Part Number

**Bore A**

Smooth	Keyway	Hexagonal	Square
Ød <input type="text"/>	Ød <input type="text"/>	SW <input type="text"/>	S <input type="text"/>
	b <input type="text"/>		
	t <input type="text"/>		

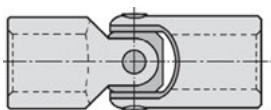
Smooth	Keyway	Hexagonal	Square
Ød <input type="text"/>	Ød <input type="text"/>	SW <input type="text"/>	S <input type="text"/>
	b <input type="text"/>		
	t <input type="text"/>		

**Bore B**

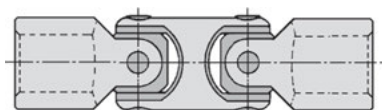


# MODIFIED

## SINGLE OR DOUBLE UNIVERSAL JOINTS PLEASE FILL IN THE DETAILS



SINGLE



DOUBLE



Based on   
universal-joint:

HPC  
Part Number

**Bore A**

Smooth	keyway	Hexagonal	Square
Ød <input type="text"/>	Ød <input type="text"/>	SW <input type="text"/>	S <input type="text"/>
	b <input type="text"/>		
	t <input type="text"/>		

Smooth	Keyway	Hexagonal	Square
Ød <input type="text"/>	Ød <input type="text"/>	SW <input type="text"/>	S <input type="text"/>
	b <input type="text"/>		
	t <input type="text"/>		

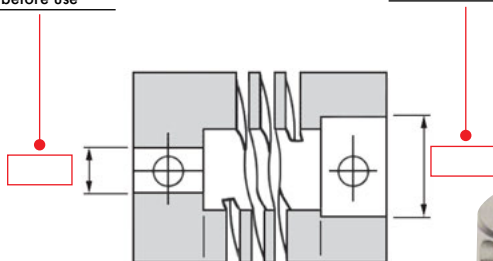
**Bore B**

# ADAPTED

## COUPLINGS

**Pre-bore** to be modified  
before use

**Final bore:**  
choose the required  
bore for each side



### SINGLE PIECE COUPLINGS



Adapt these standard couplings  
to meet your requirements

# ADAPTED

## COUPLINGS

Combined couplings  
MIX AND MATCH  
different hubs!  
Contact us...

2 AND 3 PIECE COUPLINGS



# COMPLEMENTING the range

## STANDARD SCREWS AND FASTENERS

Min  
quantity\*  
\*Pack

Hardened steel 39-44 HRc  
class 12.9



Stainless steel 302/304 - A2



Titanium



Stainless steel 303



Nylon



Different material?  
Special finish?  
Contact us...

SPECIFY WHICH STANDARD

ISO

DIN

GIVE THE:

Dimensions

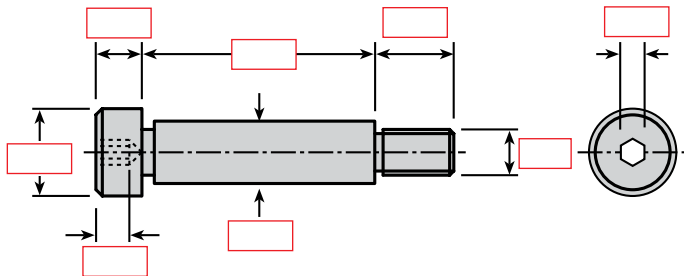
Material

Finish

# COMPLEMENTING the range

MADE TO MEASURE  
SHOULDER HEAD SCREWS

Min  
quantity



**Choice of material:**

- Hardened steel
- Stainless steel
- Pre-treated stainless steel



Contact our technical team  
for more information

# COMPLEMENTING the range

## CASTERS

Min  
quantity

ALL of the different parts of a caster can be modified.  
Contact us for details

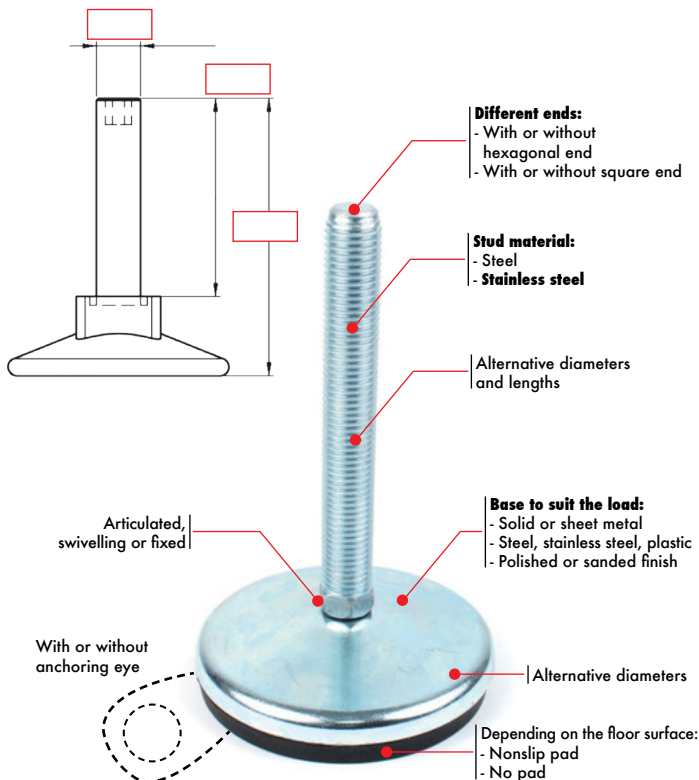


Don't forget to take into account  
the type of floor surface and the  
load to be carried



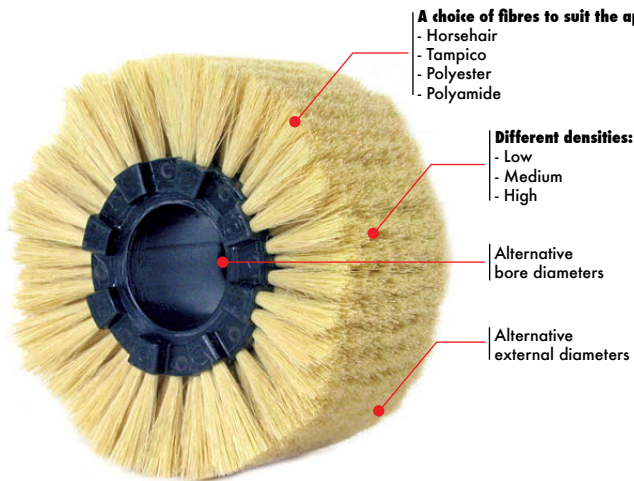
# COMPLEMENTING the range

## MOUNTING FEET

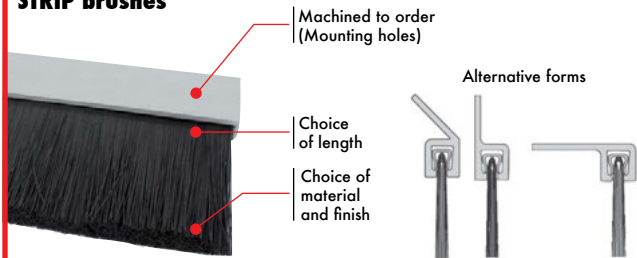


# COMPLEMENTING the range

## BRUSHES

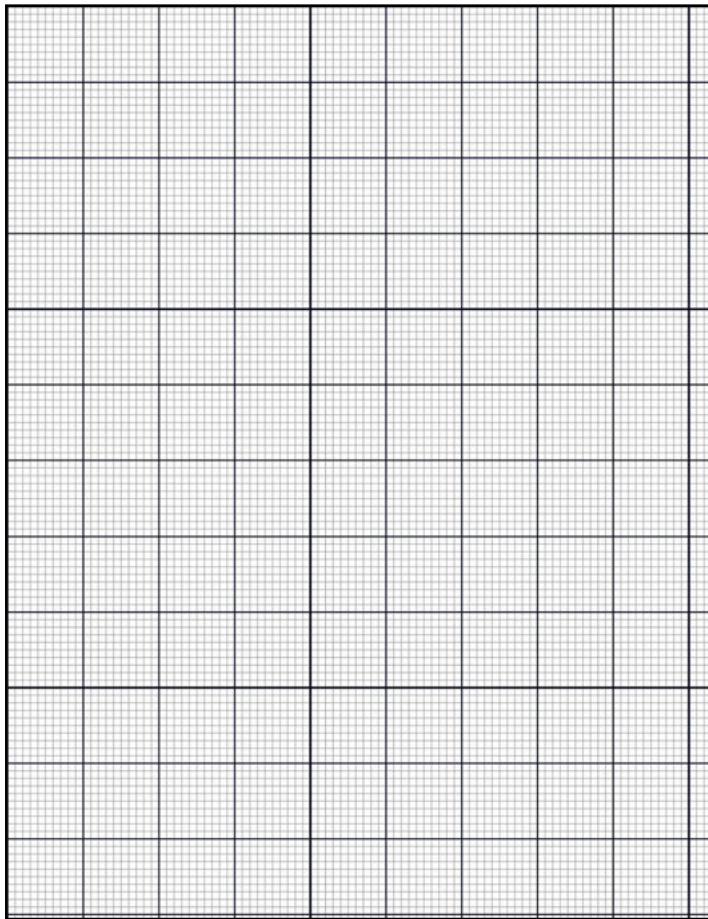


### STRIP brushes





# Add your drawing



For more than 20 years **HPC** has specialised in **made to measure** mechanical components and parts



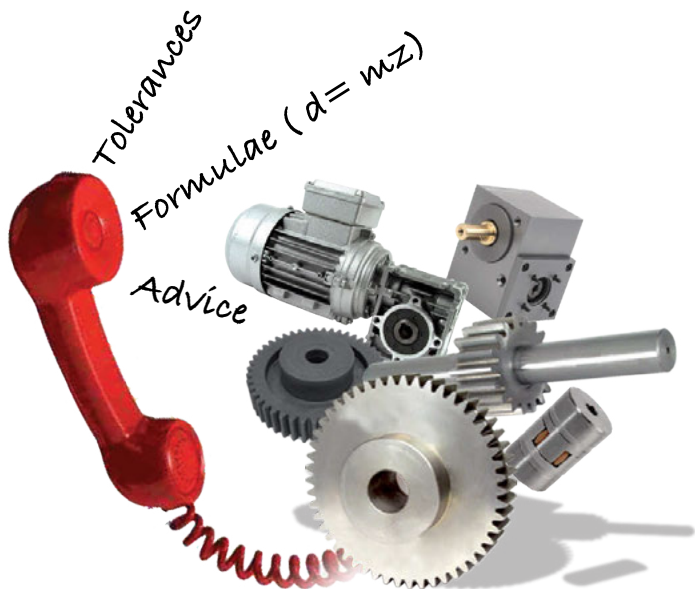
## Contact us!



- By telephone — **+33(0)4 37 496 496**  
Monday to Friday,  
from 08.00 to 12.30  
and 13.40 to 18.00
- By email — [cial2@hpceurope.com](mailto:cial2@hpceurope.com)
- By fax — **+33(0)4 37 490 055**
- By letter — Engrenages HPC  
58, Chemin de la Bruyère  
69570 Dardilly - France

# Technical support

Here to help with all your questions  
and requests for quotations

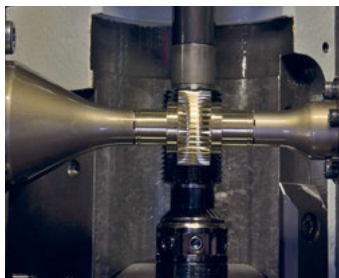


[www.hpceurope.com](http://www.hpceurope.com) **Tel: +33 (0)4 37 496 496**

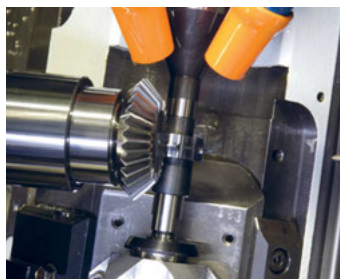
# THE MANUFACTURING PROCESS



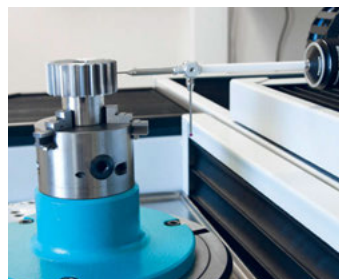
Machining



Cutting



Cutting



Quality control



**HPC**

58, Chemin de la Bruyère  
69570 Dardilly - France  
Tel.: +33 (0)4 37 496 496  
Fax: +33 (0)4 37 490 055  
Email: cial2@hpceurope.com

**Ct Meca** S.r.l.



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10125 Torino - Italia  
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Fax: +(39) 011 760 91 51  
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