

# PIBOMULTI

Standard

SWISS

MADE



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## Standard

Têtes angulaires  
Winkelköpfe  
Angular heads

Multiplicateurs de vitesse  
Schnellaufspindeln  
Spindle speeders

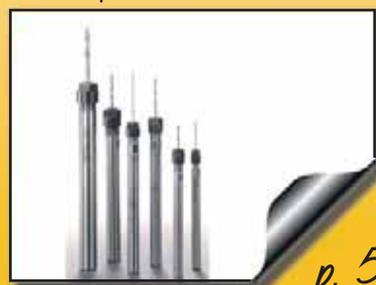
Têtes revolver  
Revolverköpfe  
Turret heads



Têtes multibroches  
Mehrspindelköpfe  
Multispindle heads

Rallonges de broches  
Spindelverlängerungen  
Spindle extensions

Tête à broches alternées  
Köpfe mit abwechselnden Spindeln  
Multi heads with alternating spindles



## LES AVANTAGES PIBOMULTI - DIE PIBOMULTI VORTEILE PIBOMULTI ADVANTAGES

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**PIBOMULTI** est reconnu pour vous offrir un choix incomparable de têtes angulaires adaptées à tout type de machines qui vous permettront de résoudre vos problèmes d'usinage et qui vous apporteront des solutions efficaces, afin de réduire vos temps de production.

En effet, les têtes angulaires **PIBOMULTI** vous offriront la possibilité de fraiser, percer ou tarauder dans tous les angles et dans toutes les grandeurs. Elles sont efficaces pour contrer les usinages difficiles jugés impossibles. Les têtes angulaires **PIBOMULTI** sont adaptées à toutes les opérations d'usinage requises à la configuration de la pièce.

- ➔ à l'intérieur d'alésages ou de poches
- ➔ lors d'encombrements réduits
- ➔ accès difficilement atteignables
- ➔ éviter les serrages multiples

Les têtes angulaires standard ou spéciales **PIBOMULTI** sont des produits haut de gamme, livrables en tout type de cône ISO, HSK ou flasquées, avec une ou plusieurs sorties de broches adaptées aux outils et à la configuration de la pièce.

Elles sont rigides, compactes, légères, fiables et de grande longévité. Les têtes angulaires **PIBOMULTI** sont construites avec soins et usinées avec une grande précision, parfois conçues aux limites de la faisabilité, montées avec :

- ➔ des roulements de broche à contact oblique ou à rouleaux côniques de précision, selon cas et utilisation
- ➔ des engrenages hélicoïdaux de précision en acier de haute résistance, cémentés, trempés et rectifiés ou rodés
- ➔ elles peuvent vous offrir un arrosage central à 50 bars
- ➔ elles sont graissées à vie ou en option lubrifiées par air/huile vous permettant de plus grande vitesse de rotation ainsi qu'une grande longévité.

*De la conception à la réalisation !  
Vom Entwurf bis zur Verwirklichung !  
From design to realisation !*

**PIBOMULTI** ist führend in der Produktion von Winkelköpfen und besonders bekannt durch seine grosse Produktpalette. Die **PIBOMULTI**-Winkelköpfe steigern erheblich den Automatisierungsgrad der Produktionsmaschinen und reduzieren somit im gleichen Masse die Produktionszeiten. So z.B. wenn durch sie Mehrfachaufspannungen vermieden oder die Bearbeitungsprobleme erst lösbar werden.

Die Winkelköpfe sind universell einsetzbar. In unterschiedlichsten Grössen und in allen Winkellagen wird mit ihnen gebohrt, gefräst, ausgedreht, gewindegeschnitten usw. In Sonderausführungen können sie der Form des Werkstückes angepasst werden und können so Bearbeitungsoperationen erfüllen die zunächst als unmöglich erschienen. Solche Einsatzfälle sind :

- ➔ in engen Bohrungen oder Taschen,
- ➔ schmalen Bearbeitungsfenstern
- ➔ kollisionsträchtigen Vorrichtungssituationen

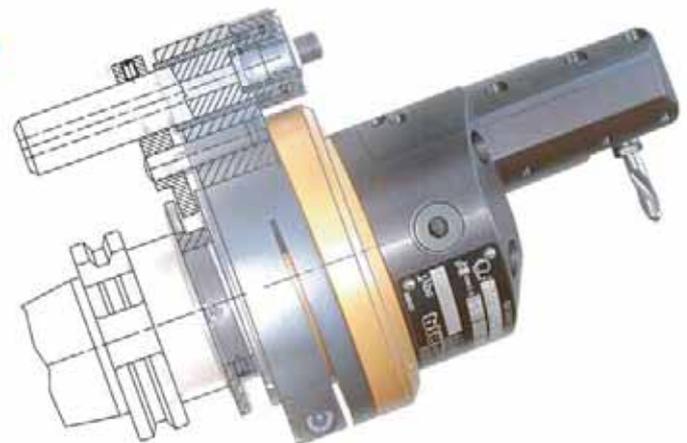
Die **PIBOMULTI** - Winkelköpfe, in Standard- wie in Sonderausführung, sind Produkte höchster Qualität. Sie sind für alle Maschinenschnittstellen lieferbar :

alle Steilkegelarten, Hohlschaftkegel oder Anflanschlösungen. Die Abtriebsspindeln können für alle gängigen Werkzeugaufnahmesysteme ausgelegt sein : Spannzangen, Weldon, Whistle Notch, HSK, ABS, Capto usw. bis hin zu Sonderaufnahmen nach Kundenzeichnung. Grundsätzlich können die Winkelköpfe mit einer oder mehreren Abtriebsspindeln versehen sein.

Allgemein zeichnen sich die **PIBOMULTI** - Winkelköpfe durch ihre Steifigkeit, Kompaktheit, Zuverlässigkeit und lange Lebensdauer aus. Ein kleiner Nebenaspekt ist das gefällige Design. Unsere Konstrukteure gehen in der Entwicklung bis an die Grenze des technisch machbaren, welches in der Produktion durch höchste Präzision und Sorgfalt realisiert wird. Einige technische Merkmale sind:

- ➔ Schrägschulter-Spindellager oder Schrägrollenlager höchster Qualität
- ➔ Helikoidal-Winkelgetriebe aus hochfestem Stahl, gehärtet, geschliffen, geläppt und oberflächenbeschichtet
- ➔ Schmierung als Dauerfettschmierung, Oelnebelschmierung oder Oel-Luft-Schmierung, entsprechend der Einsatzbestimmung
- ➔ Innere Kühlmittelzuführung bis zu 50 bar Druck (optional)

Anwender, rund um den Globus, vertrauen täglich **PIBOMULTI**-Winkelköpfen.



**PIBOMULTI** angle heads are recognized worldwide for bringing effective solutions to manufacturing problems, reducing production time, and for their adaptability to any type of machine.

The variety of choices among **PIBOMULTI** angle heads makes possible milling, drilling or tapping at every angle and in every size, effectively handling manufacturing situations often considered impossible. **PIBOMULTI** heads can be designed to

- ➔ Operate inside bores or pockets
- ➔ Reach areas with difficult access or small clearances
- ➔ Reduce multiple set-ups of parts

Whether standard or special, **PIBOMULTI** angle heads are available in any type of shank, ISO, HSK or flanged, with one or several spindle outputs adapted to tools and to the configuration of the work piece.

**PIBOMULTI** angle heads are rigid, compact, light, reliable and engineered for long life. **PIBOMULTI** designs and manufactures all its products with care and precision, often successfully pushing the limits of engineering feasibility. Angle head features include:

- ➔ Spindle bearings with angular contact or precision conical roller bearings, according to the application to be performed
- ➔ Precision, steel helical bevel gears are surface-treated, hardened and ground, providing high resistance to wear
- ➔ Thru-tool coolant up to 50 bar pressure is available
- ➔ Lubrication via permanent grease pack or air-oil mist for higher RPM capability and longer life.

# SOMMAIRE - ZUSAMMENFASSUNG - SUMMARY

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## Cône ISO + HSK

*Tête équerre à pince pour percer fraiser et tarauder*  
Winkelkopf mit Zangen zum Bohren, Fräsen und Gewindeschneiden  
*Angular head with collets for drilling, milling and tapping*

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*Tête équerre à pince à multiplication pour percer fraiser et tarauder*  
Winkelkopf mit Uebersetzung und Zangen zum Bohren,  
Fräsen und Gewindeschneiden  
*Angular head with collets with ratio for drilling, milling and tapping*

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CMP 10X5 L1 - CMP 10X5 L2 .....	10

*Tête équerre de sciage*  
Winkelkopf zum Sägen  
*Sawing angular head*

CEF 16/22/27/32 .....	10
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*Tête équerre à cône*  
Winkelkopf mit Steilkegel  
*Angular head with shank*

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*Tête équerre réglable à pince pour percer et fraiser*  
Einstellbarer Winkelkopf mit Zangen zum Bohren und Fräsen  
*Adjustable angular head with collets for drilling and milling*

CTAR 07 .....	15
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*Tête angulaire réglable à cône*  
Einstellbarer Winkelkopf mit Steilkegel  
*Adjustable angular head with shank*

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## Cône ISO + HSK

*Tête pour usiner dans les alésages*  
Kopf für die Bearbeitung in Bohrungen  
*Head for machining inside of bores*

CDP 02 L1 / L2 / etc .....	23
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## VDI

*Tête pour tour*  
Kopf für Drehmaschine  
*Head for lathe*

TTAR 07 .....	31
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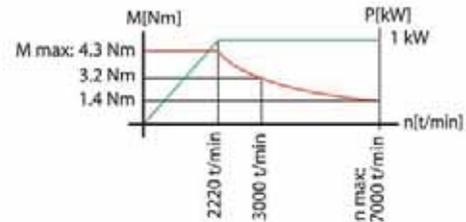
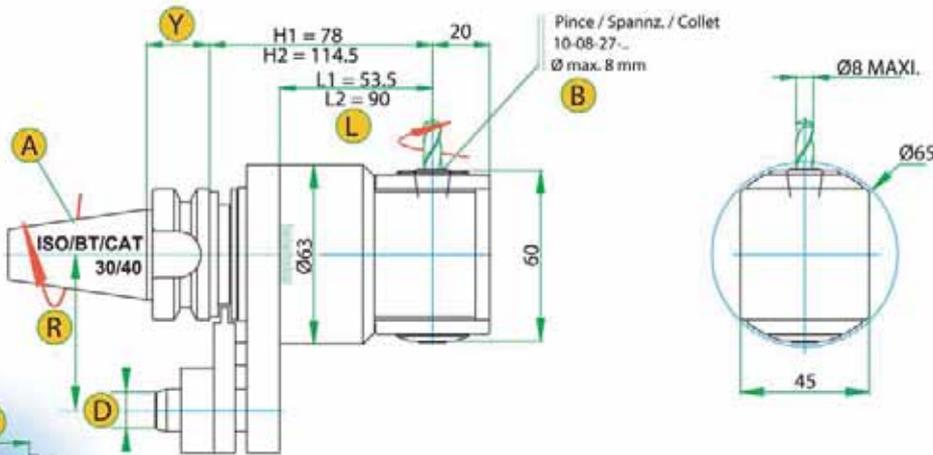


# CEP 08 L1 - CEP 08 L2

**7'000 rpm**

SPECIAL : 10 000 rpm

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n	kW	Nm	1 à 1	kg
7000 t/min u/min rpm	1.0 kW	4.3 Nm	1 à 1	1.5 à 3 kg

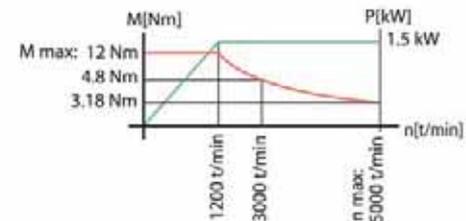
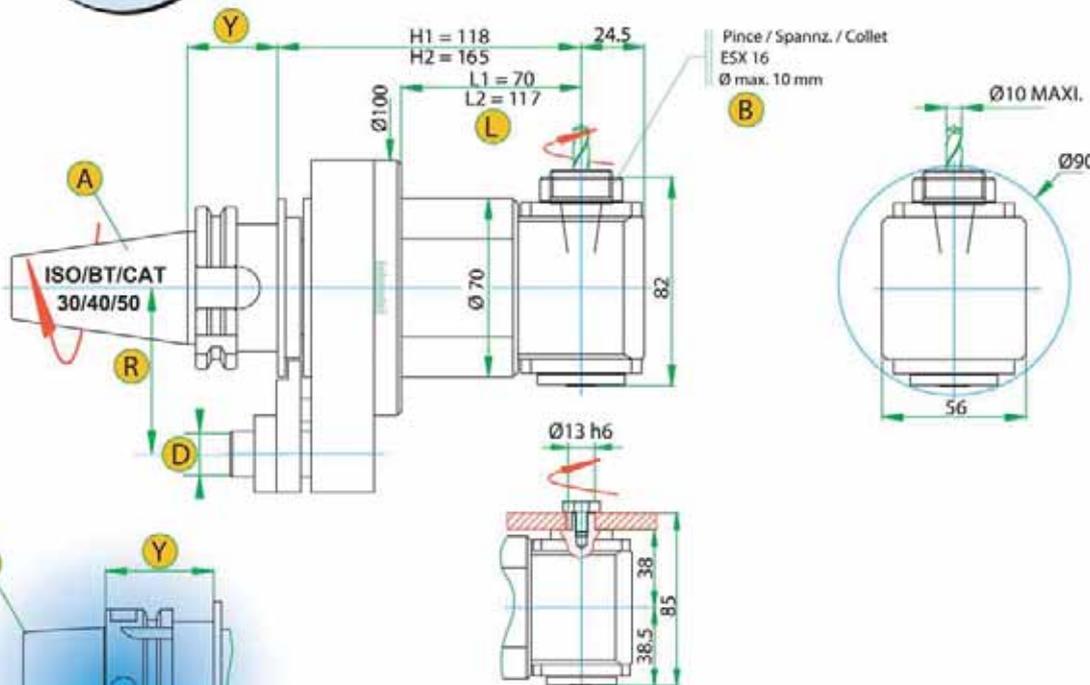
**HSK 40/50/63**



# CEP 10 L1 - CEP 10 L2

**5'000 rpm**

SPECIAL : 7 000 rpm



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n	kW	Nm	1 à 1	kg
5000 t/min u/min rpm	1.5 kW	12 Nm	1 à 1	5.5 à 9 kg

**HSK 63/80**

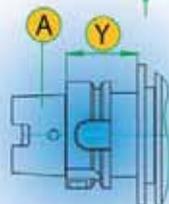
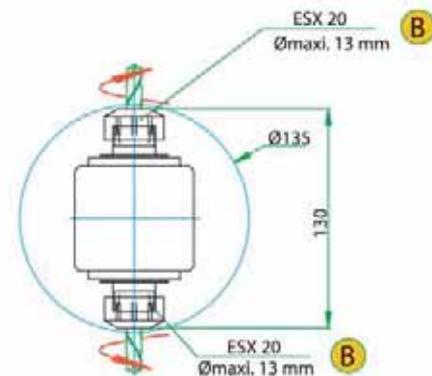
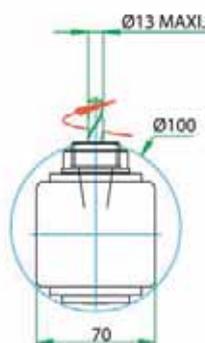
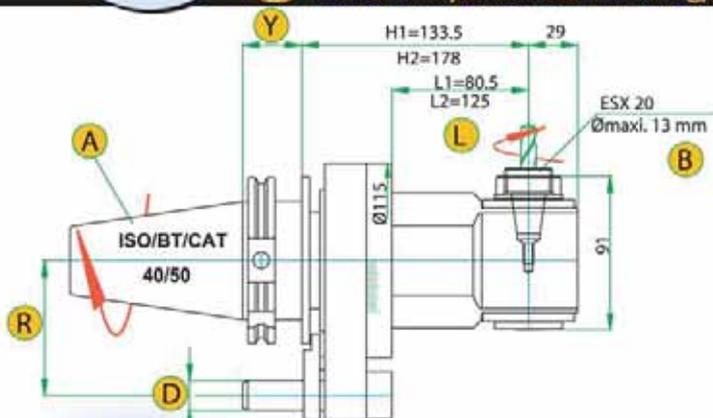


# CEP 13 L1 - CEP 13 L2

4'500 rpm

SPECIAL : 6 000 rpm

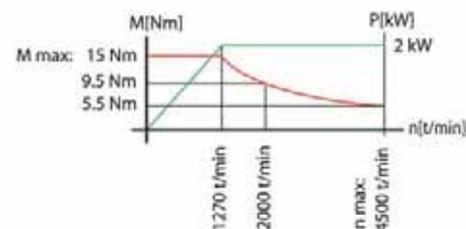
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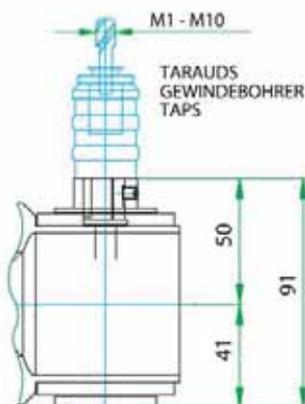
HSK 63/100

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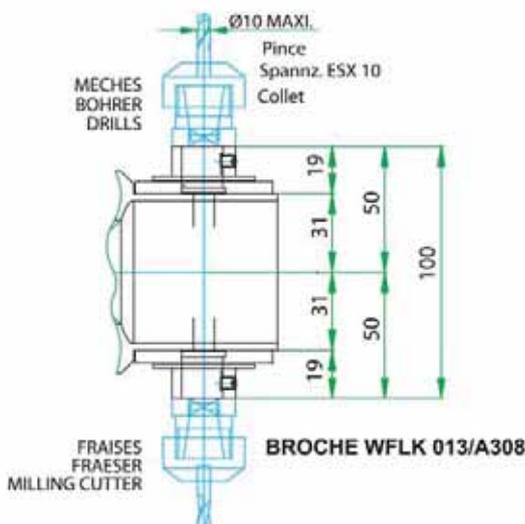
	<b>kW</b>	<b>Nm</b>		<b>kg</b>
4500 t/min u/min rpm	2.0 kW	15 Nm	1 à 1	> 6 à 10 kg



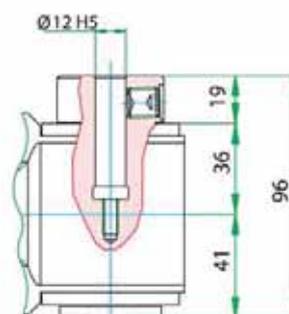
BROCHE WFLK 013/A308



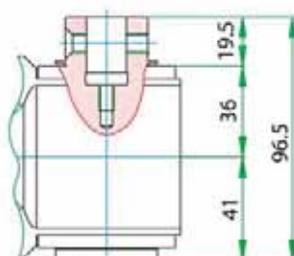
BROCHE WFLK 013/A308



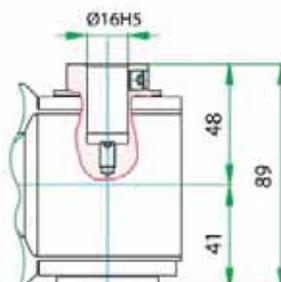
WHISTLE NOTCH DIN 1835-E



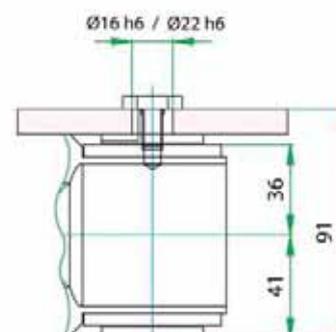
ABS 32



Cyl. Ø16



Cyl. Ø16 OU Cyl. Ø22



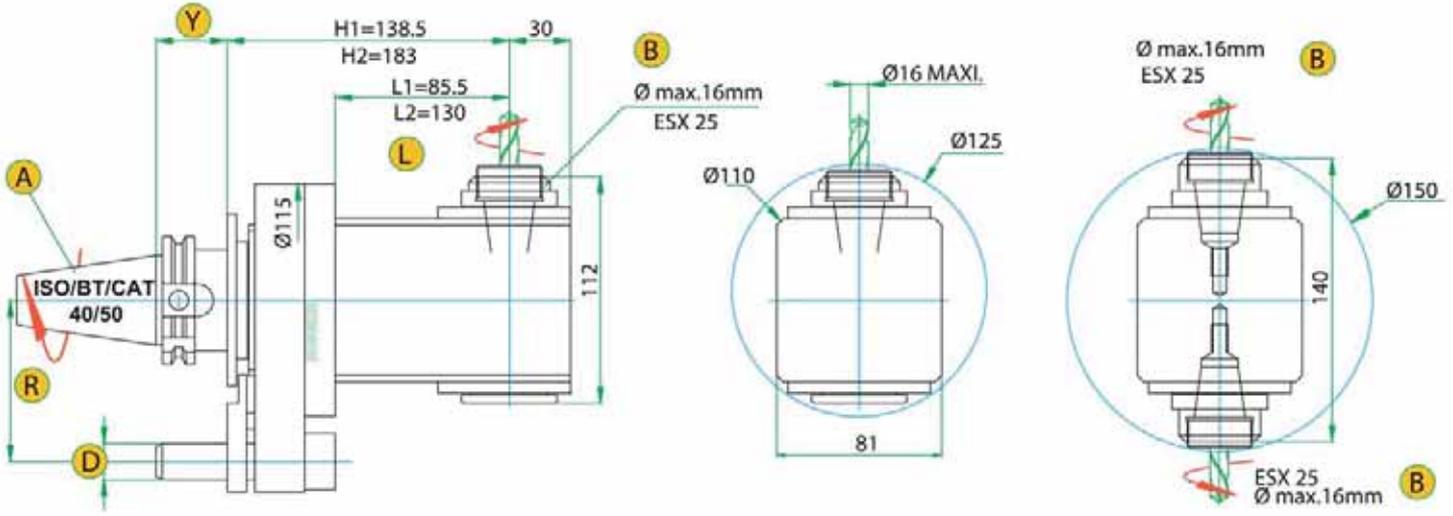


# CEP 16 L1 - CEP 16 L2

**4'500 rpm**

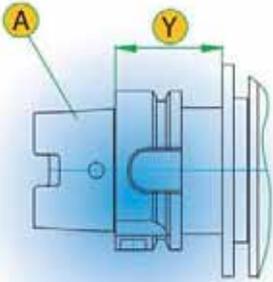
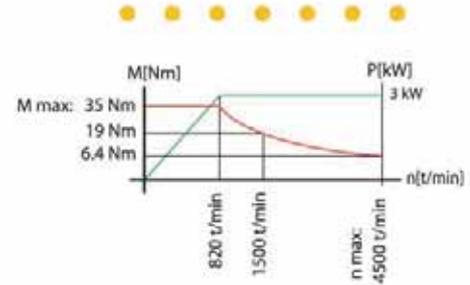
SPECIAL : 5 500 rpm

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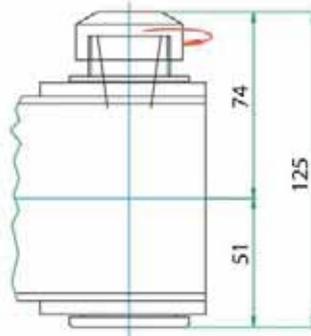
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	kW	Nm		kg
4500 t/min u/min rpm	3.0 kW	35 Nm	1 à 1	~ 6.5 à 11 kg

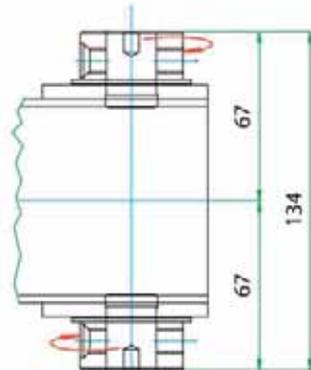


**HSK 63/100**

**ESX 25  
Ø MAX 16 mm**



**ABS 40**



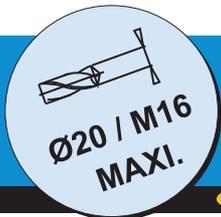
**ABS 40**



**CEP 16 HSK**



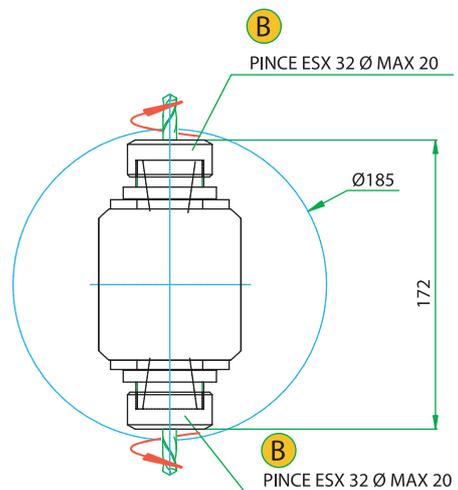
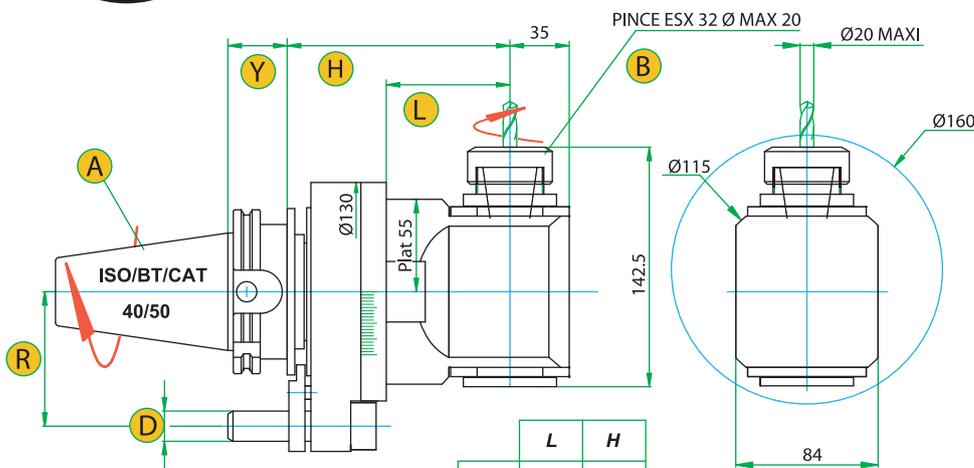
**CEP 20 L1**



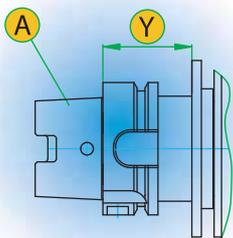
# CEP 20 L1/L2/L...

**3'700 rpm**  
SPECIAL : 5 000 rpm

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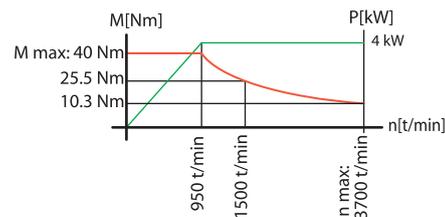


	L	H
1	73	131.5
2	127	185.5
4	260	330.5
6	360	430.5



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	<b>kW</b>	<b>Nm</b>		
3700 t/min u/min rpm	4.0 kW	40 Nm	1 à 1	9 à 13 kg



**HSK 63/80/100**

<p><b>HSK40 MAPAL</b></p>	<p><b>BROCHE WELDON 20</b></p>	<p><b>ABS 50</b></p>	<b>1 BROCHE</b>
<p>W16-20-58A W14-20-58A W12-20-58A OU W10-20-58B W08-20-58B W06-20-58B</p>	<p><b>BROCHE CM 2</b></p>	<p><b>ABS 25</b></p> <p><b>ABS 50</b></p>	
<p><b>BROCHE CYL. Ø22 OU BROCHE CYL. Ø32</b></p> <p>Ø22h6 OU Ø32h6</p>	<p><b>BROCHE KM 40</b></p>	<p><i>Autres broches sur demande</i> <i>Andere Spindeln auf Anfrage</i> <i>Another spindle on request</i></p>	

Porte outil de perçage, fraisage et taraudage  
Werkzeughalter zum Bohren, Fräsen und Gewindeschneiden  
Tool-holder for drilling, milling and tapping

**WFLK 115/A308**

FRAISES / FRAESER / MILLING CUTTER  
MECHES / BOHRER / DRILLS  
TARAUDS / GEWINDEBOHRER / TAPS

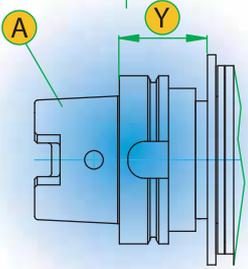
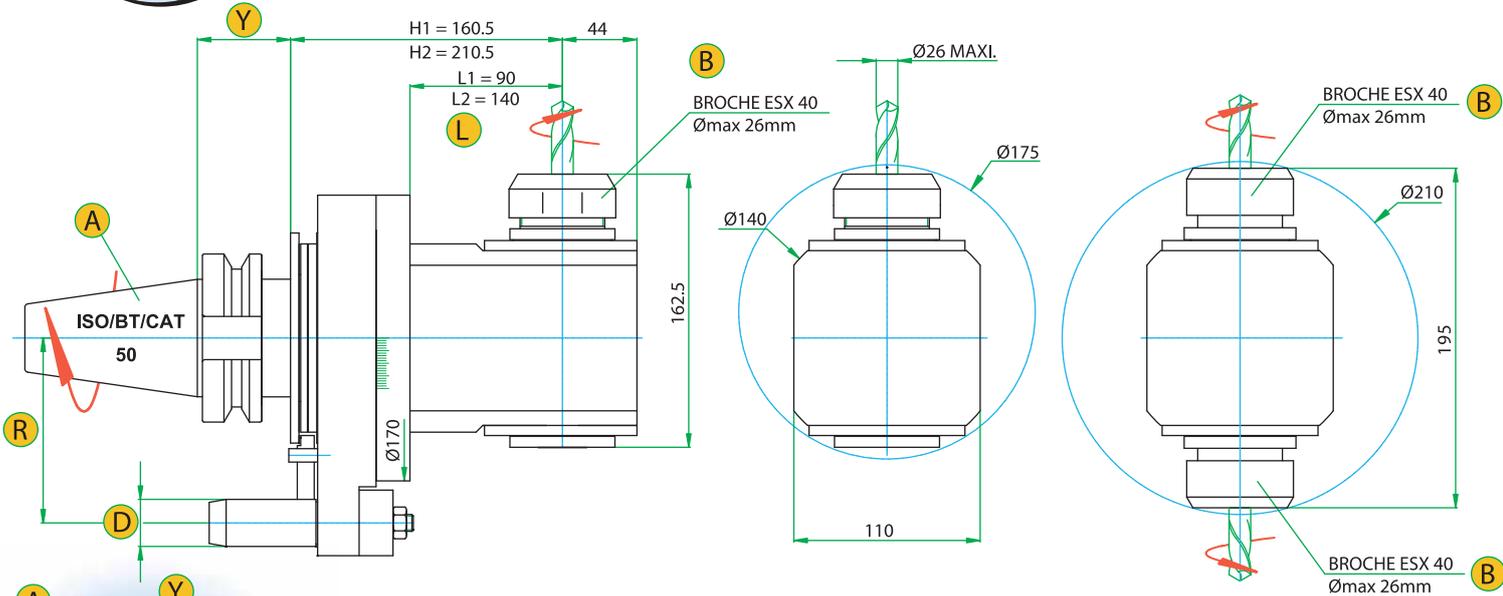


# CEP 26 L1 - CEP 26 L2

**3'000 rpm**

SPECIAL : 4 000 rpm

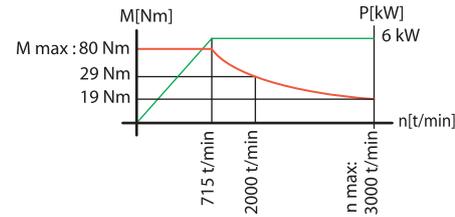
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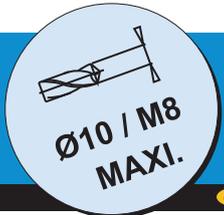
**HSK 100**

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	<b>kW</b>	<b>Nm</b>		
3000 t/min u/min rpm	6.0 kW	80 Nm	1 à 1	13 à 18 kg



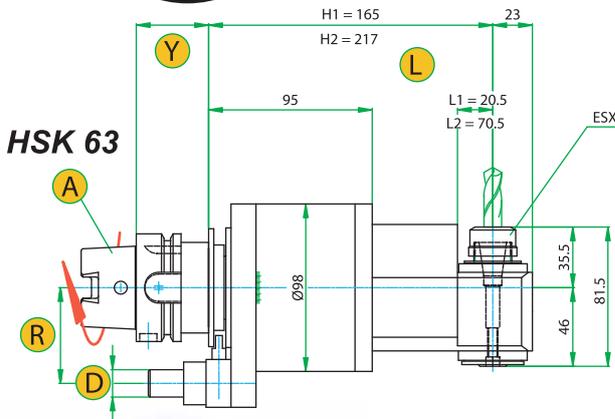
<p><b>WFLK 225</b></p> <p>MECHES BOHRER DRILLS</p> <p>Ø20 MAXI ESX 32</p>	<p><b>Broche 2 sorties WFLK 225</b></p>	<p><b>BROCHE ABS 40</b></p>	<p><b>ABS 63</b></p>	<p><b>ABS 63</b></p>
<p><b>BROCHE CYL 22</b></p>	<p><b>BROCHE CYL 22</b></p>	<p><b>BROCHE CYL 40</b></p>	<p><b>CM3</b></p>	<p><b>BROCHE CK6 - MVS63-36</b></p>
<p><b>WELDON Ø 25</b></p>	<p><b>WELDON Ø25</b></p>	<p><b>WELDON Ø32</b></p>	<p><b>CAPTO-4</b></p>	<p>Autres broches sur demande Andere Spindeln auf Anfrage Another spindle on request</p>



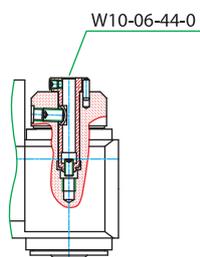
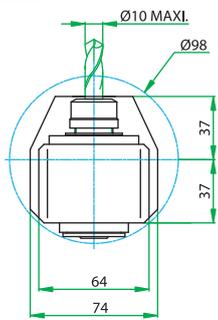
# CMP 10 L1 - CMP 10 L2

10'000 rpm

CH internet : www.pibomulti.com mail : info@pibomulti.com USA internet : www.pibomulti-na.com mail : info@pibomulti-na.com



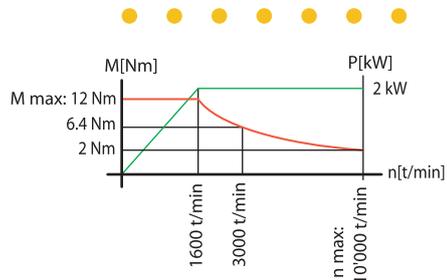
## BROCHE W 10



AUTRE BROCHE SUR DEMANDE  
ANDERE SPINDELN AUF ANFRAGE  
ANOTHER SPINDLE ON REQUEST

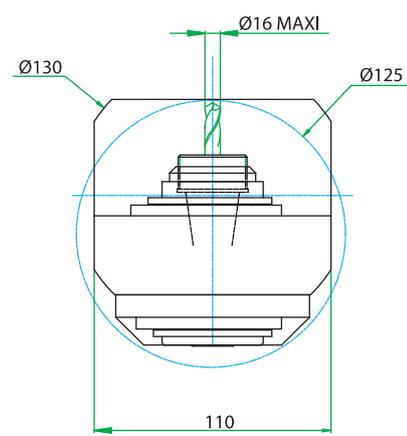
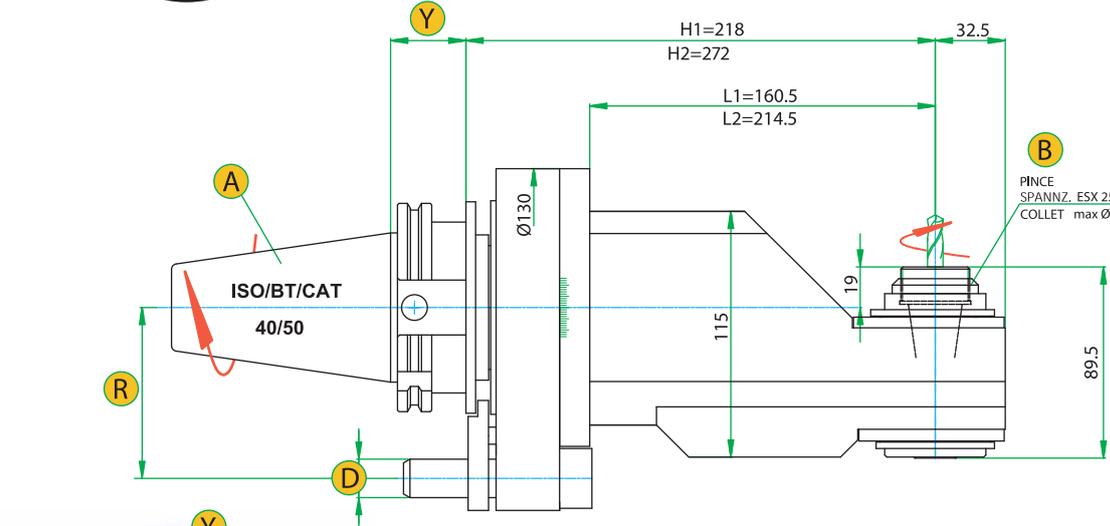
voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
10000 t/min u/min rpm	2.0 kW	12 Nm	1 à 2.22	≈ 5 à 6 kg



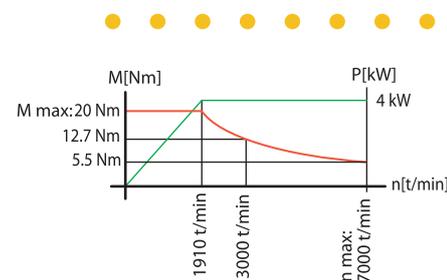
# CMP 16 L1 - CMP 16 L2

7'000 rpm

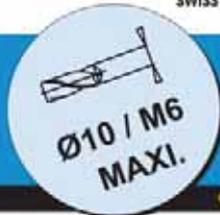


voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
7000 t/min u/min rpm	4.0 kW	20 Nm	1 à 2	≈ 15 à 17 kg



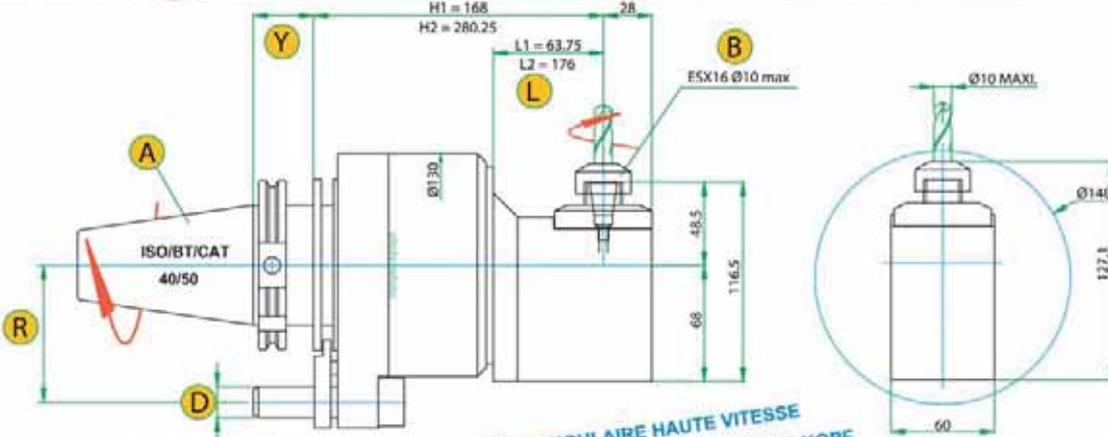
HSK 63/80/100



# CMP 10X5 L1 - CMP 10X5 L2

18'000 rpm

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

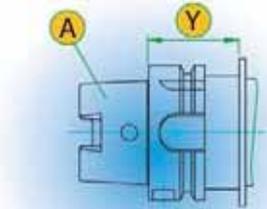
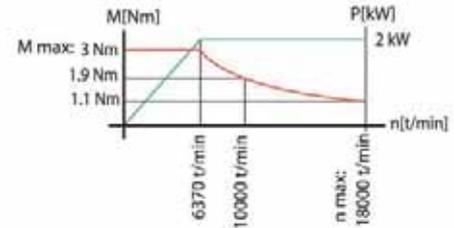


TETE ANGULAIRE HAUTE VITESSE  
HOCHGESCHWINDIGKEITSWINKELKOPF  
HIGH SPEED ANGULAR HEAD



voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
18000 t/min u/min rpm	2.0 kW	3.0 Nm	1 à 5	≈ 8.5 à 12 kg

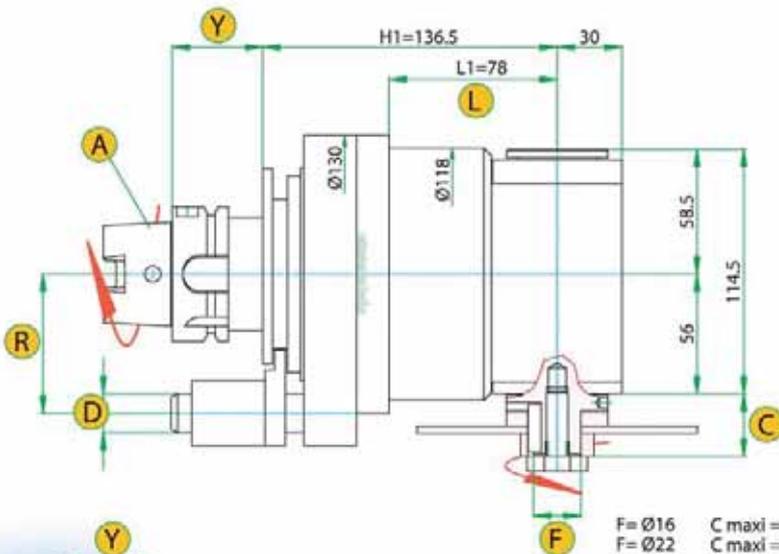


HSK 63/80/100

## TETE DE SCIAGE SÄGEKOPF SAWING HEAD

# CEF 16/22/27/32

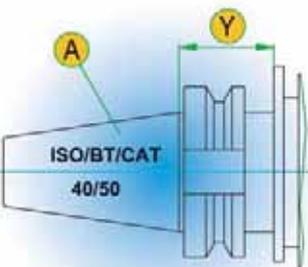
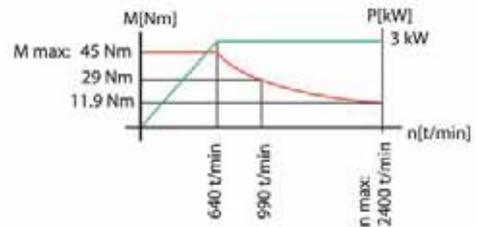
2'400 rpm



F = Ø16 C maxi = 28  
F = Ø22 C maxi = 28  
F = Ø27 C maxi = 25  
F = Ø32 C maxi = 28

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
2400 t/min u/min rpm	3.0 kW	45 Nm	1 à 0.74	≈ 6 à 6.5 kg

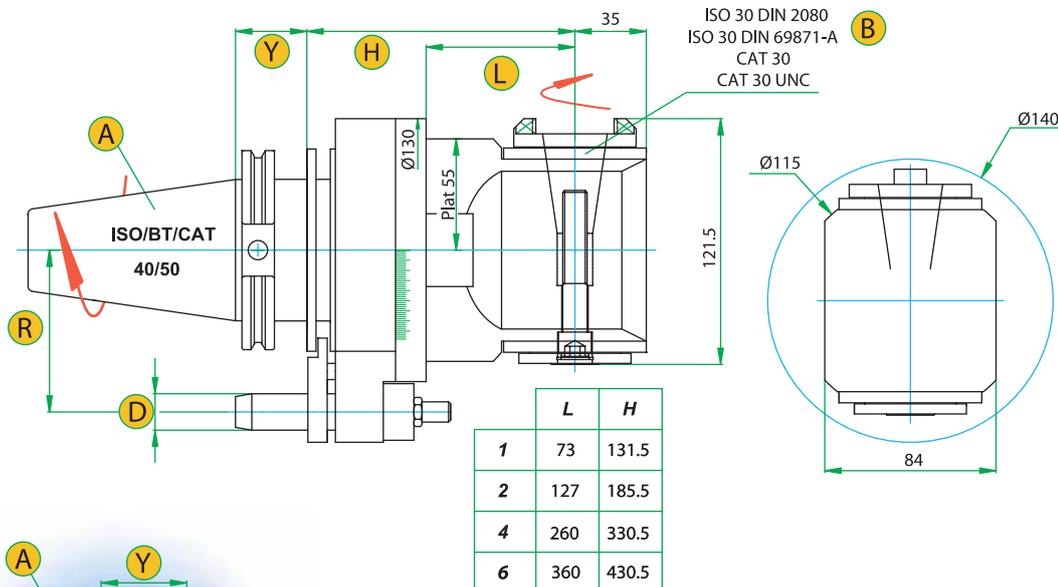


# CEC 30 L1/L2/L...

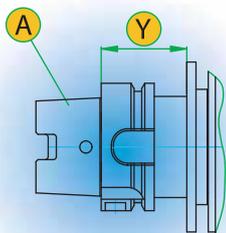
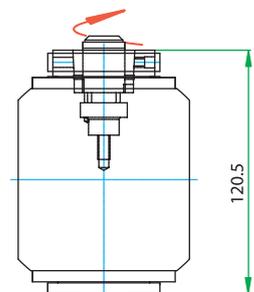
3'700 rpm

SPECIAL : 5 000 rpm

CH internet : www.pibomulti.com mail : info@pibomulti.com USA internet : www.pibomulti-na.com mail : info@pibomulti-na.com



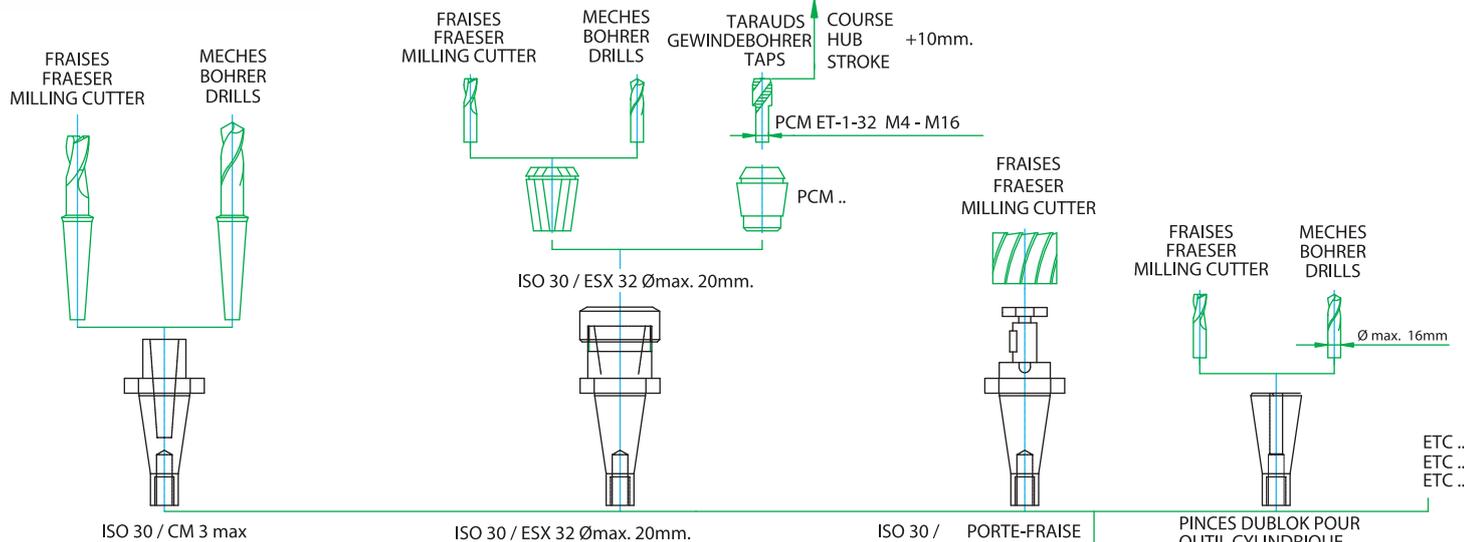
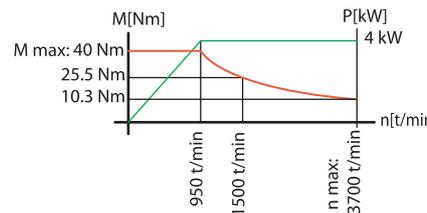
## HSK 40 MAPAL



## HSK 63/80/100

voir page / siehe Seite / see page 39-40

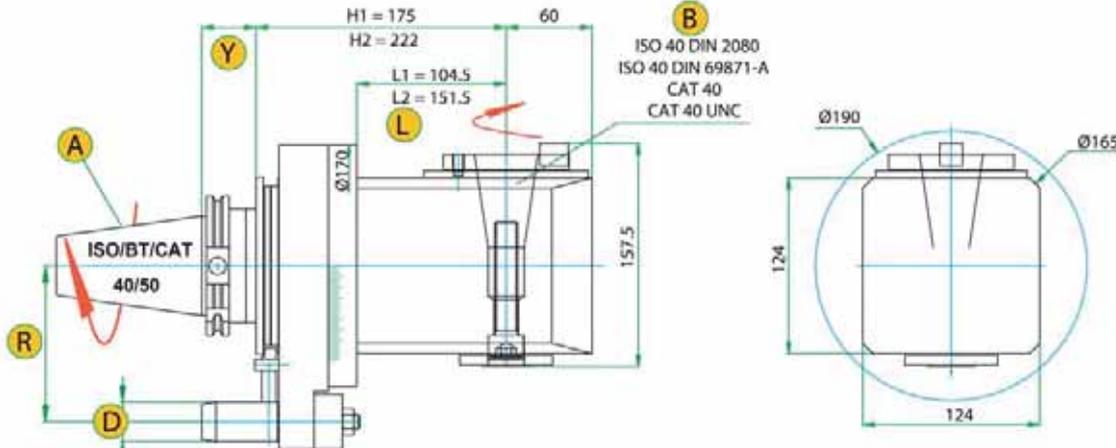
	kW	Nm		
3700 t/min u/min rpm	4.0 kW	40 Nm	1 à 1	≈ 9 à 13 kg



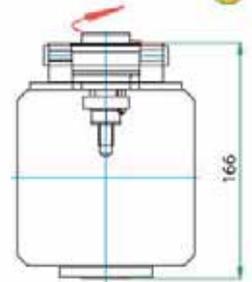
# CEC 40 L1 - CEC 40 L2

3'000 rpm

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

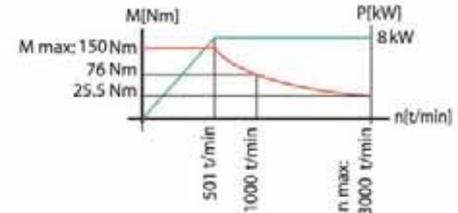


## HSK 63

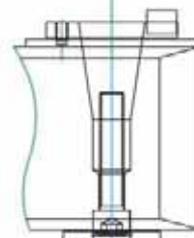
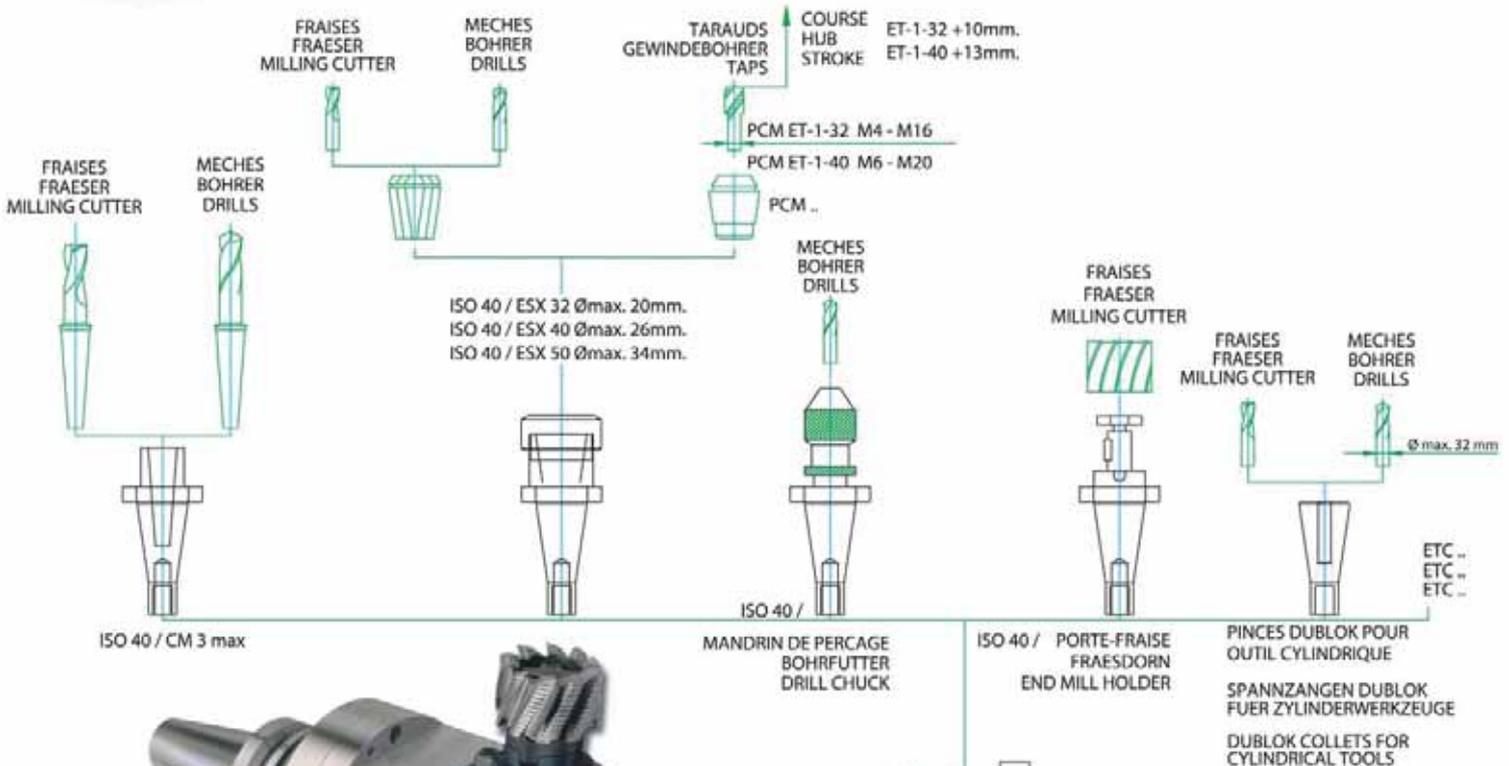


voir page / siehe Seite / see page 39-40

	<b>kW</b>	<b>Nm</b>		
3000 <small>U/min</small> <small>u/min</small> <small>rpm</small>	8.0 kW	150 Nm	1 à 1	20 à 25 kg



## HSK 80/100/125



**FLASQUE  
FLANGE  
FLANSCH**

**FEC 30 L1/L2/L...**

**3'700 rpm**  
SPECIAL : 5 000 rpm

internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

ISO 30 DIN 2080  
ISO 30 DIN 69871-A  
CAT 30  
CAT 30 UNC  
Voir / siehe / see  
CEC 40

ROTAX GS 19/24

FLASQUE / FLANGE / FLANSCH

	L	H
1	73	135
2	127	189
4	260	322
6	360	422

**voir page / siehe Seite / see page 39-40**

	<b>kW</b>	<b>Nm</b>		
3700 t/min u/min rpm	4.0 kW	40 Nm	1 à 1	≈ 9 à 13 kg

M[Nm] P[kW]  
M max: 40 Nm 4 kW  
25.5 Nm  
10.3 Nm  
n[t/min] n max: 3700 t/min  
950 t/min 1500 t/min

**FLASQUE  
FLANGE  
FLANSCH**

**FEC 40 L1 - FEC40 L2**

**3'000 rpm**

ISO 40 DIN 2080  
ISO 40 DIN 69871-A  
CAT 40  
CAT 40 UNC

FLASQUE / FLANGE / FLANSCH

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	<b>kW</b>	<b>Nm</b>		
3000 t/min u/min rpm	8.0 kW	150 Nm	1 à 1	≈ 20 à 25 kg

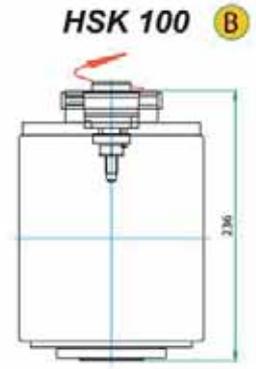
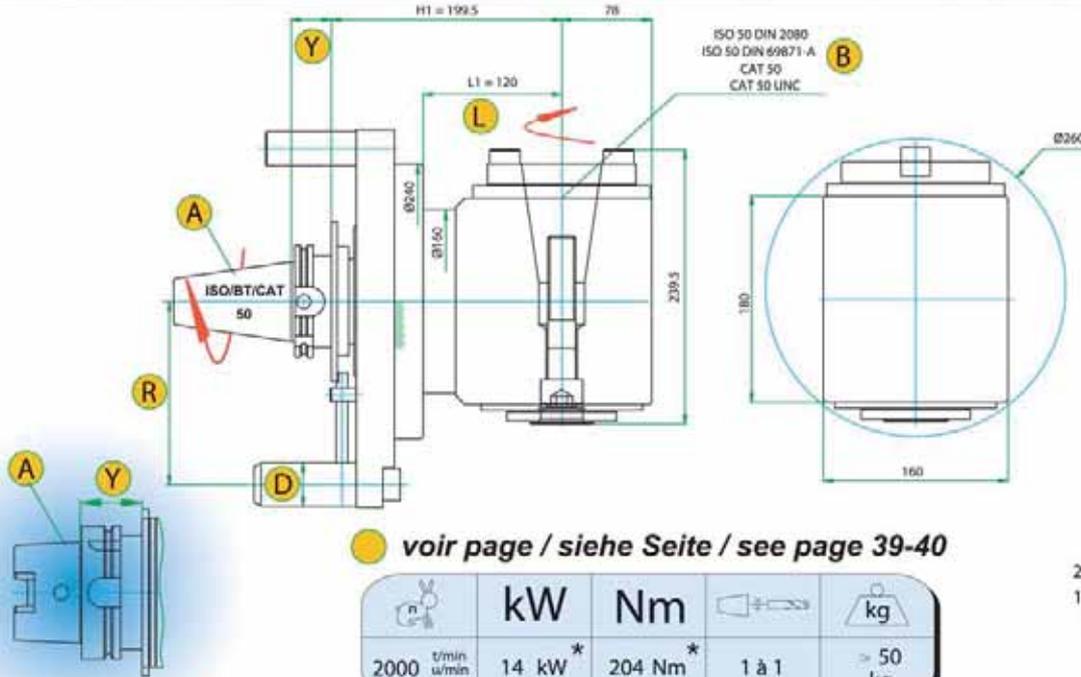
M[Nm] P[kW]  
M max: 150 Nm 8 kW  
76 Nm  
25.5 Nm  
n[t/min] n max: 3000 t/min  
501 t/min 1000 t/min

# CEC 50

2'000 rpm

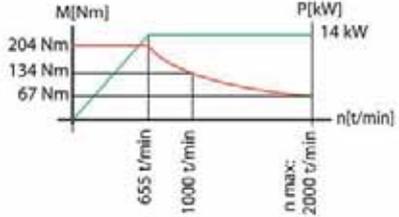
Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [Info@pibomulti.com](mailto:Info@pibomulti.com)

Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [Info@pibomulti-na.com](mailto:Info@pibomulti-na.com)



voir page / siehe Seite / see page 39-40

	<b>kW</b>	<b>Nm</b>		
2000 t/min u/min rpm	14 kW*	204 Nm*	1 à 1	> 50 kg



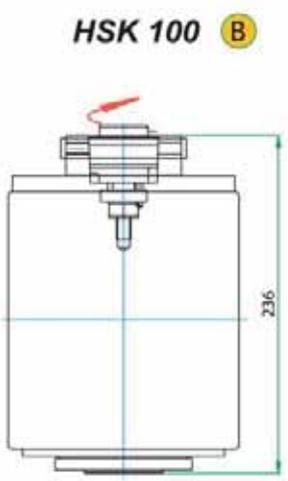
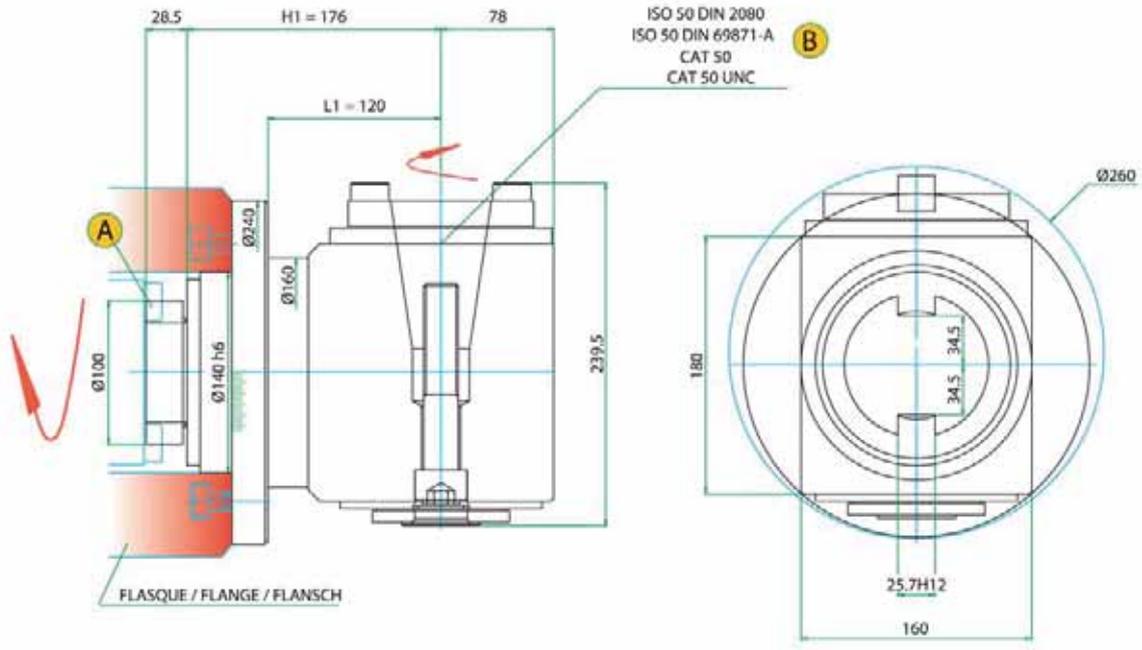
HSK 100/125

\* Sur demande, avec porte-broche CTAR 50-20, voir page 21  
Auf Anfrage mit Spindelhalter CTAR 50-20, siehe Seite 21  
On request with spindle holder CTAR 50-20, see page 21

## FLASQUE FLANGE FLANSCH

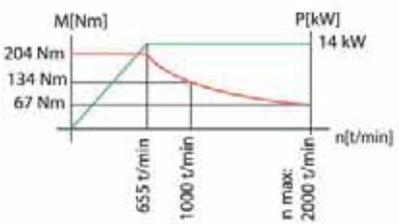
# FEC 50

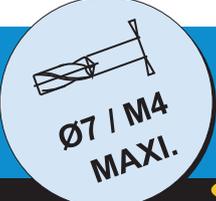
2'000 rpm



voir page / siehe Seite / see page 39-40

	<b>kW</b>	<b>Nm</b>		
2000 t/min u/min rpm	14 kW	204 Nm	1 à 1	> 50 kg

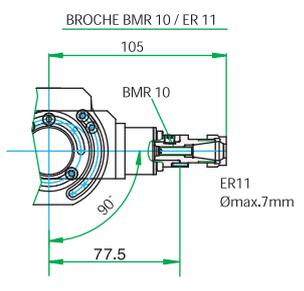
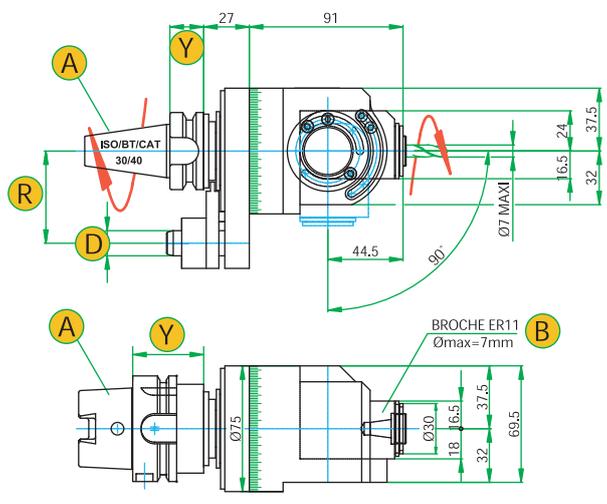




# CTAR 07

10'000 rpm

CH internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)



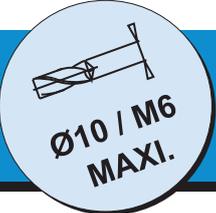
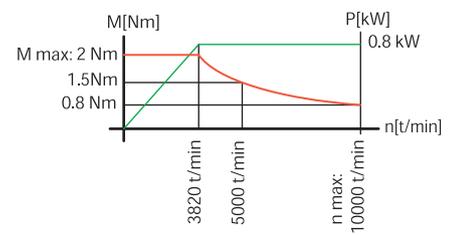
**A CHANGEMENT RAPIDE  
SCHNELLWECHSEL  
QUICK CHANGE**

HSK 40/50/63

voir page / siehe Seite / see page 39-40

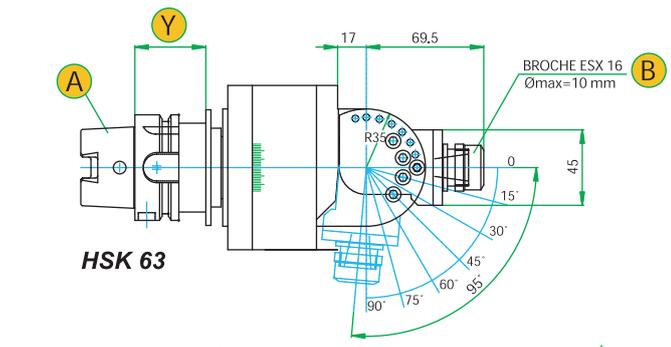
AUTRE BROCHE SUR DEMANDE  
ANDERE SPINDELN AUF ANFRAGE  
ANOTHER SPINDLE ON REQUEST

BROCHE SPINDEL SPINDLE	kW	Nm		kg
10000 t/min u/min rpm	0.8 kW	2 Nm	1 à 3.2	≈ 3 à 4 kg



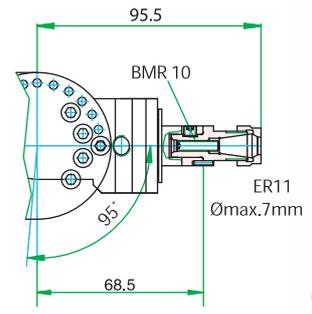
# CTAR10

7'000 rpm

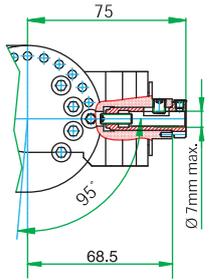


HSK 63

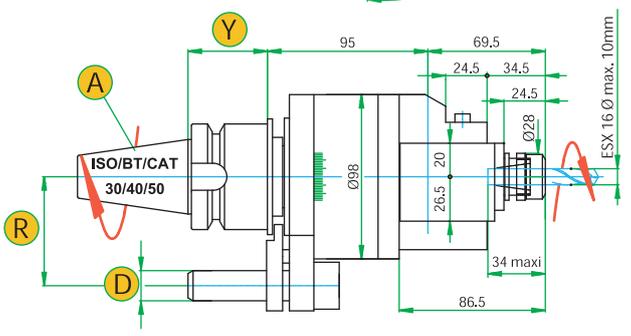
BROCHE BMR 10 / ER 11



BROCHE BMR 10  
DOUILLE W07-11-38



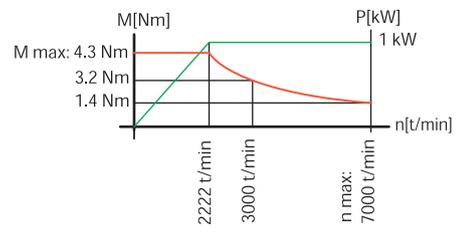
**A CHANGEMENT RAPIDE  
SCHNELLWECHSEL  
QUICK CHANGE**



AUTRE BROCHE SUR DEMANDE  
ANDERE SPINDELN AUF ANFRAGE  
ANOTHER SPINDLE ON REQUEST

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
7000 t/min u/min rpm	1.0 kW	4.3 Nm	1 à 2	≈ 6.5 à 7.5 kg







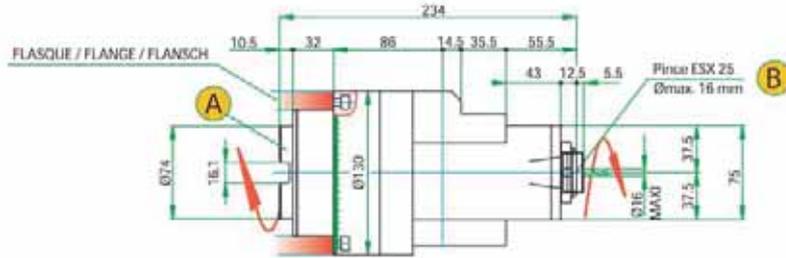
**FLASQUE  
FLANGE  
FLANSCH**

# FTAR 16

**4'500 rpm**

SPECIAL : 5 500 rpm

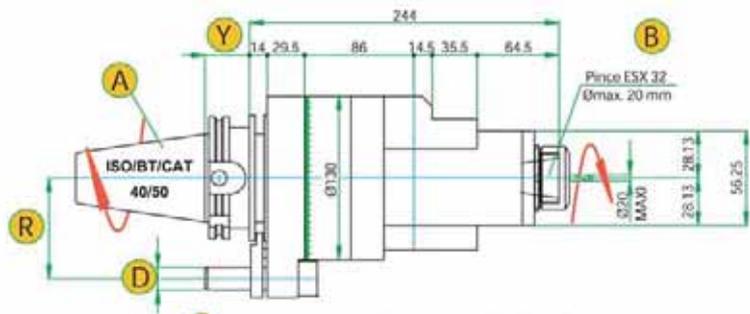
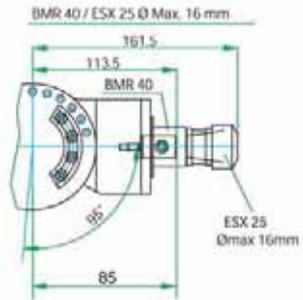
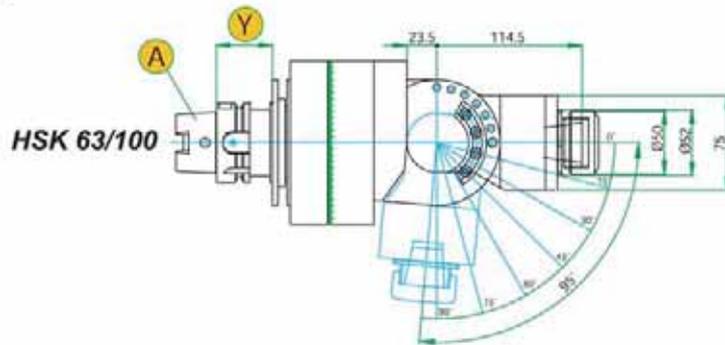
CH internet : www.pibomulti.com mail : info@pibomulti.com USA internet : www.pibomulti-na.com mail : info@pibomulti-na.com



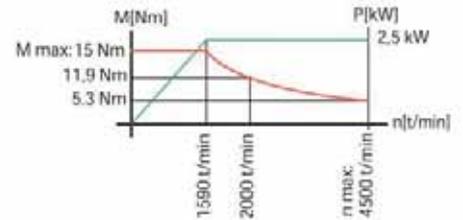
# CTAR 20

**4'500 rpm**

SPECIAL : 5 500 rpm



**A CHANGEMENT RAPIDE  
SCHNELLWECHSEL  
QUICK CHANGE**



● voir page / siehe Seite / see page 39-40

AUTRE BROCHE SUR DEMANDE  
ANDERE SPINDELN AUF ANFRAGE  
ANOTHER SPINDLE ON REQUEST

BROCHE SPINDEL SPINDLE	kW	Nm		kg
4500 t/min u/min rpm	2.5 kW	15 Nm	1 à 1.39	> 17 kg

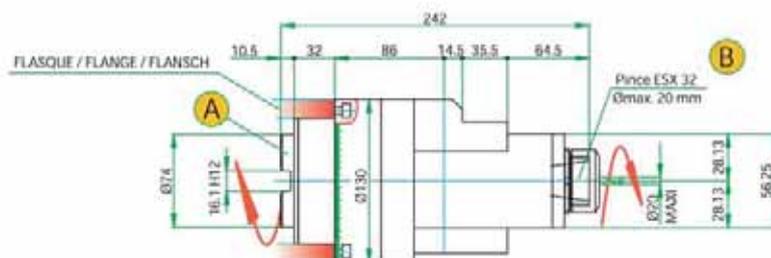


**FLASQUE  
FLANGE  
FLANSCH**

# FTAR 20

**4'500 rpm**

SPECIAL : 5 500 rpm

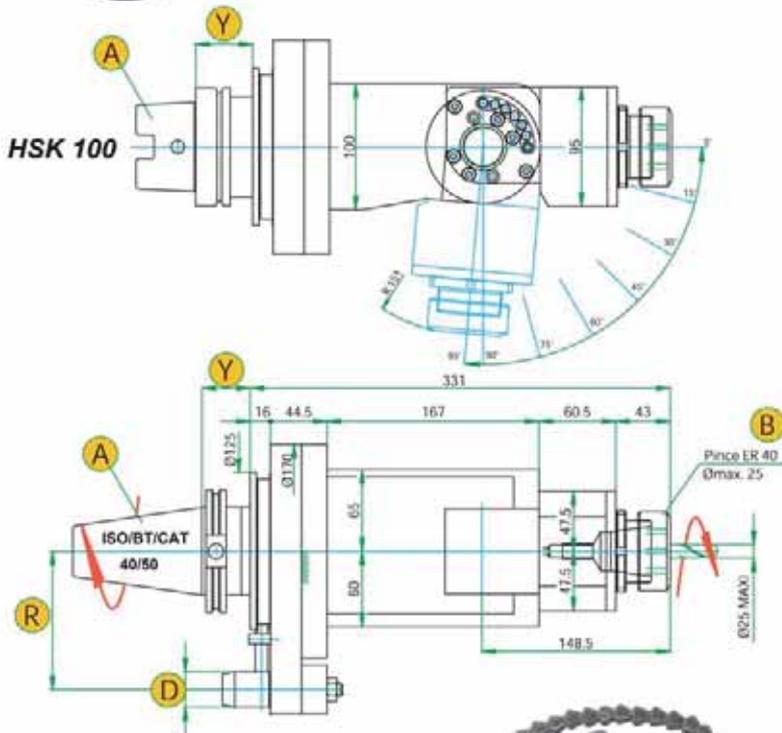




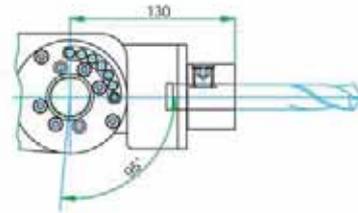
# CTAR 25

3'000 rpm

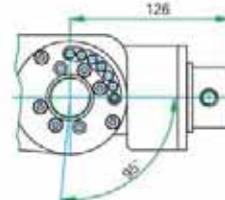
Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)



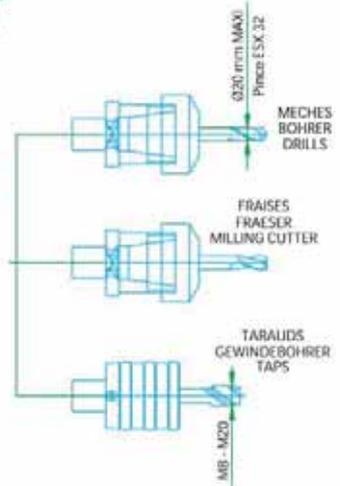
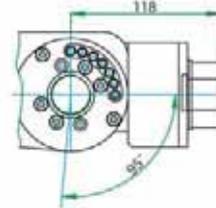
## WELDON 20



## KM 40



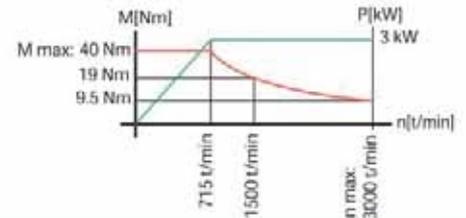
## WFLK 225



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AUTRE BROCHE SUR DEMANDE  
ANDERE SPINDELN AUF ANFRAGE  
ANOTHER SPINDLE ON REQUEST

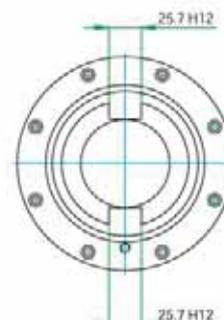
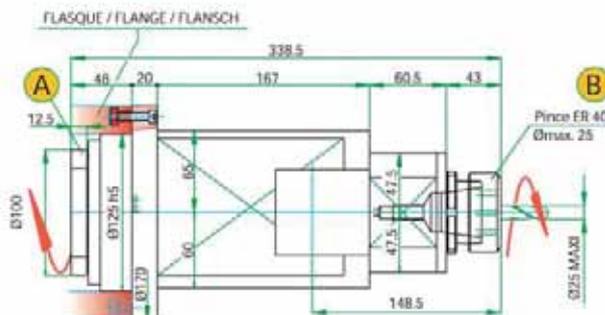
BROCHE SPINDEL SPINDELE	kW	Nm		kg
3000 u/min u/min rpm	3.0 kW	40 Nm	1 à 1	≈ 30 à 33 kg



# FLASQUE FLANGE FLANSCH

# FTAR 25

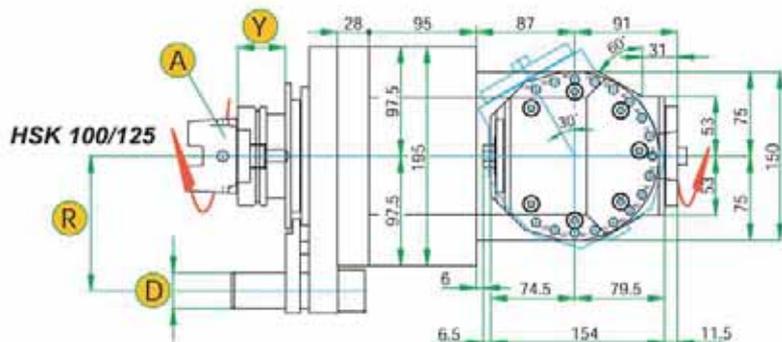
3'000 rpm



# CTAR 40 / CTARH 40

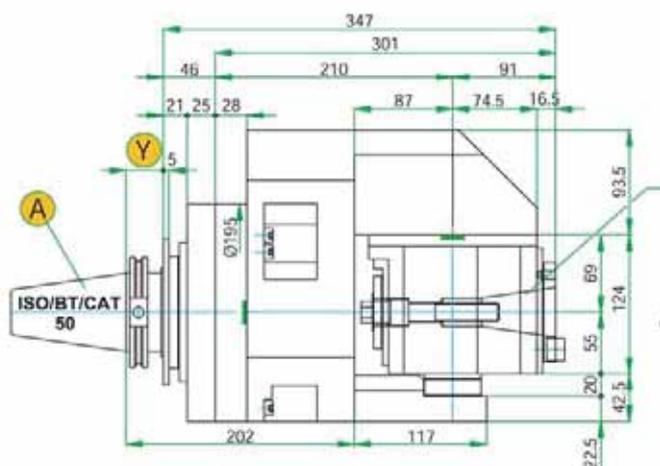
3'000 rpm

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)



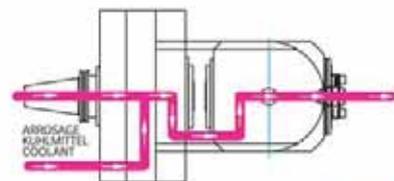
**CTAR 40**  
 GOUPILLE D'INDEXION PAS 15°  
 INDEXIERUNGSTIFT TEILUNG 15°  
 LOCATION PIN THREAD 15°

**CTARH 40**  
 DENTURE HIRTH 360° PAS 2.5°  
 HIRTH-VERZÄHNUNG 360° TEILUNG 2.5°  
 HIRTH-COUPLING 360° THREAD 2.5°



**B**  
 ISO 40 DIN 2080  
 ISO 40 DIN 69871-A  
 BT 40  
 CAT 40  
 CAT 40 UNC

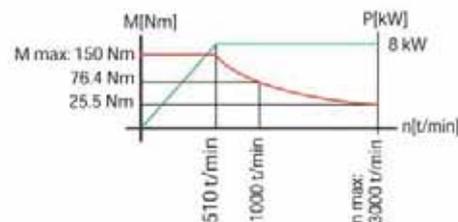
HSK 63 SUR DEMANDE  
 AUF ANFRAGE - ON REQUEST



ARROSAGE CENTRAL  
 INNERE KÜHLMITTELZUFUHR  
 COOLANT THROUGH CENTRE

voir page / siehe Seite / see page 39-40

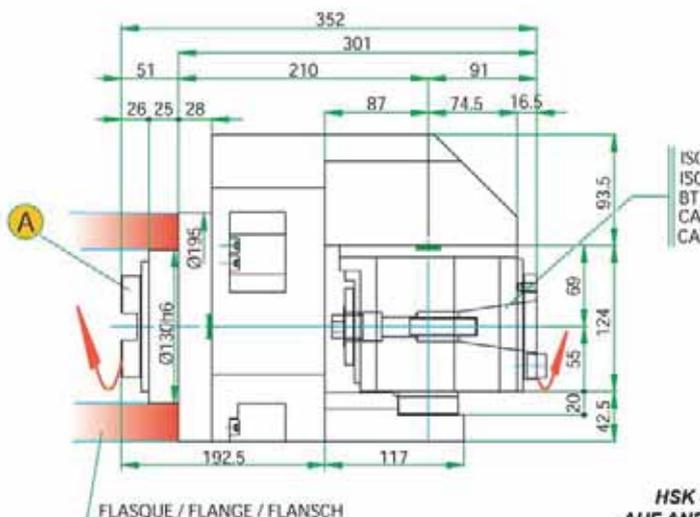
BROCHE SPINDEL SPINDLE	kW	Nm		kg
3000 t/min u/min rpm	8.0 kW	150 Nm	1 à 1.5	> 45 kg



FLASQUE  
 FLANGE  
 FLANSCH

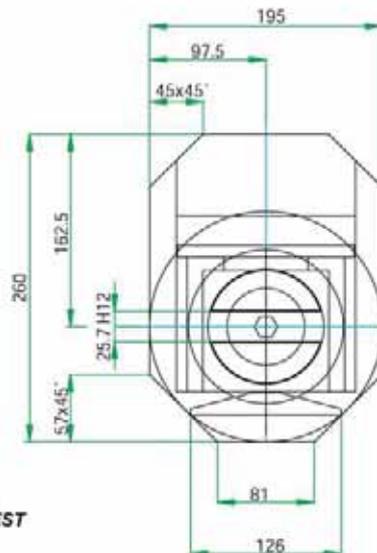
# FTAR 40 / FTARH 40

3'000 rpm



**B**  
 ISO 40 DIN 2080  
 ISO 40 DIN 69871-A  
 BT 40  
 CAT 40  
 CAT 40 UNC

HSK 63 SUR DEMANDE  
 AUF ANFRAGE - ON REQUEST

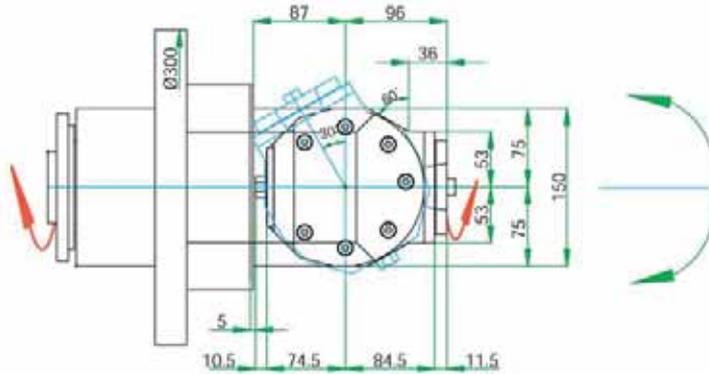


# FTAR 40 - 2.5 / FTARH 40 - 2.5

4'500 rpm

CH internet : www.pibomulti.com mail : info@pibomulti.com USA internet : www.pibomulti-na.com mail : info@pibomulti-na.com

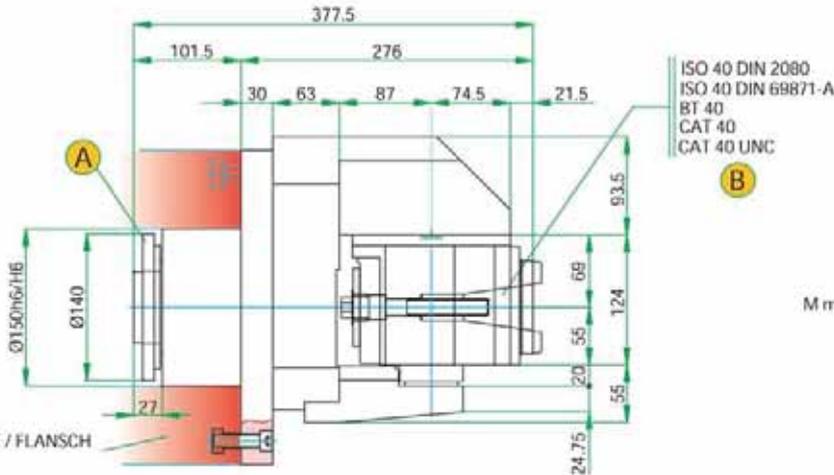
Voir / siehe / see  
CTAR 40



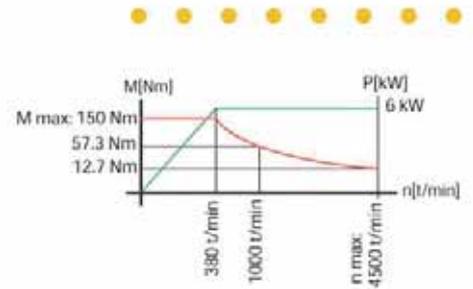
**CTAR 40**  
GOUPILLE D'INDEXION PAS 15°  
INDEXIERUNGSTIFT TEILUNG 15°  
LOCATION PIN THREAD 15°

±120° OU

**CTARH 40**  
DENTURE HIRTH 360° PAS 2.5°  
HIRTH-VERZÄHNUNG 360° TEILUNG 2.5°  
HIRTH-COUPLING 360° THREAD 2.5°



HSK 63 SUR DEMANDE  
AUF ANFRAGE - ON REQUEST



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BROCHE SPINDEL SPINDLE	kW	Nm		
4500 t/min rpm	6.0 kW	150 Nm	1 à 2.5	> 50 kg



**FTAR 40**



**CTAR 50**



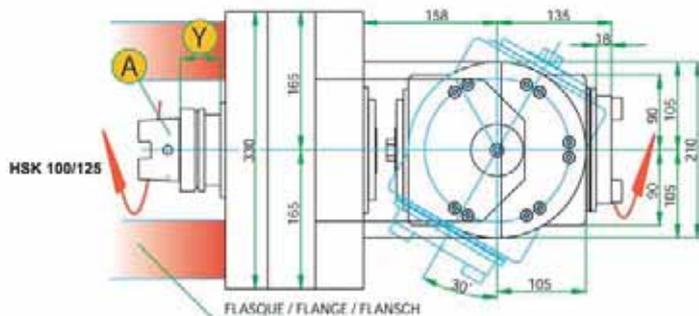
**FTAR 50**

**CTARH 50-20** 1'800 rpm

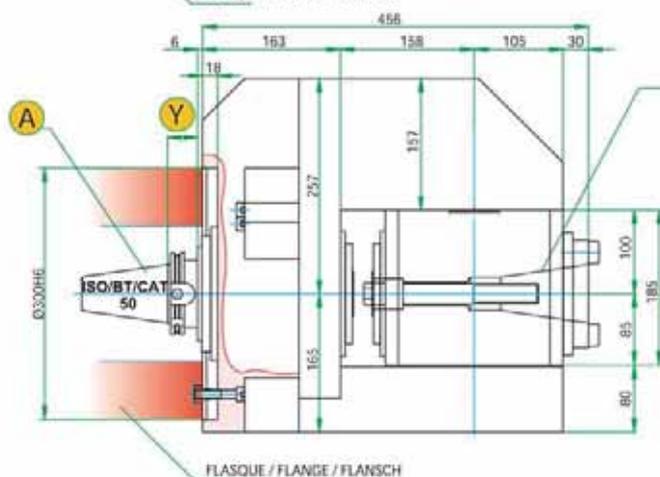
**CTARH 50-20-2** 3'600 rpm

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com)

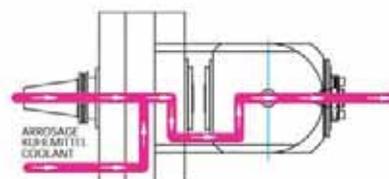
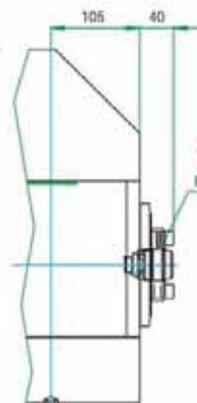
USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)



+/- 120° ou indexion à denture tous les 1°  
Indexierung mit Verzahnung alle 1°  
location device with teeth every 1°



ISO 50 DIN 2080  
ISO 50 DIN 69871-A  
BT 50  
CAT 50  
CAT 50 UNC



ARROSAGE CENTRAL  
INNERE KÜHMITTELZUFUHR  
COOLANT THROUGH CENTRE

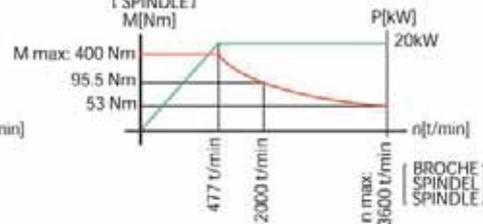
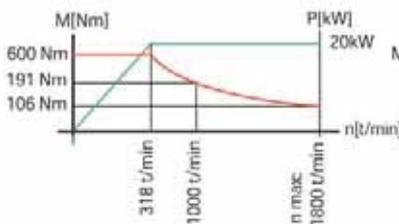
HSK 80 SUR DEMANDE  
AUF ANFRAGE - ON REQUEST

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**CTAR 50-20**

**CTAR 50-20-2**

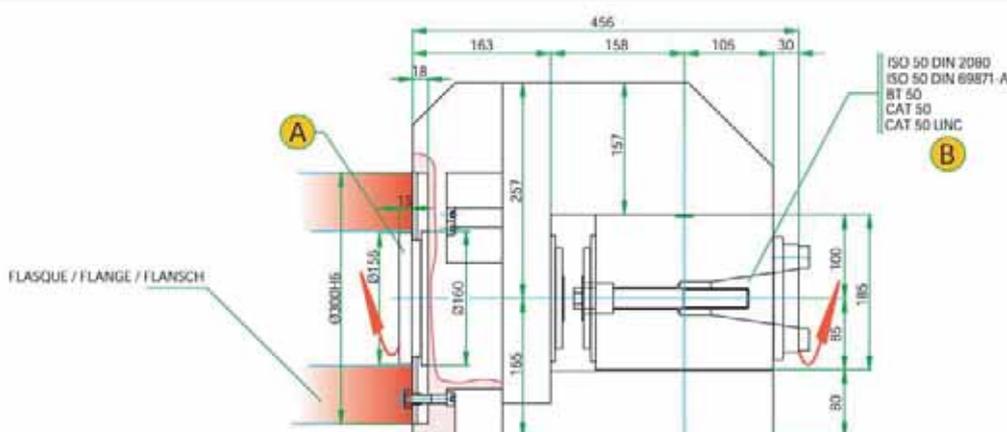
	CTAR 50-20		CTAR 50-20-2	
BROCHE SPINDEL SPINDLE	kW	Nm		
1800 T/min w/min rpm	20 kW	600 Nm	1 à 1	≈ 200 kg
3600 T/min w/min rpm	20 kW	400 Nm	1 à 2	≈ 200 kg



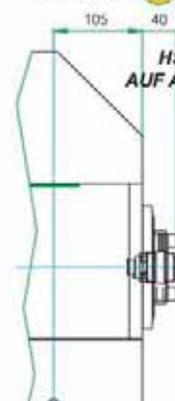
**FLASQUE  
FLANGE  
FLANSCH**

**FTARH 50-20** 1'800 rpm

**FTARH 50-20-2** 3'600 rpm



HSK 63 B



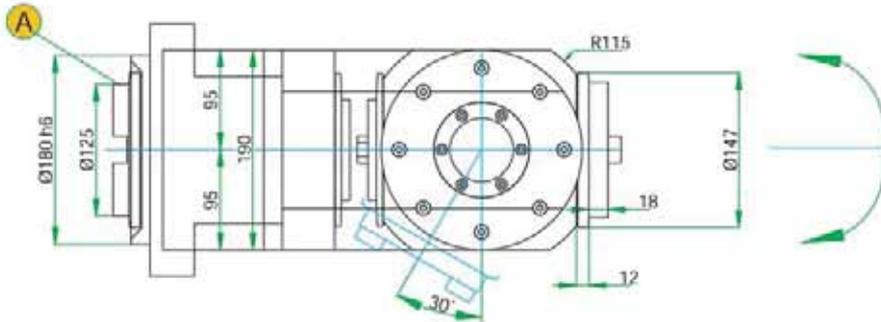
HSK 80 SUR DEMANDE  
AUF ANFRAGE - ON REQUEST

**FLASQUE  
FLANGE  
FLANSCH**

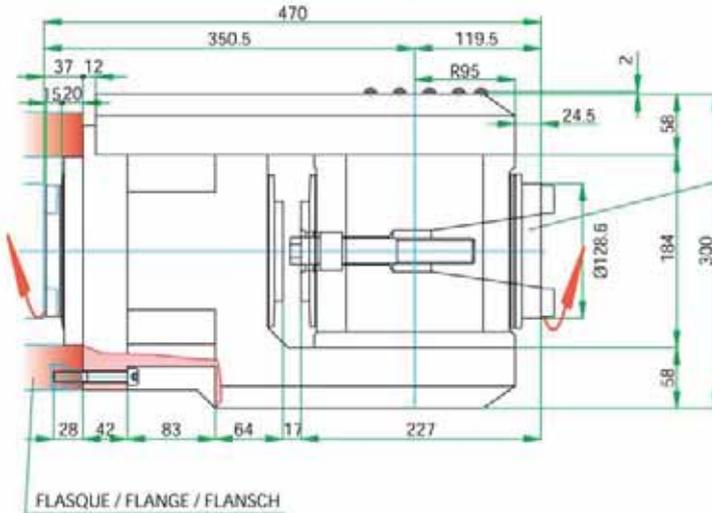
**FTARH 50-14**

**2'000 rpm**

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)



+/- 120° ou  
indexion à denture tous les 1°  
Indexierung mit Verzahnung alle 1°  
location device with teeth every 1°

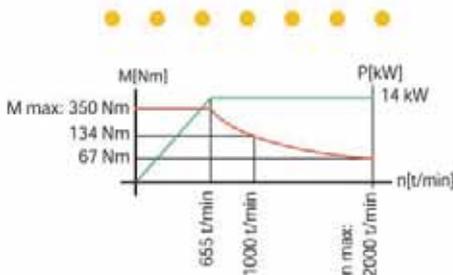


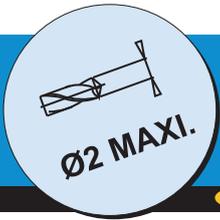
**B**  
ISO 50 DIN 2080  
ISO 50 DIN 69871-A  
BT 50  
CAT 50  
CAT 50 UNC

**HSK 63-80 SUR DEMANDE  
AUF ANFRAGE - ON REQUEST**

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BROCHE SPINDEL SPINDLE	kW	Nm		
2000 t/min rpm	14 kW	350 Nm	1 à 1	≈ 140 kg

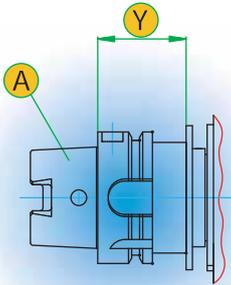




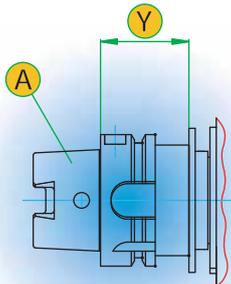
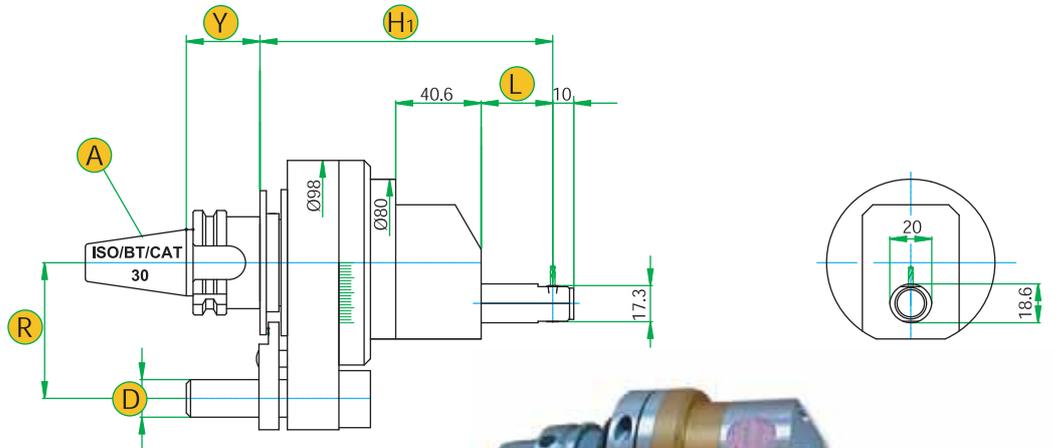
# CDP 02 L1/L2/L3/L...

8'000 rpm

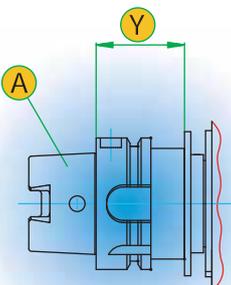
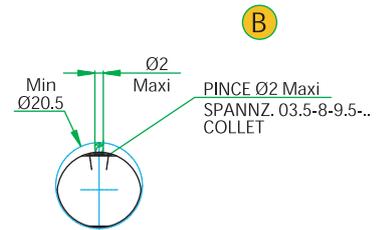
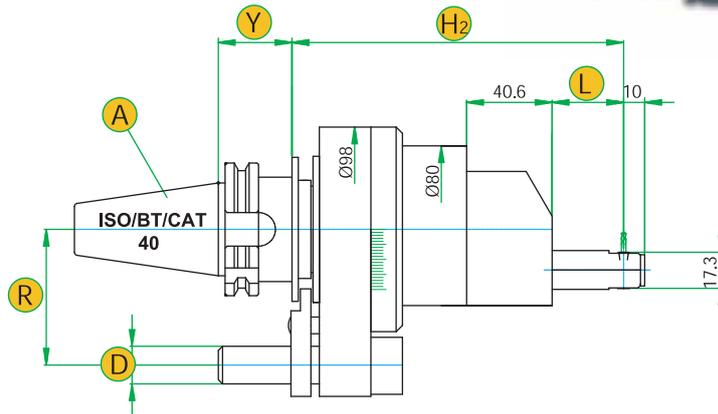
CH internet : www.pibomulti.com mail : info@pibomulti.com USA internet : www.pibomulti-na.com mail : info@pibomulti-na.com



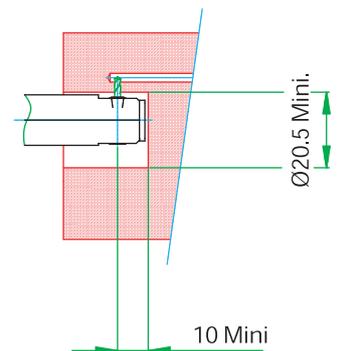
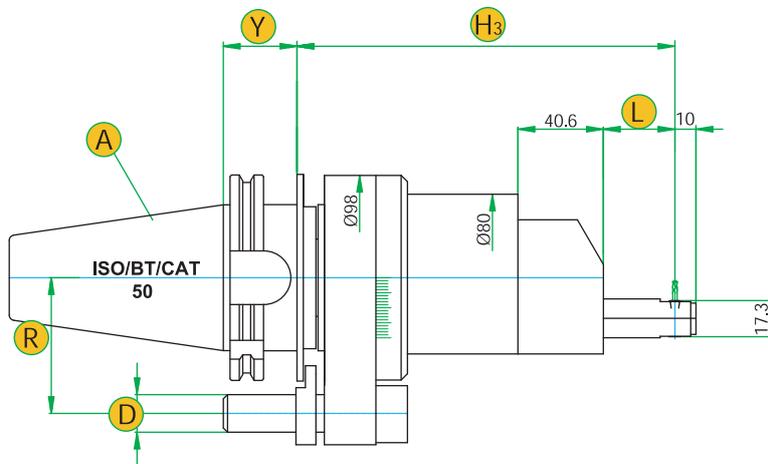
HSK 40 A  
HSK 50 A  
HSK 63 A



HSK 50 A  
HSK 63 A



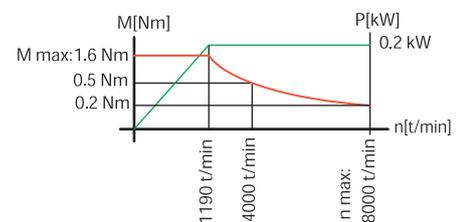
HSK 63 A  
HSK 80 A  
HSK 100 A

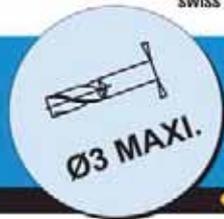


	L	H1	H2	H3
L1	34	139.1	157.6	179.6
L2	49.5	154.6	173.1	195.6
L3	65	170.1	188.6	210.6
L4	80	185.1	203.6	225.6

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BROCHE SPINDEL SPINDLE	kW	Nm		
8000 t/min u/min rpm	0.2 kW	1.6 Nm	1 à 2,5	≈ 3 à 4 kg

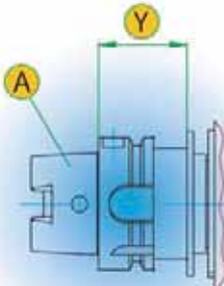




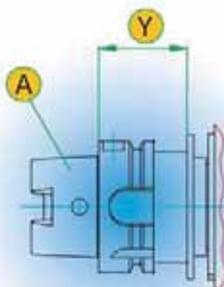
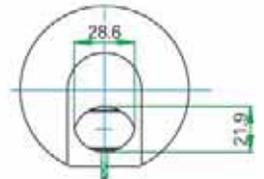
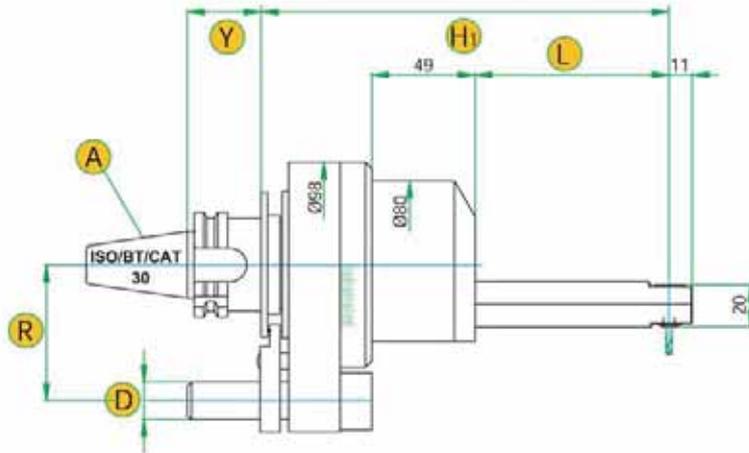
# CDP 03 L1/L2/L3/L...

6'000 rpm

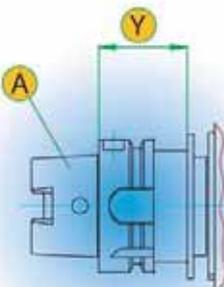
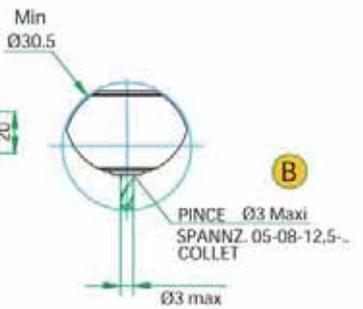
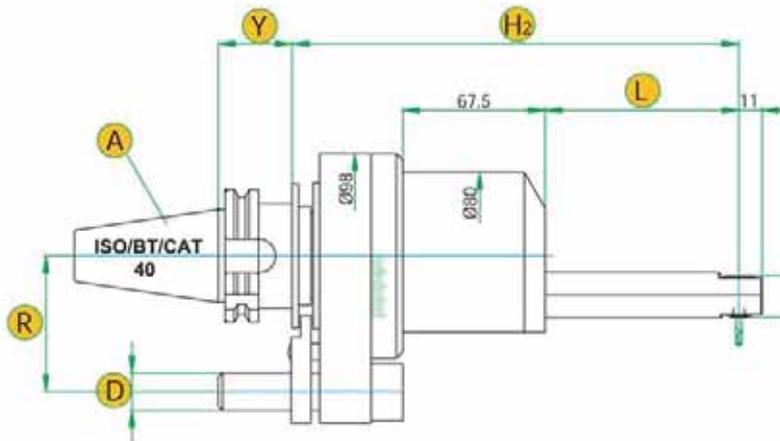
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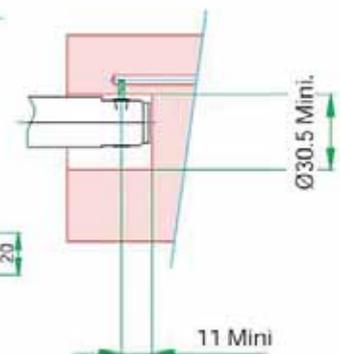
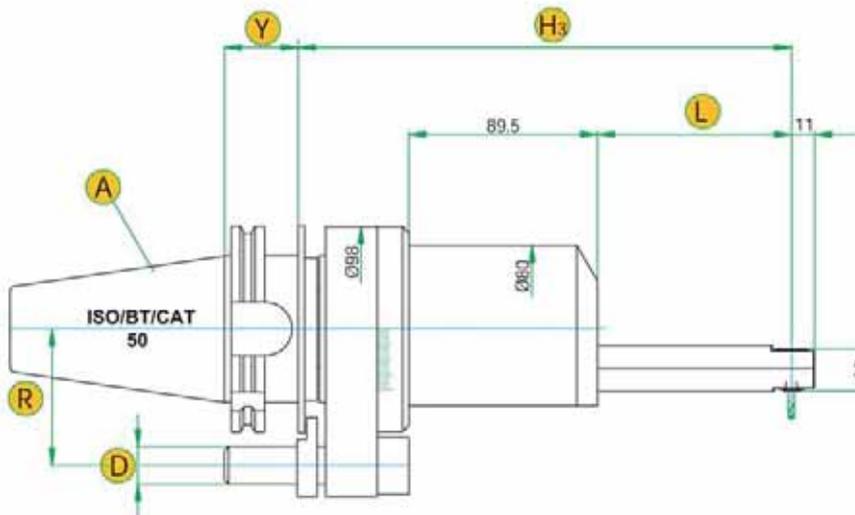
HSK 40 A  
HSK 50 A  
HSK 63 A



HSK 50 A  
HSK 63 A



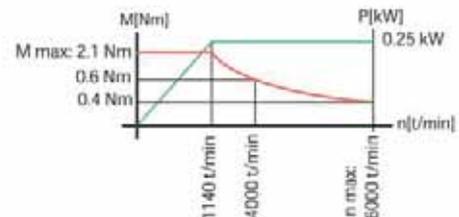
HSK 63 A  
HSK 80 A  
HSK 100 A

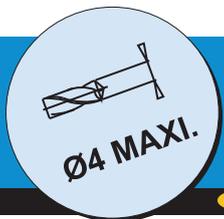


	L	H1	H2	H3
L1	50	151.5	170	192
L2	71	172.5	191	213
L3	79.5	181	199.5	221.5
L4	92	193.5	212	234
L5	112	214.5	233	255
L6	134	235.5	254	276

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BROCHE SPINDEL SPINDLE	kW	Nm		kg
6000 t/min ultrasm rpm	0.25 kW	2.1 Nm	1 à 3	~ 3 à 4 kg

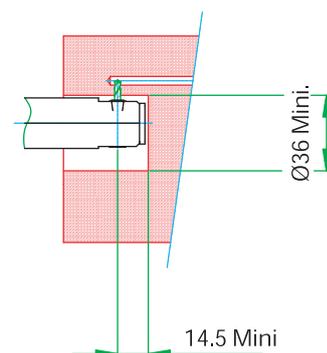
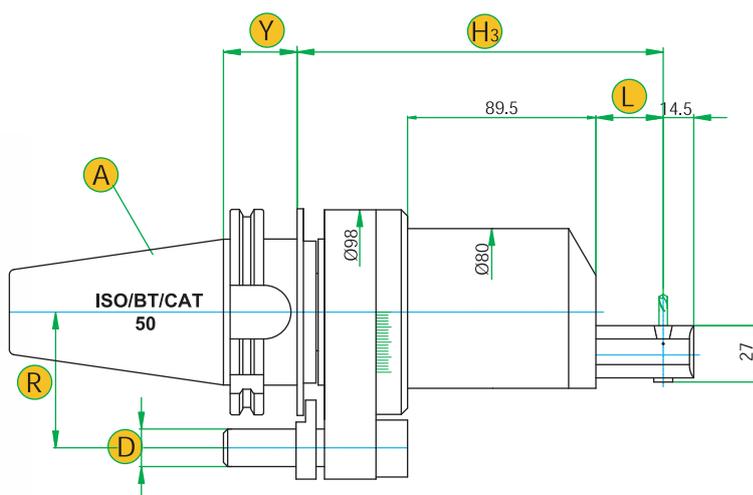
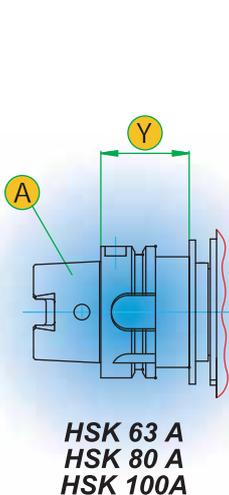
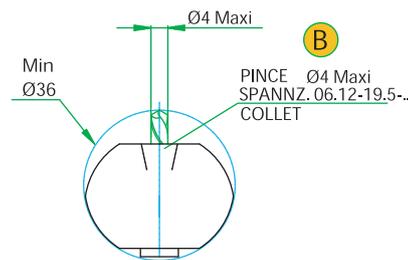
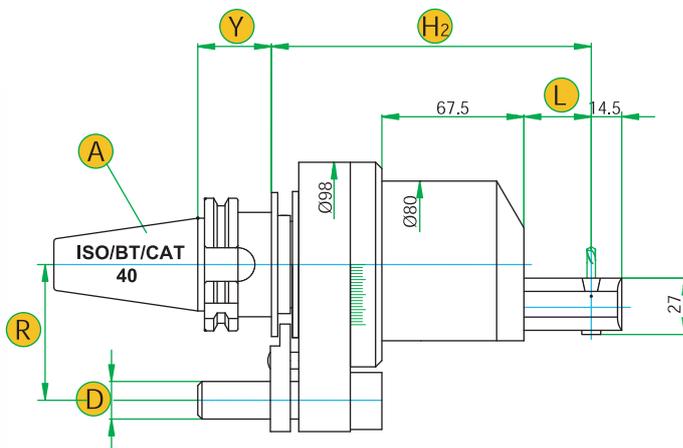
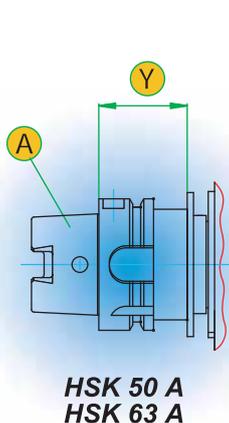
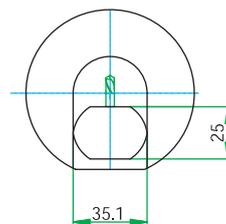
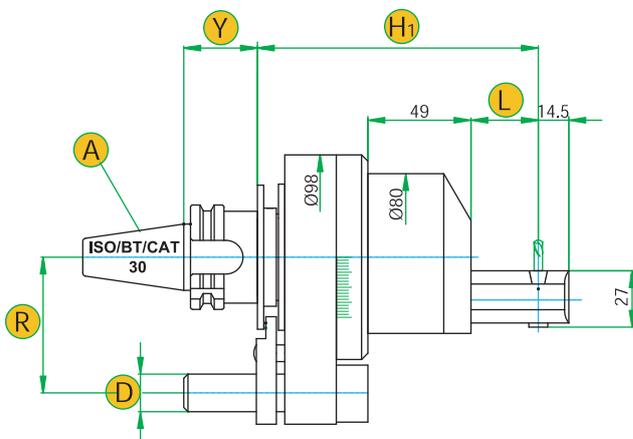
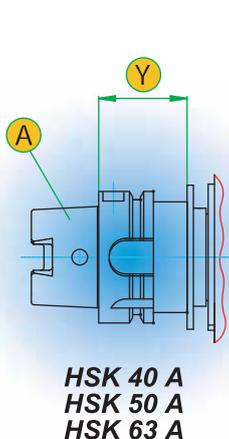




# CDP 04 L1/L2/L3/L...

8'000 rpm

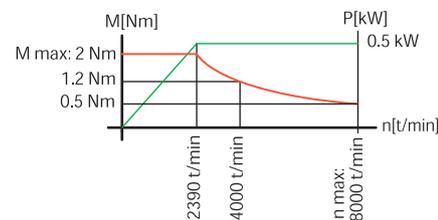
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	L	H1	H2	H3
<b>L1</b>	32	133.5	152	174
<b>L2</b>	56	157.5	176	198
<b>L3</b>	80	181.5	200	222
<b>L4</b>	104	205.5	224	246
<b>L6</b>	152	253.5	272	294

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 BROCHE SPINDEL SPINDLE	<b>kW</b>	<b>Nm</b>		
8000 $\frac{t}{min}$ u/min rpm	0.5 kW	2.0 Nm	1 à 3	≈ 3.5 à 4.5 kg

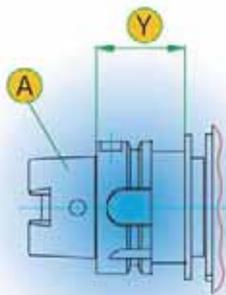




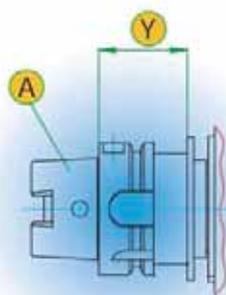
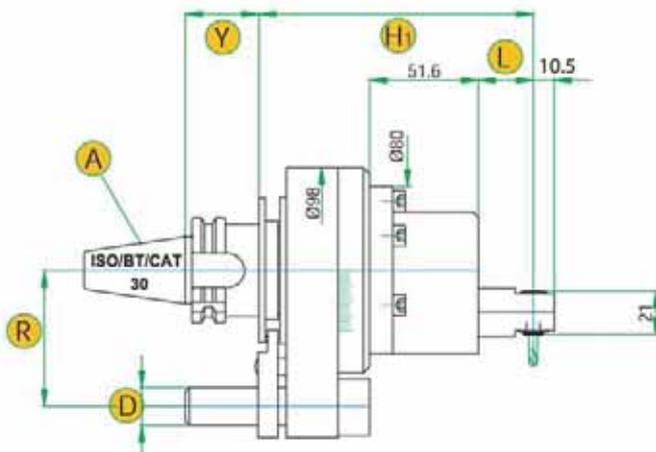
# CDP 041 L1/L2/L3/L...

10'000 rpm

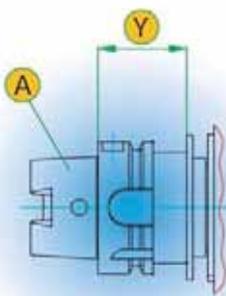
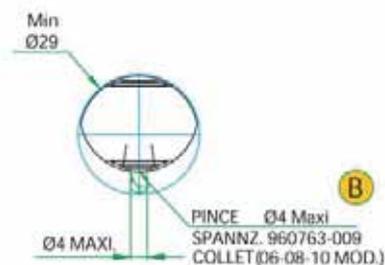
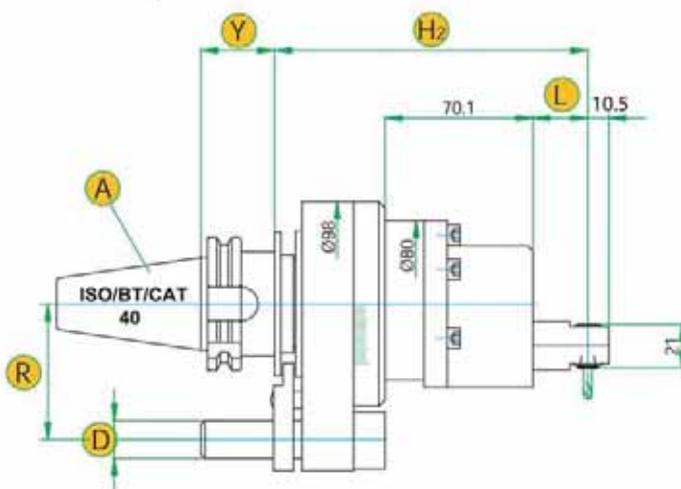
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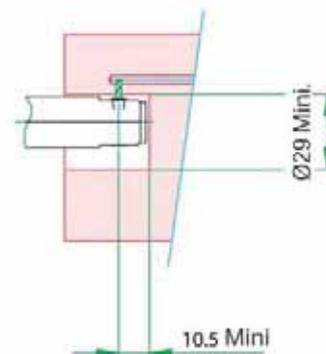
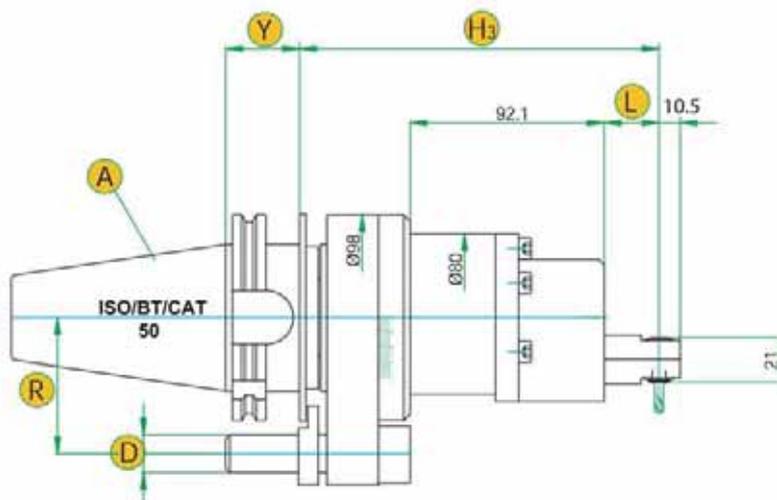
HSK 40 A  
HSK 50 A  
HSK 63 A



HSK 50 A  
HSK 63 A



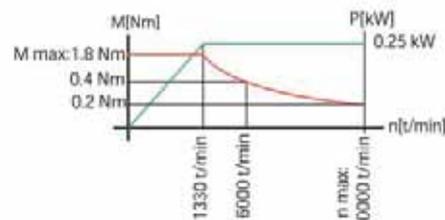
HSK 63 A  
HSK 80 A  
HSK 100 A



	L	H1	H2	H3
L1	26	130.1	148.6	170.6
L2	50	154.1	172.6	194.6
L3	74	178.1	196.6	218.6
L4	96.5	200.6	219.1	241.1

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BROCHE SPINDEL SPINDLE	kW	Nm		
	10000 U/min U/min rpm	0.25 kW	1.8 Nm	1 à 2.5 ~ 3.5 à 4.5 kg

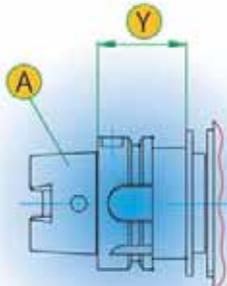




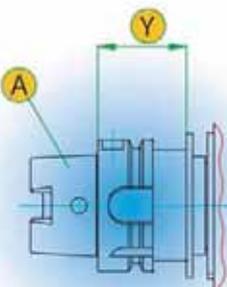
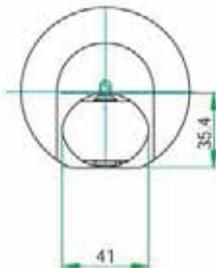
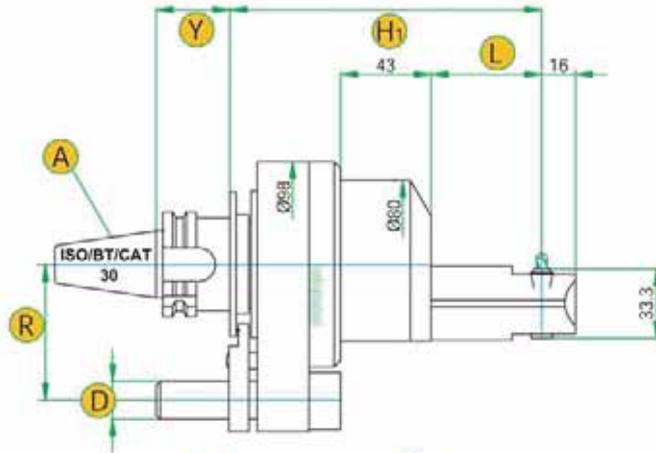
# CDP 05 L1/L2/L3/L...

5'400 rpm

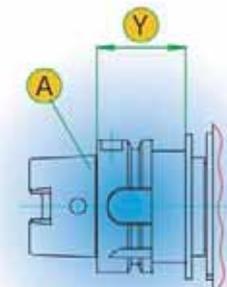
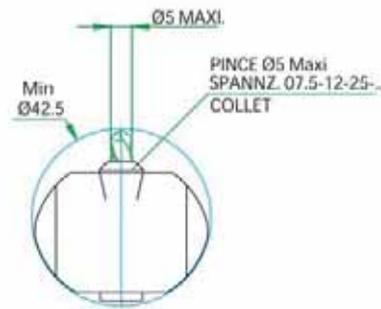
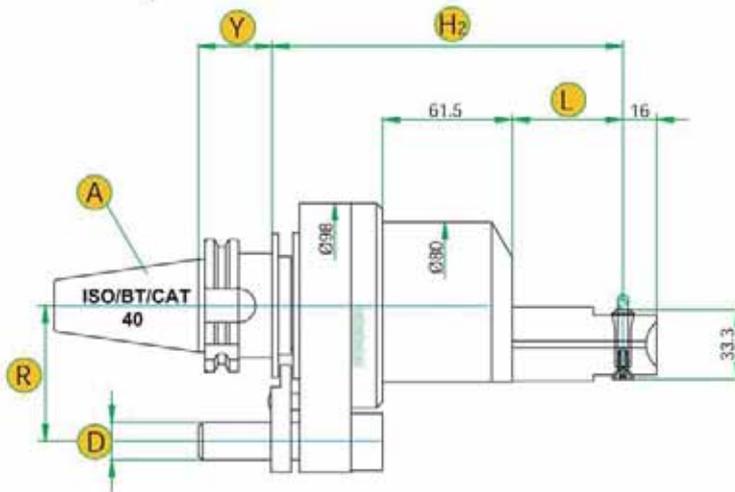
Internet : www.pibomulti.com mail : info@pibomulti.com USA Internet : www.pibomulti-na.com mail : info@pibomulti-na.com



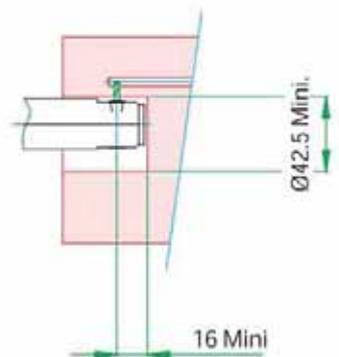
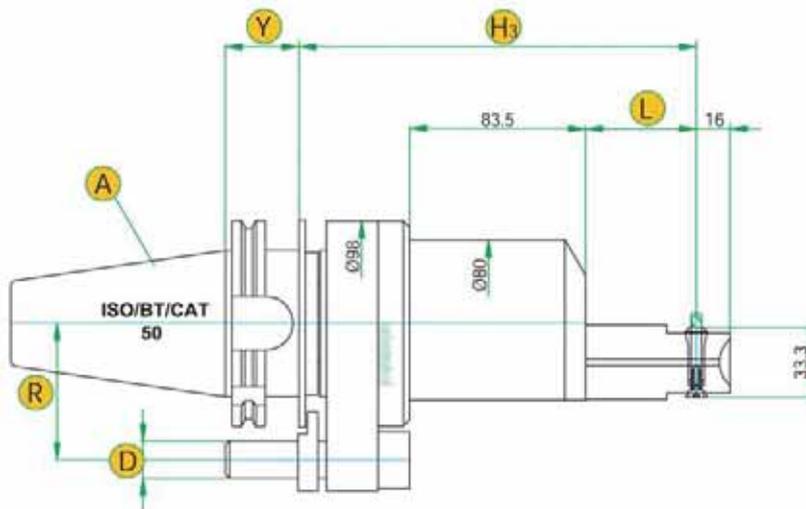
HSK 40 A  
HSK 50 A  
HSK 63 A



HSK 50 A  
HSK 63 A



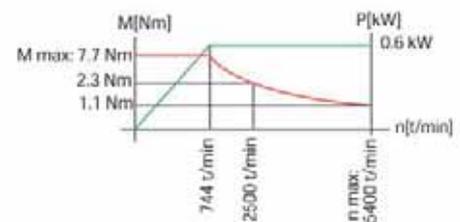
HSK 63 A  
HSK 80 A  
HSK 100 A

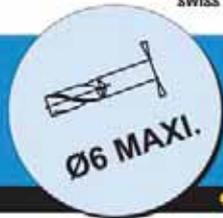


	L	H1	H2	H3
L1	52.5	148	166.5	188.5
L2	82.5	178	196.5	218.5
L3	112.5	208	226.5	248.5
L4	142.5	238	256.5	278.5
L5	172	267.5	286	308

voir page / siehe Seite / see page 39-40

 BROCHE SPINDEL SPINDLE	kW	Nm		
	5400 $\frac{1}{min}$ u/min rpm	0.6 kW	7.7 Nm	1 à 1.6 ~ 4 à 7 kg

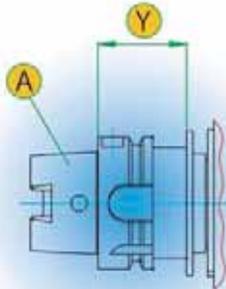




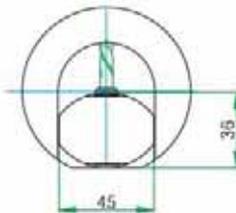
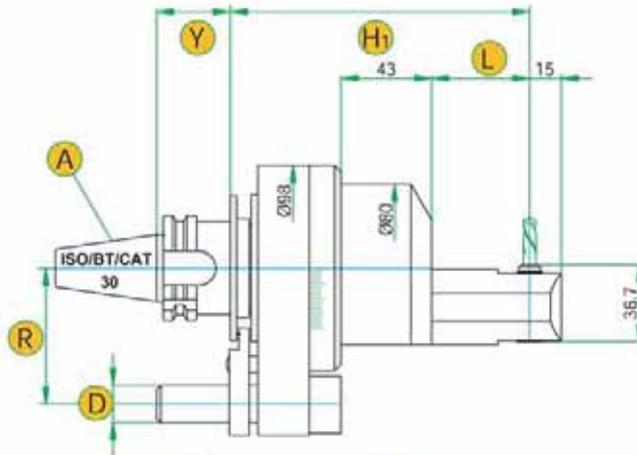
# CDP 06 L1/L2/L3/L...

8'000 rpm

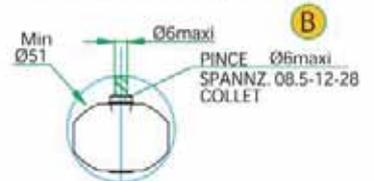
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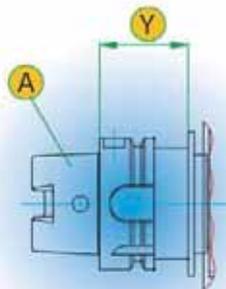
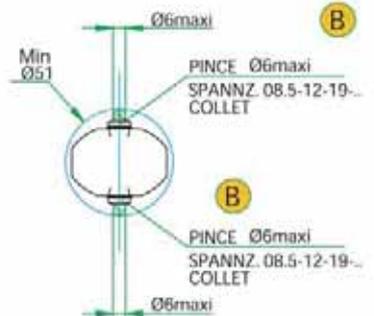
HSK 40 A  
HSK 50 A  
HSK 63 A



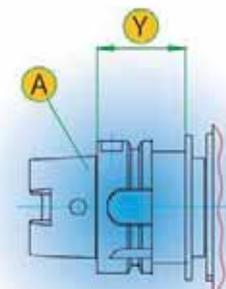
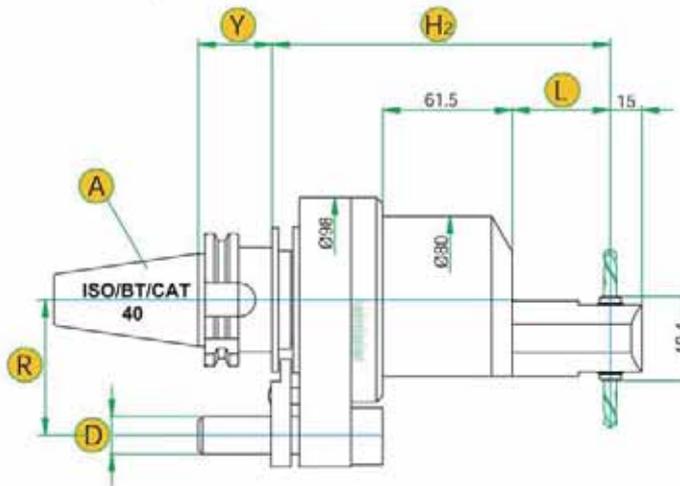
BROCHE 1 SORTIE  
SPINDEL 1 AUSGANG  
SPINDLE 1 OUTPUT



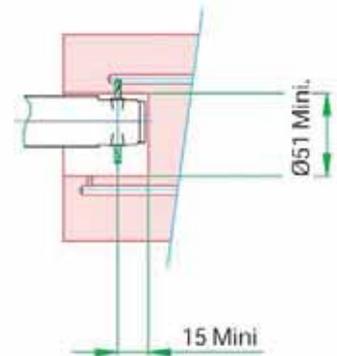
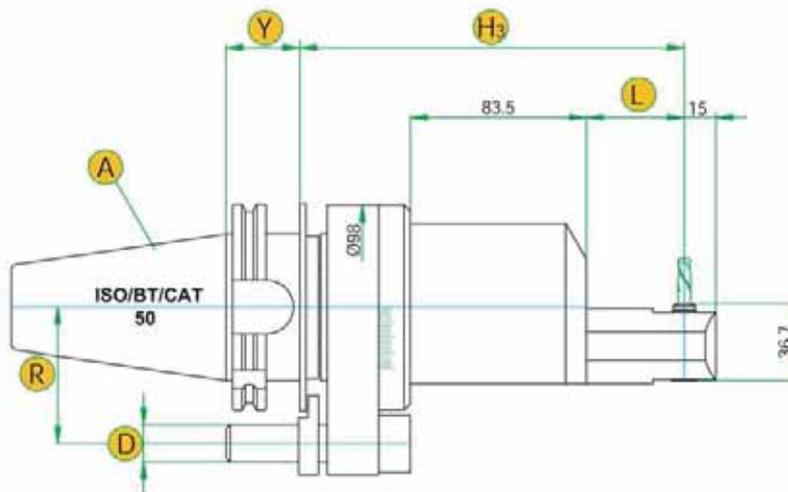
BROCHE 2 SORTIES  
SPINDEL 2 AUSGÄNGE  
SPINDLE 2 OUTPUTS



HSK 50 A  
HSK 63 A



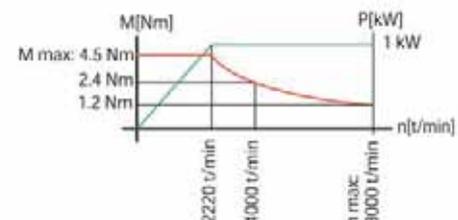
HSK 63 A  
HSK 80 A  
HSK 100 A



	L	H1	H2	H3
L1	46.5	142	160.5	182.5
L2	74.5	170	188.5	210.5
L3	102.5	198	216.5	238.5

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BROCHE SPINDEL SPINDLE	kW	Nm		
	1.0 kW	4.5 Nm	1 à 2.5	> 4 à 7 kg
8000	t/min u/min rpm			

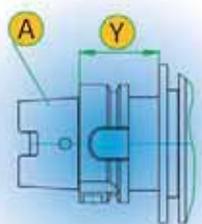
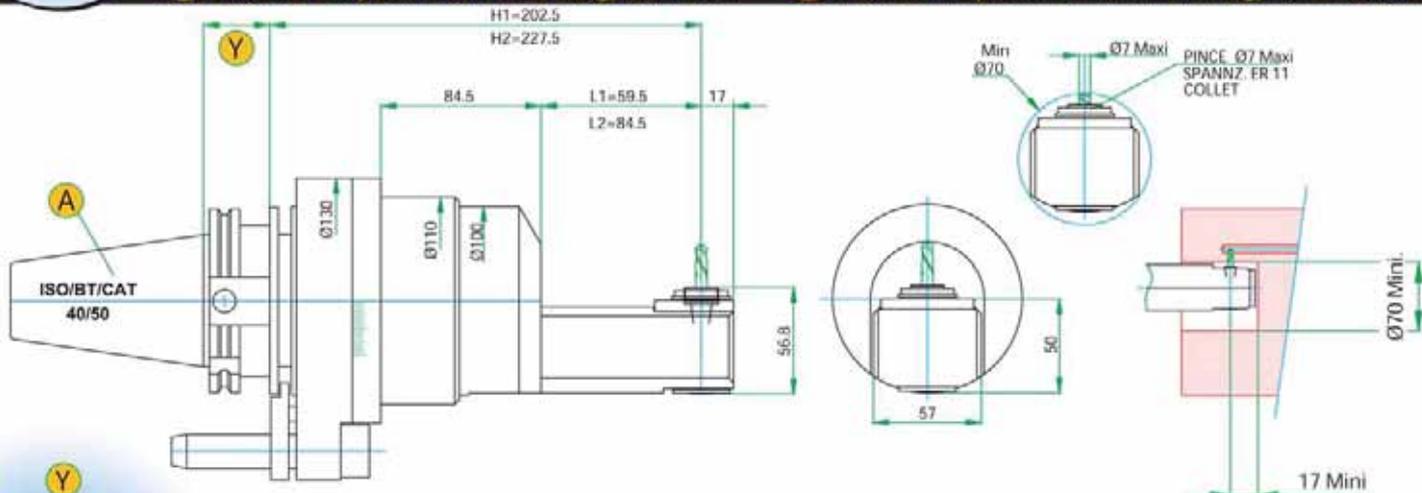




# CDP 07 L1/L2/L...

6'000 rpm

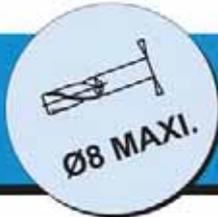
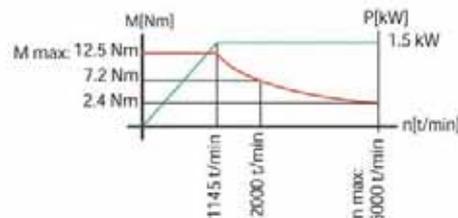
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HSK 63/80/100

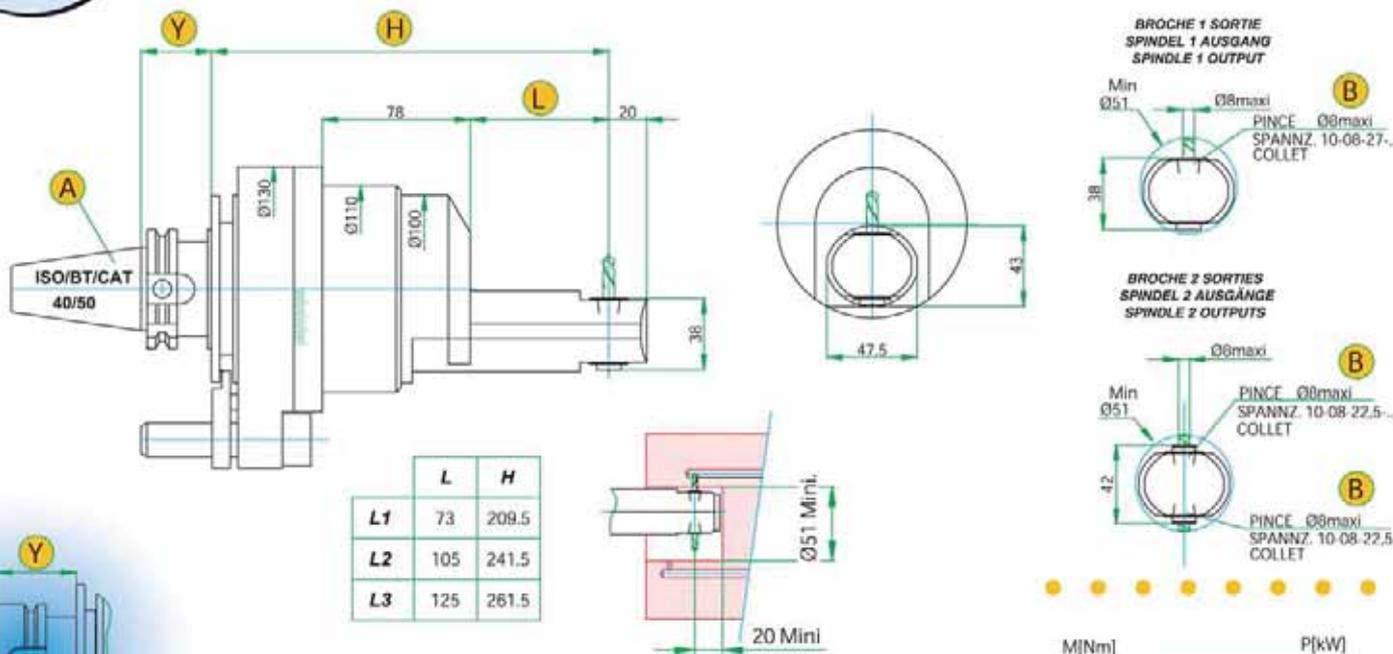
voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
6000 t/min u/min rpm	1.5 kW	12.5 Nm	1 à 1.5	8 à 12 kg

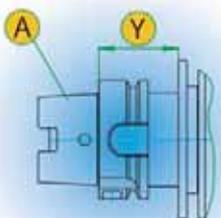


# CDP 08 L1/L2/L3/L...

6'000 rpm



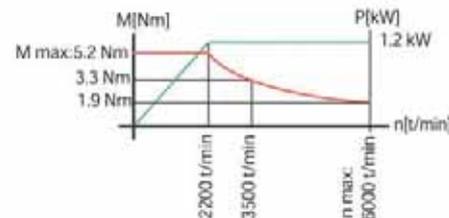
	L	H
L1	73	209.5
L2	105	241.5
L3	125	261.5

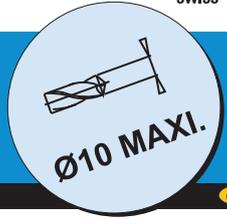


HSK 63/80/100

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
6000 t/min u/min rpm	1.2 kW	5.2 Nm	1 à 1.5	7 à 11 kg

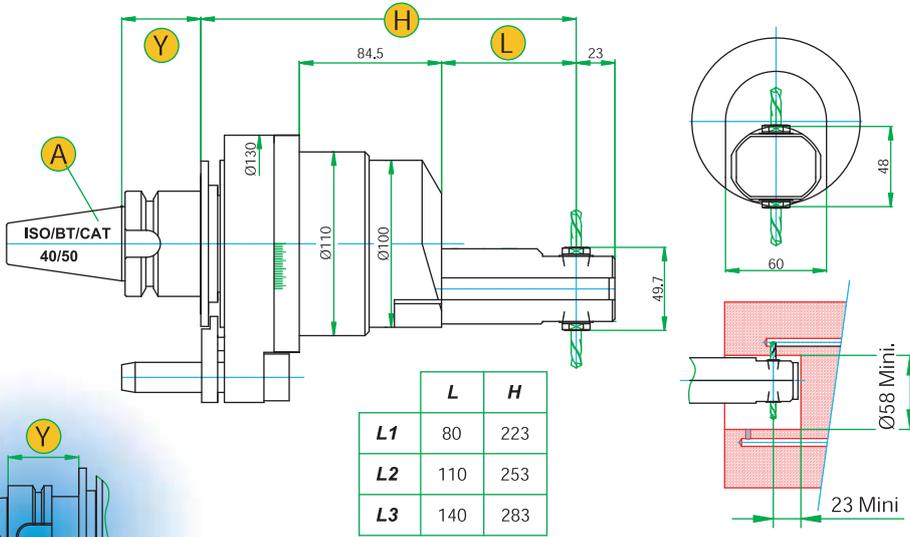




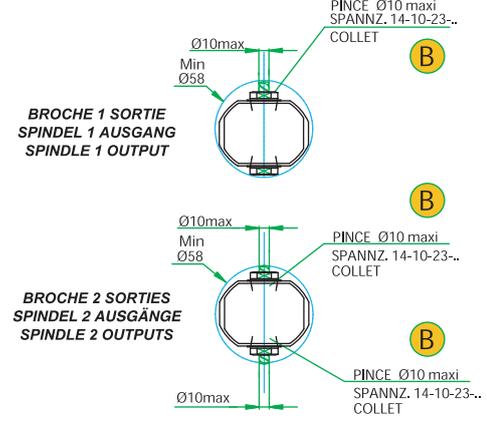
# CDP 10 L1/L2/L3/L...

4'500 rpm

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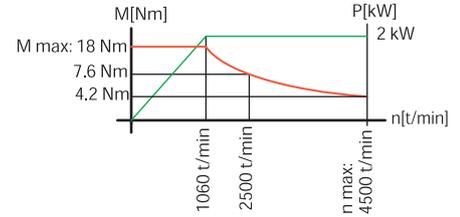


	L	H
L1	80	223
L2	110	253
L3	140	283

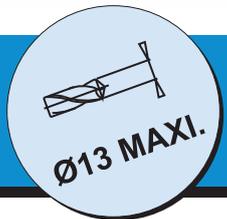


voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
4500 t/min u/min rpm	2.0 kW	18 Nm	1 à 1.5	≈ 12 à 15 kg

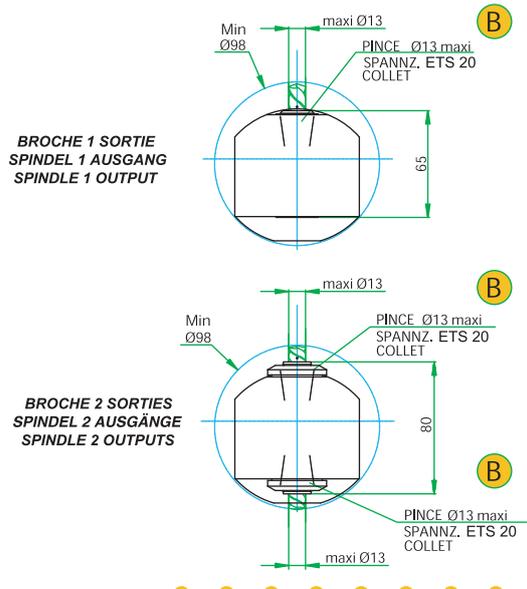
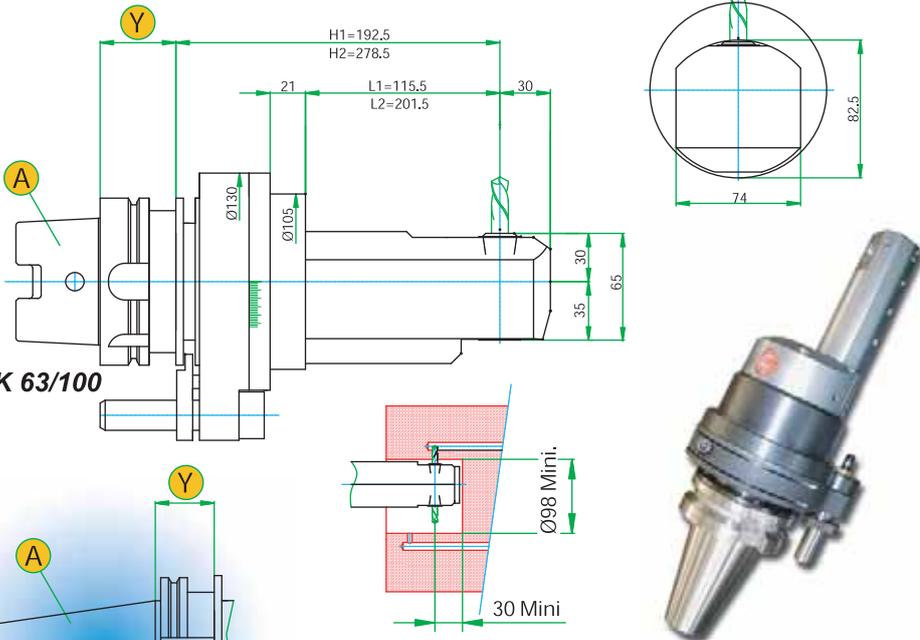


HSK 63/80/100



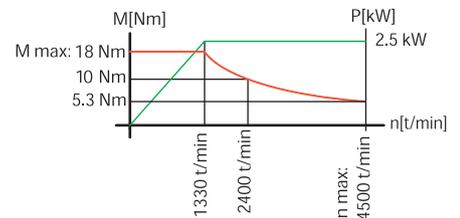
# CDP 13 L1/L2/L...

4'500 rpm



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BROCHE SPINDEL SPINDLE	kW	Nm		kg
4500 t/min u/min rpm	2.5 kW	18 Nm	1 à 2	≈ 7 à 12 kg



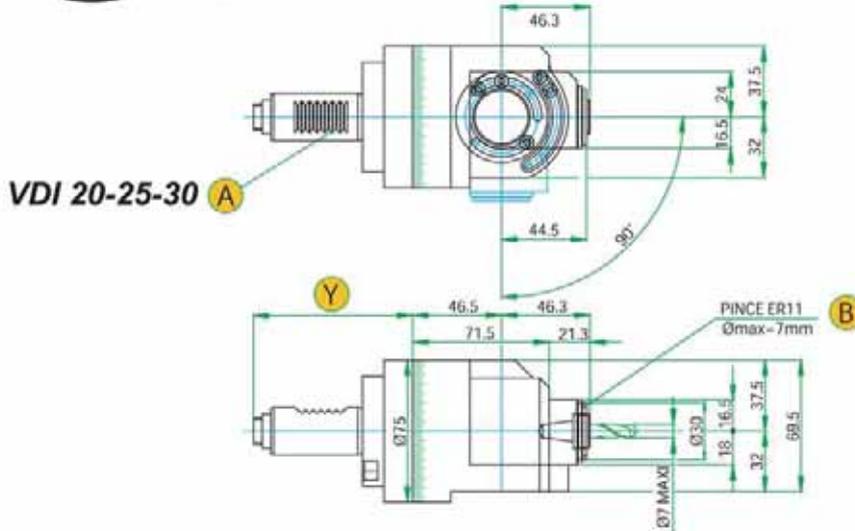


**TETE POUR TOUR**  
**KOPF FÜR DREHMASCHINE**  
**HEAD FOR TURNING MACHINE**

**TTAR 07**

**10'000 rpm**

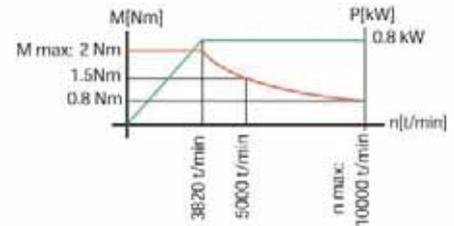
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Voir / siehe / see  
CTAR 07

voir page / siehe Seite / see page 39-40

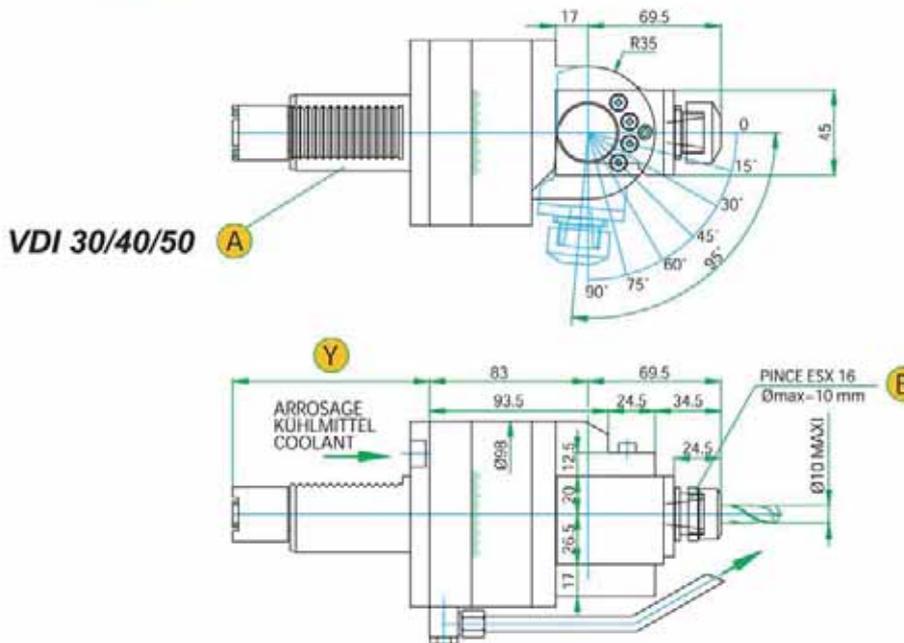
BROCHE SPINDEL SPINDLE	kW	Nm		kg
10000 U/min rpm	0.8 kW	2.0 Nm	1 à 3.2	≈ 3 kg



**TETE POUR TOUR**  
**KOPF FÜR DREHMASCHINE**  
**HEAD FOR TURNING MACHINE**

**TTAR 10**

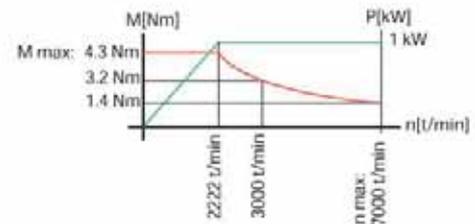
**7'000 rpm**

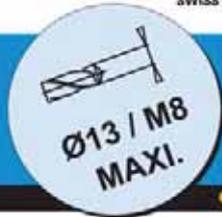


Voir / siehe / see  
CTAR 10

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
7000 U/min rpm	1.0 kW	4.3 Nm	1 à 2	≈ 7 kg





**TETE POUR TOUR**  
**KOPF FUR DREHMASCHINE**  
**HEAD FOR TURNING MACHINE**

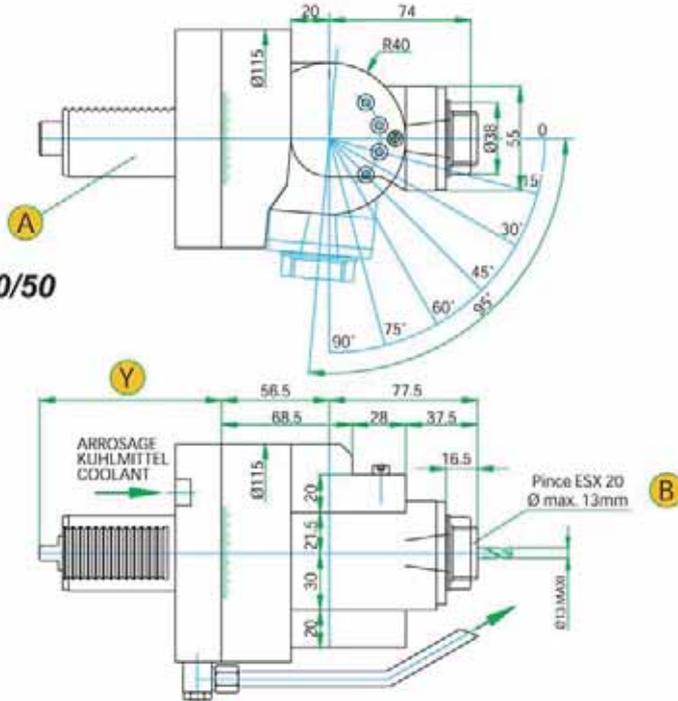
**TTAR 13**

**5'000 rpm**

SPECIAL : 6 000 rpm

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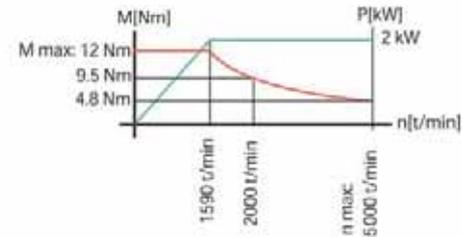


VDI 30/40/50

voir page / siehe Seite / see page 39-40

Voir / siehe / see  
CTAR 13

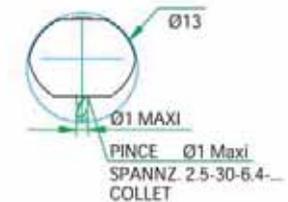
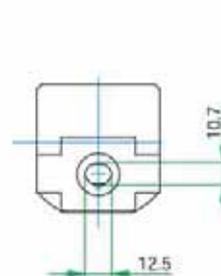
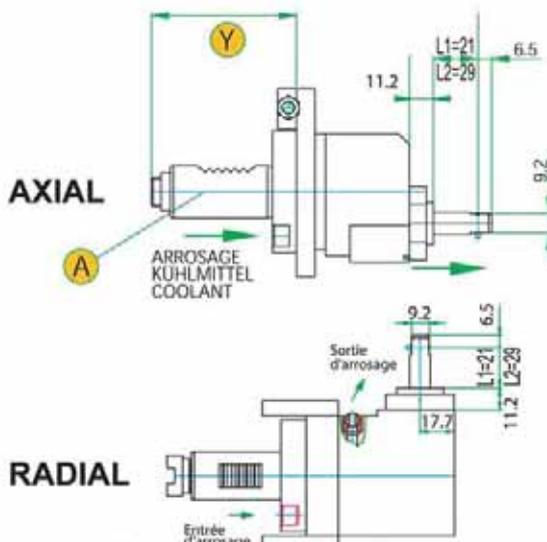
BROCHE SPINDEL SPINDLE	kW	Nm		
5000 1/min u/min rpm	2.0 kW	12 Nm	1 à 1.6	~ 11 kg



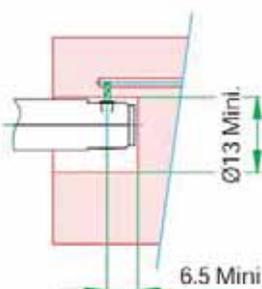
**TETE POUR TOUR**  
**KOPF FUR DREHMASCHINE**  
**HEAD FOR TURNING MACHINE**

**TDC 03 L1/L2**

**7'500 rpm**

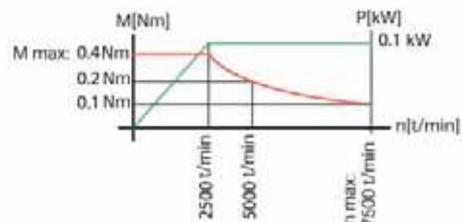


VDI 25



voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
7500 1/min u/min rpm	0.1 kW	0.4 Nm	1 à 3.75	~ 4 kg



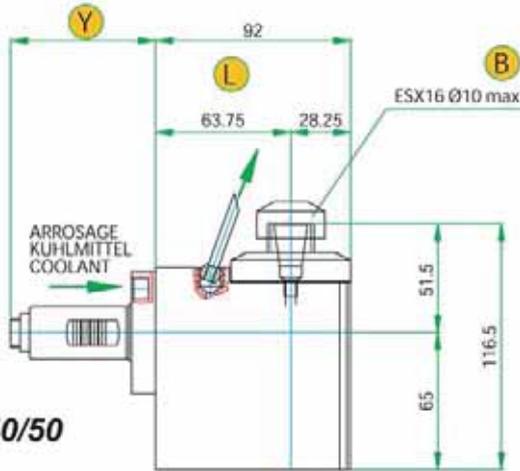


TETE POUR TOUR  
KOPF FÜR DREHMASCHINE  
HEAD FOR TURNING MACHINE

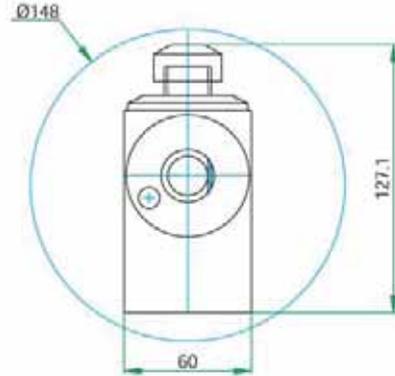
TTE 10X5

18'000 rpm

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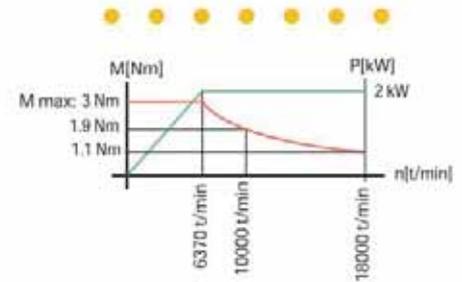


VDI 25/30/40/50



voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
18000 t/min u/min rpm	2.0 kW	3.0 Nm	1 à 5	4 à 6 kg

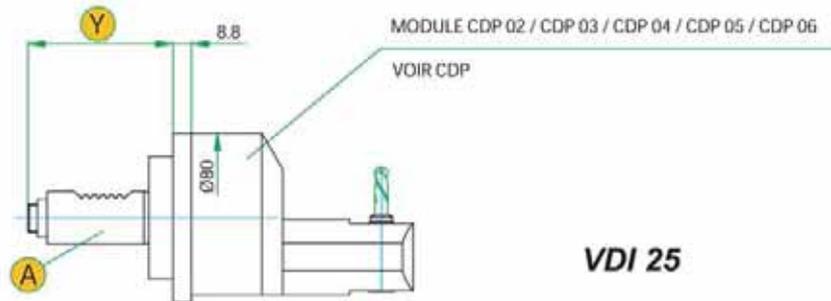


TETE POUR TOUR  
 KOPF FÜR DREHMASCHINE  
 HEAD FOR TURNING MACHINE

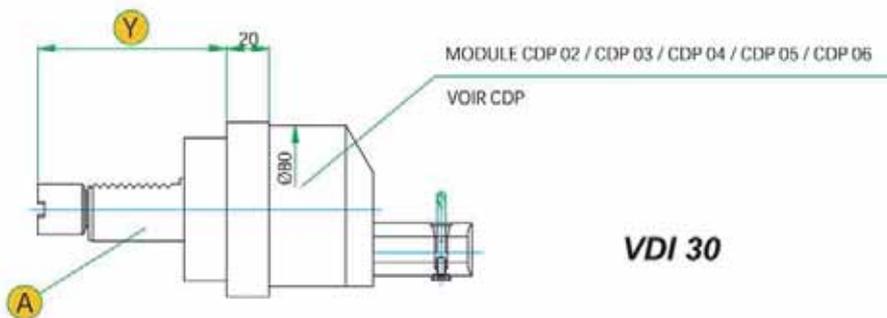
# TDP 02/03/04/05/06

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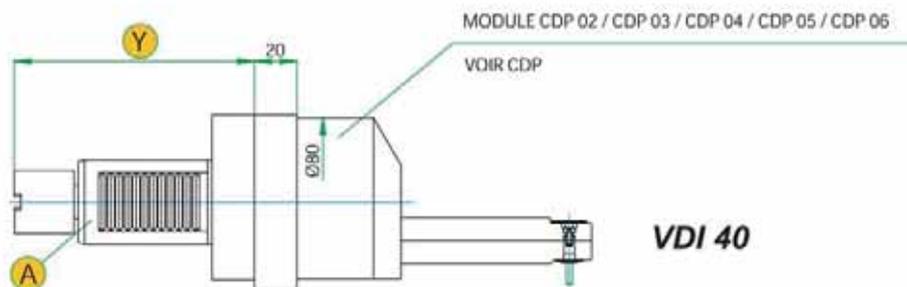
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VDI 25



VDI 30

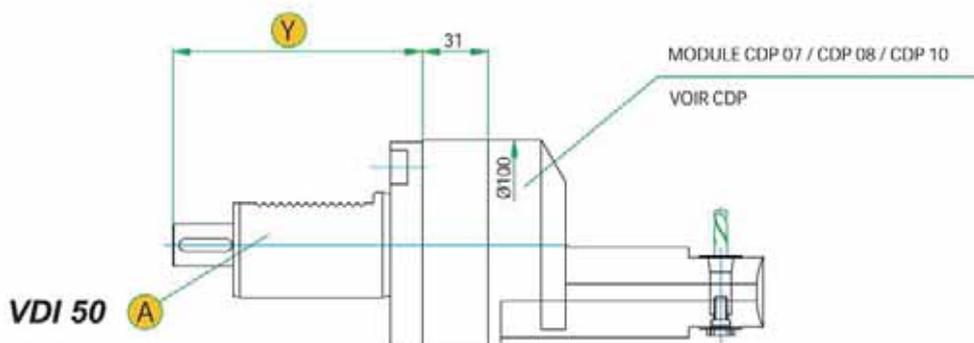


VDI 40

● voir page / siehe Seite / see page 39-40

TETE POUR TOUR  
 KOPF FÜR DREHMASCHINE  
 HEAD FOR TURNING MACHINE

# TDP 07/08/10



VDI 50

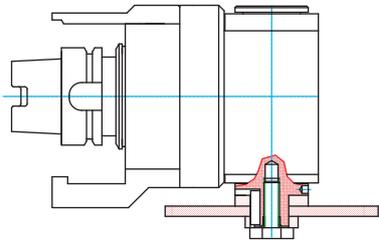
● voir page / siehe Seite / see page 39-40

# PROGRAMME - PROGRAMM - PROGRAM CHIRON

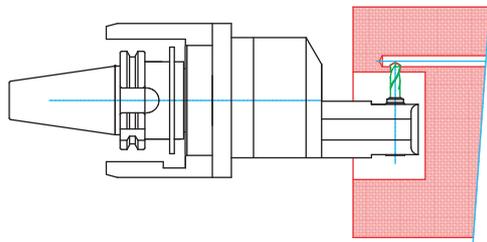
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## POUR - FÜR - FOR CHIRON

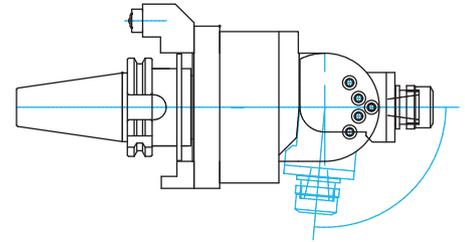
FZ 08 / FZ 15 / FZ 18 / DZ 18 / FZ 12 / DZ 12 / FZ 22 / DZ 22 / FZ 28 / DZ 28



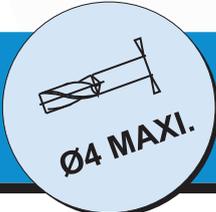
TETE DE SCIAGE  
SÄGEKOPF  
SAWING HEAD



TETES PERCE FRAISAGE TARAUDAGE  
KÖPFE ZUM BOHREN, FRÄSEN, GEWINDESCHNEIDEN  
HEADS FOR DRILLING, MILLING AND TAPPING

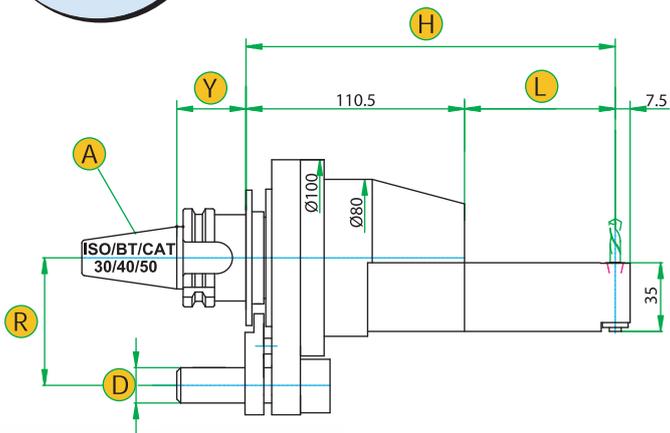


TETES ANGULAIRES REGLABLES  
EINSTELLBARE WINKEKÖPFE  
ADJUSTABLE ANGULAR HEADS  
SUR DEMANDE / AUF ANFRAGE / ON REQUEST

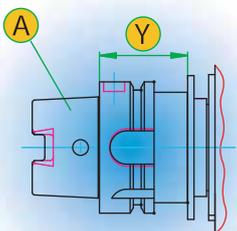
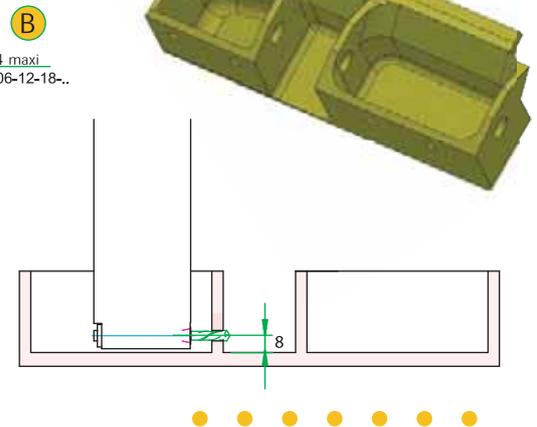


# PROGRAMME - PROGRAMM - PROGRAM AEROSPACE CDP 042 L1/L2/L...

6'000 rpm



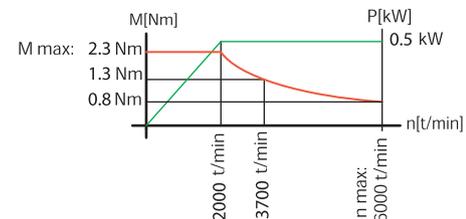
	L	H
L1	65	175.5
L2	76.25	186.75



**HSK**  
40/50/63/80/100

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
6000 t/min u/min rpm	0.5 kW	2.3Nm	1 à 3	≈ 3,5 à 4,5 kg



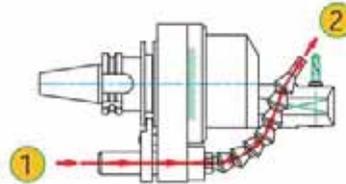
# ARROSAGE - KÜHLMITTEL - COOLANT

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 USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)
**1** ARRIVEE D'ARROSAGE KÜHLMITTEL EINGANG COOLANT INPUT

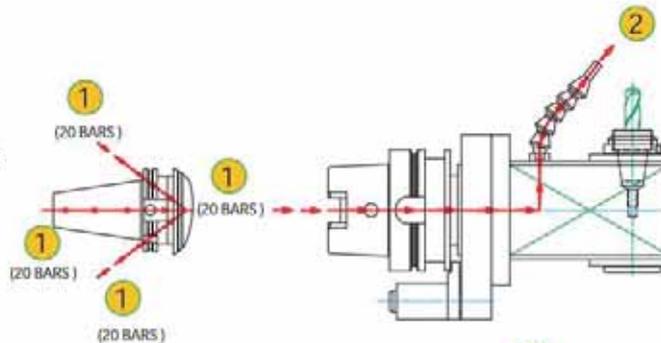
**2** SORTIE D'ARROSAGE KÜHLMITTEL AUSGANG COOLING OUTPUT

Arrosage par l'indexion  
 Kühlung durch die Indexierung  
 Coolant through locating



**POUR / FÜR / FOR :**  
 TOUS LES MODELES  
 ALLE MODELLE  
 ALL THE MODELS

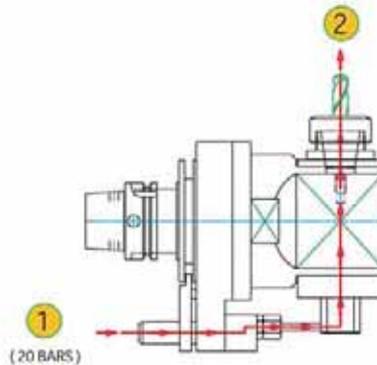
Entrée par le centre, sortie extérieur  
 Eingang durch Zentrum, Ausgang aussen  
 Inlet thru the centre, outlet outside



**POUR / FÜR / FOR :**  
 CEP 16  
 CEP 20 / CEC 30

... SUR DEMANDE  
 AUF ANFRAGE / ON REQUEST

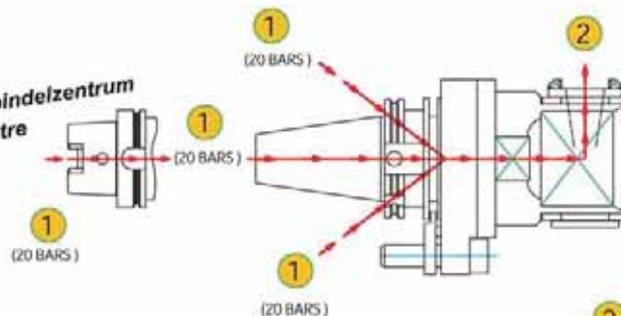
Entrée par l'indexion, sortie centre broche  
 Eingang über Indexierung, Ausgang durch Spindelzentrum  
 Inlet thru locating device, outlet thru spindle centre



**POUR / FÜR / FOR :**  
 CEP 20  
 CEP 16  
 CEP 13  
 CEP 10  
 CMP 10

... SUR DEMANDE  
 AUF ANFRAGE / ON REQUEST

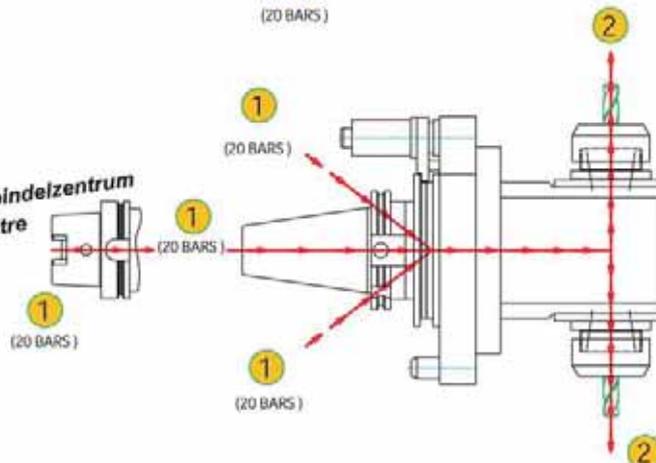
Entrée par le centre, sortie centre broche  
 Eingang durch Zentrum, Ausgang durch Spindelzentrum  
 Inlet thru the centre, outlet thru spindle centre



**POUR / FÜR / FOR :**  
 CEC 30  
 CEC 40

... SUR DEMANDE  
 AUF ANFRAGE / ON REQUEST

Entrée par le centre, sortie centre broche  
 Eingang durch Zentrum, Ausgang durch Spindelzentrum  
 Inlet thru the centre, outlet thru spindle centre



**POUR / FÜR / FOR :**  
 CEP 26

... SUR DEMANDE  
 AUF ANFRAGE / ON REQUEST

# TETES SPECIALES - SONDER-WINKELKOEPFE - SPECIAL HEADS

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Miniature - Miniatur - Small ...



2000 kg - 100 kW

... Ou de grande puissance  
oder mit grosser Leistung  
or big power



**OUTILS TOURNANTS - ANGETRIEBENE WERKZEUGE - DRIVEN TOOLS**

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Multiplicateurs de vitesse  
 Schnellaufspindeln  
 Spindle speeders

Jusqu'à / Bis / Up to  
 40'000 rpm



Spécifique pour meulage  
 Speziell zum Schleifen  
 Specific for grinding



Têtes universelles  
 Universalköpfe  
 Universal heads



Têtes angulaires pour tour  
 Winkelköpfe für Drehmaschine  
 Angular heads for turning machine



Têtes angulaires avec multiplicateur intégré  
 Winkelköpfe mit integrierten Schnellaufspindeln  
 Angular Heads with integrated Spindle speeders



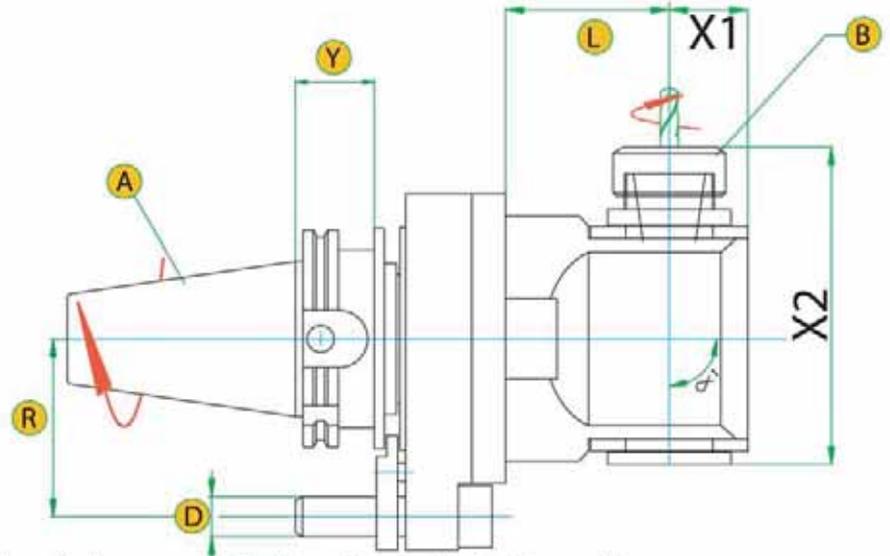
**INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN**  
**TECHNICAL INFORMATION A/B/D/L/R/Y**

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

**HORS STANDARD SUR DEMANDE**  
**NICHT STANDARD AUF ANFRAGE**  
**NOT STANDARD ON REQUEST**

X1 ET X2 A PRECISER IMPERATIVEMENT  
 X1 UND X2 UNBEDINGT ANGEBEN  
 X1 AND X2 TO BE INDICATED

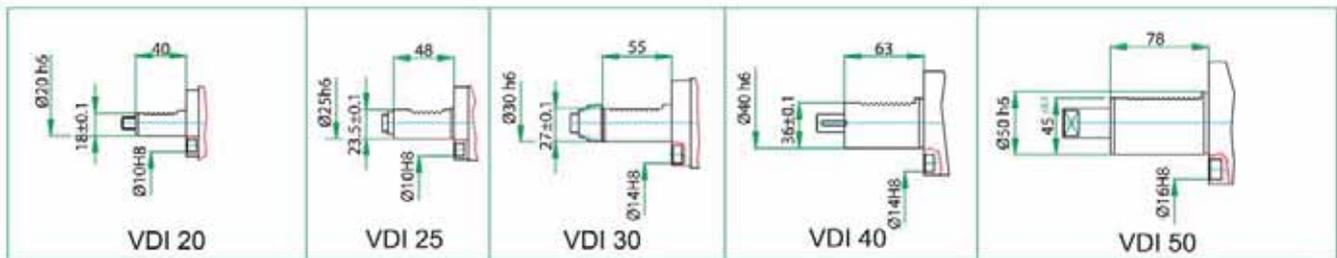
Y SELON TYPE DE CONE ET DE MACHINE  
 Y NACH STEIKEGEL UND MASCHINE TYPE  
 Y ACCORDING TO SHANK AND MACHINE TYPE



Toutes modifications réservées - Änderungen vorbehalten - Reserve the right to modify

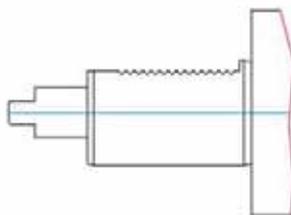
**VDI**

*Exemples de machines équipées / Beispiele von ausgerüsteten Maschinen*  
 Examples of equipped machines :  
 Traub - Index - Mori Seiki - Nakamura - Okuma - Gildemeister - Mazak  
 Cincinnati - Biglia - Citizen - Tornos - Star - Emag - Hardinge ...

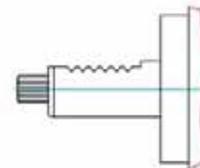


**ENTRAINEMENT PAR / ANTRIEB DURCH / DRIVEN BY :**

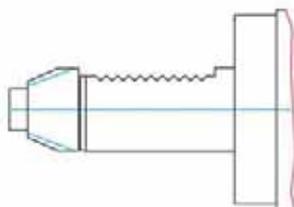
TOURNEVIS / SCHRAUBENZIEHER / SCREW DRIVER :  
 DIN 1809



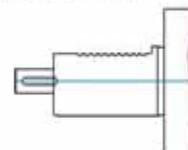
ARBRE CANNELE / KEILWELLE / GROOVED SHAFT :  
 DIN 5480 / DIN 5482



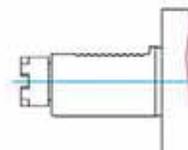
ROUE DENTEE CONIQUE / KONISCHES ZAHNRAD  
 BEVEL WHEEL GEAR :



ARBRE CLAVETE / WELLE MIT NUT  
 SHAFT WITH KEY :



CRABOT / KLAUE / DRIVING DOG :

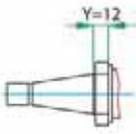
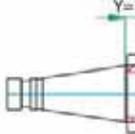
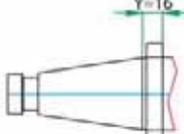
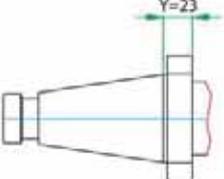


# INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN TECHNICAL INFORMATION

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**A / Y : TYPE DE CONE**  
**A / Y : STEILKEGEL**  
**A / Y : SHANK**

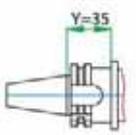
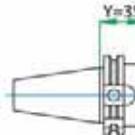
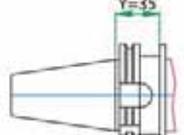
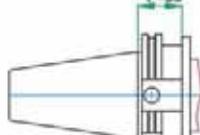
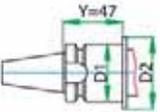
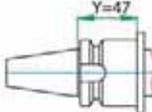
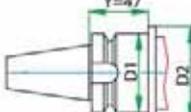
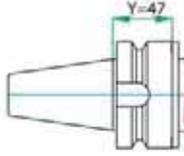
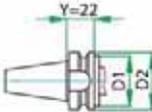
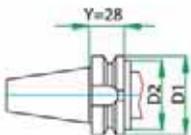
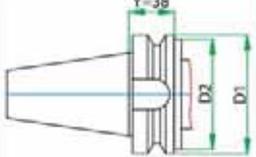
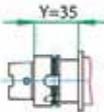
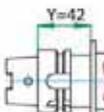
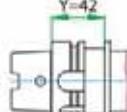
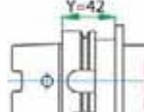
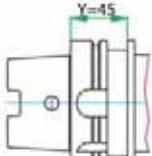
**CHANGEMENT MANUEL**  
**MANUELLER WECHSEL**  
**MANUAL TOOL CHANGE**

 ISO 30 DIN 2080	 ISO 40 DIN 2080	 ISO 45 DIN 2080	 ISO 50 DIN 2080 NMBT 50
--	--	---	---

**A / Y : TYPE DE CONE**  
**A / Y : STEILKEGEL**  
**A / Y : SHANK**

**CHANGEMENT AUTOMATIQUE**  
**AUTOMATISCHER WECHSEL**  
**AUTOMATIC TOOL CHANGE**

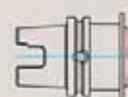
EXECUTION STANDARD / STANDARD AUSFÜHRUNG / STANDARD FABRICATION

 ISO 30 DIN 69871-A	 ISO 40 DIN 69871-A CAT 40 CAT 40 - 5/8" - 11 UNC	 ISO-45 DIN 69871-A CAT 45	 ISO 50 DIN 69871-A CAT 50 CAT 50 - 1" - 8 UNC
 BT 30 D2 > D1	 BT 35	 BT 40 D2 > D1	 BT 45
 BT 30 D2 < D1	 BT 40 D2 < D1	 BT 50 D2 < D1	
 HSK 40-A	 HSK 50-A	 HSK 63-A	 HSK 80-A
			 HSK 100-A

EXECUTION SPECIALE SUR DEMANDE  
 SPEZIALAUSFÜHRUNG AUF AUFRAGE  
 SPECIAL FABRICATION ON REQUEST



CAPTO



KM

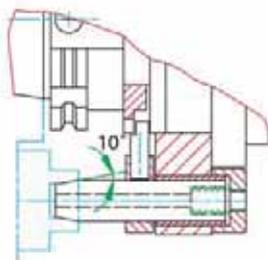
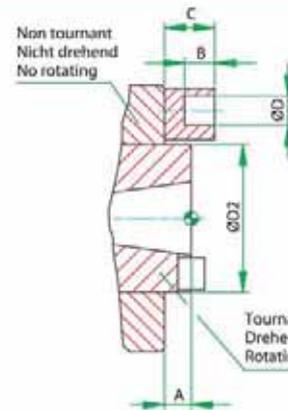
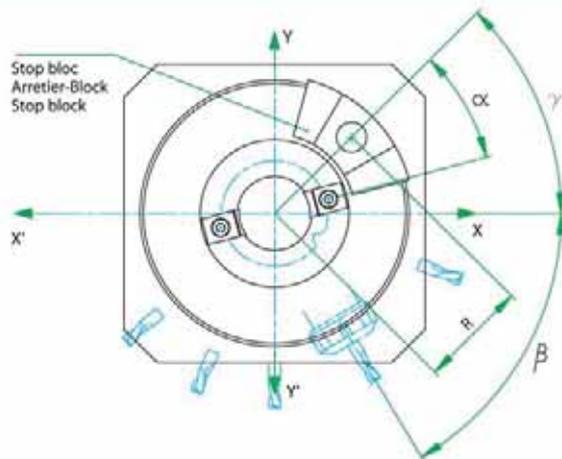
ETC ...

SUR DEMANDE  
 AUF ANFRAGE  
 ON REQUEST

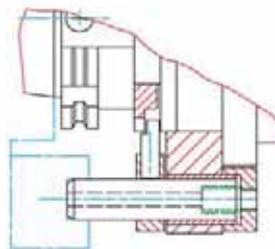
# INDEXION - INDEXIERUNG - LOCATION DEVICE

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

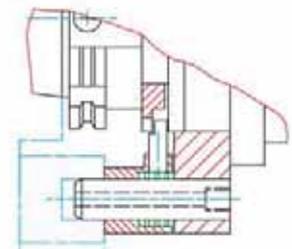
	Conditions requises pour une indexion	Benötigte Details für eine Indexierung	Location device requirements
ØD	Ø du doigt d'indexion	Ø des Positionierungsstiftes	Ø of the location pin
D2	Ø du nez de broche (partie tournante)	Ø der Spindelnase (drehend)	Ø of the spindle nose (rotating)
R	Rayon du doigt d'indexion	Radius des Positionierungsstiftes	Radius of the location pin
A	Distance - face d'appui	Distanz - Auflagefläche	Distance - Orientation location face
B	Extrémité du doigt d'indexion	Stirnseite des Positionierungsstiftes	Front of location pin
C	Epaisseur du stop bloc	Höhe des Arretier-Blocks	Thickness of stop block
α	Angle entre taquets et indexion	Winkel zw. Mitnehmer und Indexierung	Angle between drivers and location device
β	Angle entre axe X et sortie de broche	Winkel zw. X-Achse und Spindelausgang	Angle between X-axis and spindle output
γ	Angle entre l'axe X et le stop bloc	Winkel zw. X-Achse und Arretier-Block	Angle between X-axis and stop block



TYPE **A** Goupille cônica 10° mobile  
10° Kon. Beweglicher Stift  
10° Conical moving pin

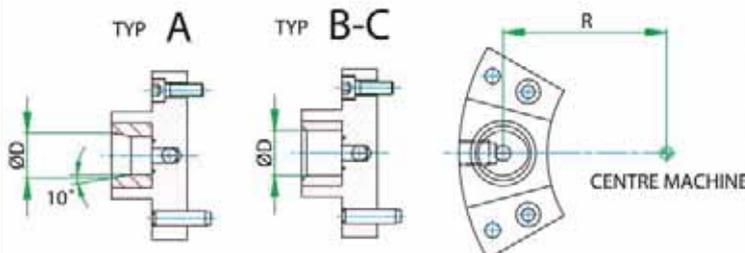


TYPE **B** Goupille cylindrique mobile  
Zyl. Beweglicher Stift  
Cylindrical moving pin



TYPE **C** Goupille cylindrique fixe  
Fester Stift, Zyl.  
Cylindrical fixed pin

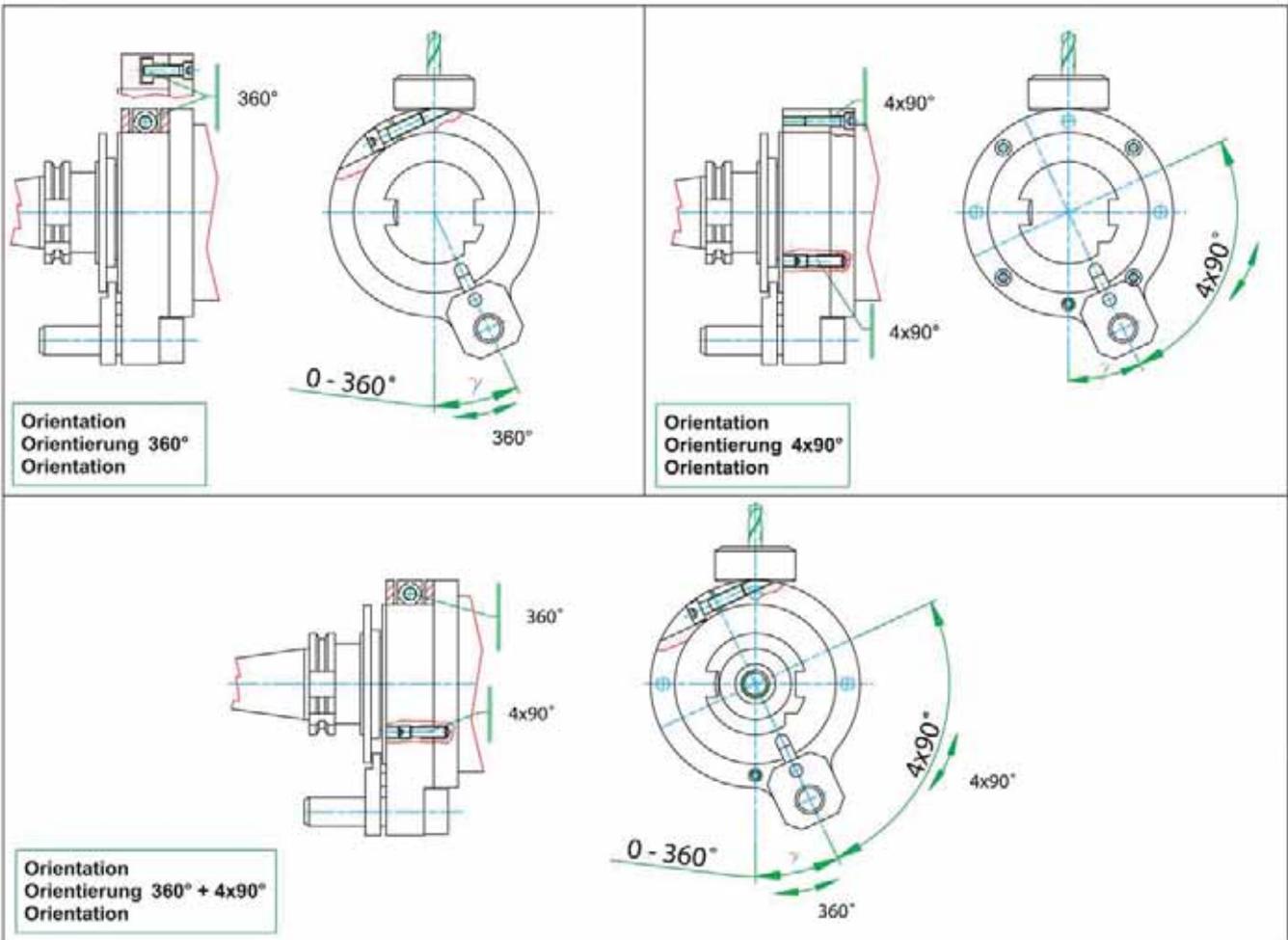
## STOP BLOC / ARRETIER-BLOCK / STOP BLOCK



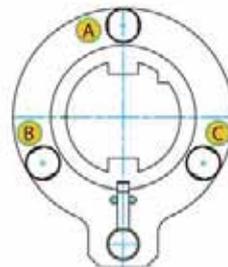
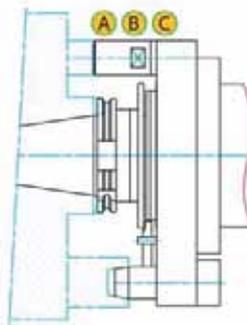
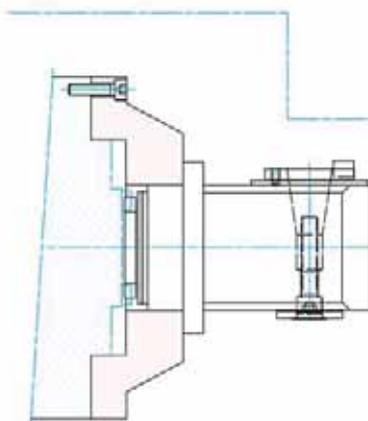
ISO HSK	R	ØD	REF.
30 / HSK 40-50	55	Ø 15 G6	076-05-206-20 (Typ C)
40 / HSK 63	65 ou 80	Ø 18 G6	076-05-206-10 (Typ C)
		Ø 18 G6	076-05-206-30 (Typ A) 076-05-206-10 (Typ B-C)
50 / HSK 80-100	80 ou 100 ou 110	Ø 18 G6 ou	076-05-206-30 (Typ A) 076-05-206-10 (Typ B-C)
		Ø 28	175-265-35-00 (Typ A)

# ORIENTATION - ORIENTIERUNG - ORIENTATION

 CH Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com)

 USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)


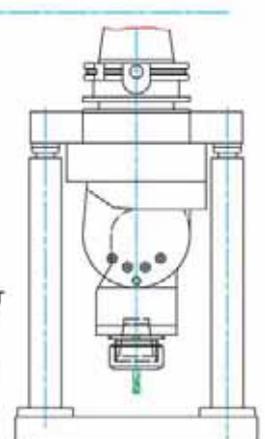
## TRANSMISSION DE GRANDE PUISSANCE ET RIGIDITE STABILITÄT UND UEBERTRAGUNG GROSSER KRÄFTE HIGH POWER TRANSMISSION AND RIGIDITY

 INDEXION AVEC APPUIS  
 INDEXIERUNG MIT ABSTUEZUNG  
 LOCATION DEVICE WITH SUPPORTS

 3 OU 4 APPUIS SELON LA MACHINE  
 3 ODER 4 AUFLAGEFLÄCHEN, JE NACH MASCHINE  
 3 OR 4 SUPPORTS RELATED TO THE MACHINE

 FLASQUE  
 FLANSCH  
 FLANGE

### PICK-UP STATION

 EN CAS DE PROBLEME DE POIDS  
 LA STATION PICK UP EST UNE BONNE  
 ALTERNATIVE AU CHANGEMENT  
 SEMI - AUTOMATIQUE

 A PICK-UP STATION IS A GOOD  
 ALTERNATIVE WHEN THE TOOL WEIGHT  
 OR SIZE EXCEEDS THE CAPABILITY OF  
 THE AUTOMATIC TOOL CHANGER

 IM FALLE VON GEWICHTSPROBLEMEN,  
 IST DIE PICK-UP - STATION EINE  
 GUTE ALTERNATIVE ZUM  
 HALBAUTOMATISCHEN WECHSEL


**SOMMAIRE - ZUSAMMENFASSUNG - SUMMARY**

Internet : [www.pibomulti.com](http://www.pibomulti.com) mail : [info@pibomulti.com](mailto:info@pibomulti.com) USA Internet : [www.pibomulti-na.com](http://www.pibomulti-na.com) mail : [info@pibomulti-na.com](mailto:info@pibomulti-na.com)

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Spindle speeders for machining centre	
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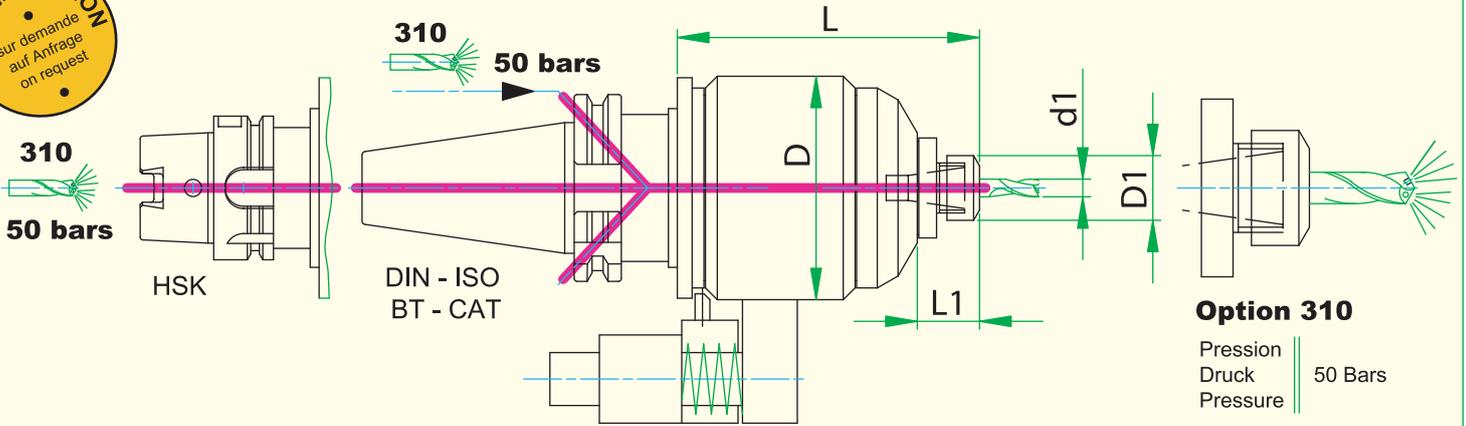
**FX 300****50'000 rpm**

**Multiplicateur de vitesse pour centre d'usinage  
Schnellaufspindeln für Bearbeitungszentren  
Spindle speeders for machining centre**

**50'000 rpm**

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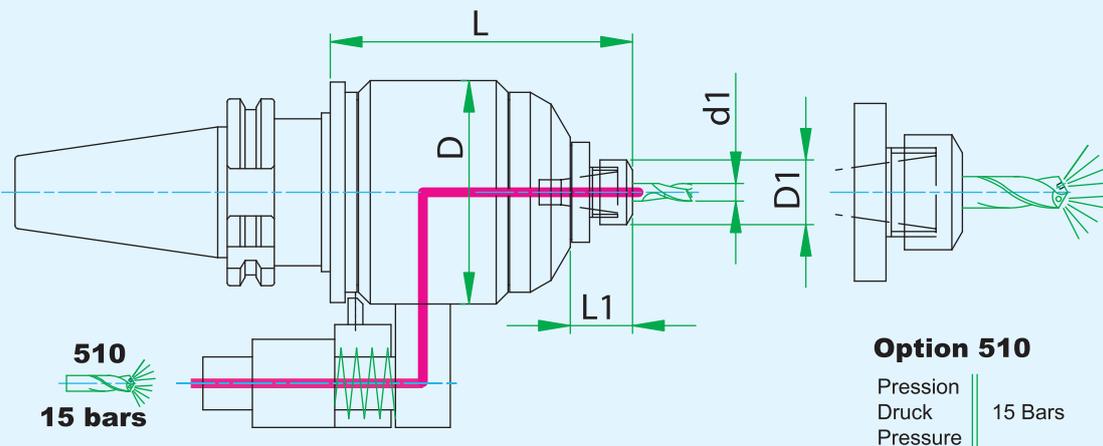
**DOCUMENTATION**  
sur demande  
auf Anfrage  
on request



Type	Caractéristiques / Angaben Features		n max	kW	Nm	Arrosage Kühlmittel Coolant n max	Pince Zange Collet	Dimensions					kg	DIN - ISO - BT - CAT					HSK										
	1+5	1+6						n	n max	d1	D	D1		L	L1	30	35	40	45	50	60	32	40	63	80	100			
X635	1+5	25'000	30'000	1.7	7	-	ER11	0.5 - 7	63	19	99	23	2	■	■	▲						■	■						
X766	1+6	25'000	30'000	2.8	8	25'000	ETS14	0.5 - 8	76	22	102	21	3.1	▲	▲	■	■												
X9810	1+10	36'000	40'000	2	5	36'000	ETS14	0.5 - 8	98	22	115	21	5	▲	▲	■	■												
X9810-50	1+10	44'000	50'000	2	5	44'000	ETS14	0.5 - 8	98	22	115	21	5	▲	▲	■	■												
X765	1+5	18'000	22'000	3.5	12	18'000	ER16	0.5 - 10	76	32	111	30	3.5	▲	▲	■	■												
X986	1+6	16'000	20'000	4.5	18	16'000	ER20	1 - 13	98	35	124	32	5.5			■	■												
X1055	1+5	14'000	17'000	6.4	29	13'000	ER25	1 - 16	105	42	137	35	6.5			■	■												
X1057	1+7	15'000	18'000	4	12	15'000	ER20	1 - 13	105	35	122	32	5.2			■	■												
X1205	1+5	12'000	15'000	7	34	12'000	ER32	2 - 20	120	50	141	38	10.5				■	■											
X1505	1+5	10'000	12'000	8	39	10'000	ER50	4 - 34	150	78	177	51	15				▲	■	■										
XM1506	1+6	10'000	12'000	8	24	-	Weldon 25	10 - 40	150	60	264	35	-				■	■											
X1905	1+5	8'000	10'000	10	130	-	OZ1838	10 - 40	190	-	225	-	29				■	■											

Données techniques voir page 47

**DOCUMENTATION**  
sur demande  
auf Anfrage  
on request



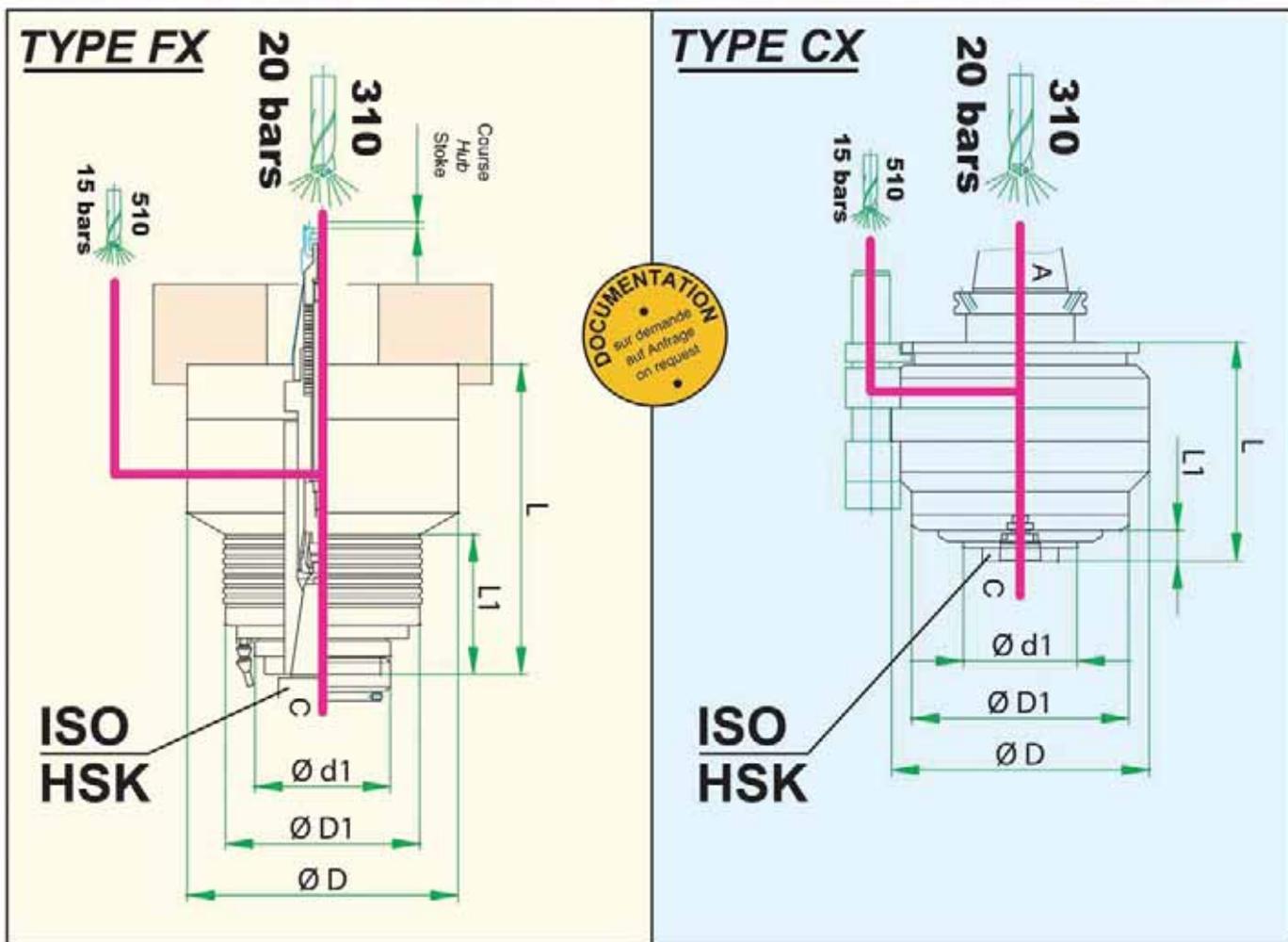
Type	Caractéristiques / Angaben Features		n max	kW	Nm	Arrosage Kühlmittel Coolant n max	Pince Zange Collet	Dimensions					kg	DIN - ISO - BT - CAT		
	1+5	1+6						n	n max	d1	D	D1		L	L1	40
076-5-510	1+5	16'000	18'000	3	5.6	ER16	0.5 - 10	76	32	116	28	3	■		■	
120-6-510	1+6	10'000	12'000	6	12	ER25	1 - 16	120	42	175	37	9	■	■	■	
150-6-510	1+6	8'000	11'000	8	20	OZ1837	5 - 32	150	78	237	51	20			■	

Données techniques voir page 47

Multiplicateur à grand rendement et de grande puissance  
Schnellaufspindeln für hohe Produktivität und grosser Leistung  
Speeders for high productivity and big power

**30 kW**

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Caractéristiques / Angaben Features						Dimensions						
Type	n	n max.	kW	Nm	C	d1	D	D1	L	L1	kg	
FX190-05	1+5	10'000	12'000	10	130	ISO30/HSK50	121	190	150	210	130	30
FX210-04	1+4	8'000	10'000	12	260	ISO40/HSK63	142	210	185	240	138	45
FX300-04	1+4	6'000	8'000	20	405	ISO50/HSK100	150	300	220	346	156	110
FX375-06	1+6	4'000	5'000	30	830	ISO50/HSK100	180	375	250	385	129	190

Données techniques voir page 47

■ : standard - Standard - standard ▲ : sur demande - auf Anfrage - on request

Caractéristiques / Angaben Features						Dimensions					A		
Type	n	n max.	kW	Nm	C	d1	D	D1	L	L1	kg	50	60
CX1905	1+5	8'000	10'000	10	190	ISO30/HSK50	121	190	180	230	60	■	■
CX2104	1+4	8'000	10'000	12	260	ISO40/HSK63	150	210	186	240	80	■	■
CX3504	1+4	4'000	5'000	30	1000	ISO50/HSK100	190	350	290	400	197	■	■

Données techniques voir page 47

### Option 310

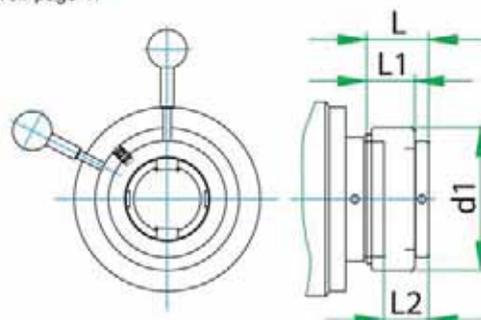
Pression / Druck / Pressure 20 bars  
Arrosage central avec entrée centrale.  
Innere Kühlmittelzufuhr mit Eintritt durch das Zentrum.  
Thru coolant with center input.

### Option 510

Pression / Druck / Pressure 15 bars  
Arrosage central avec entrée latérale.  
Innere Kühlmittelzufuhr mit seitlichem Eintritt.  
Thru coolant with side input.

### Ecrou de serrage rapide Pibomulti Schnellwechsellmutter Pibomulti Pibomulti quick change nut

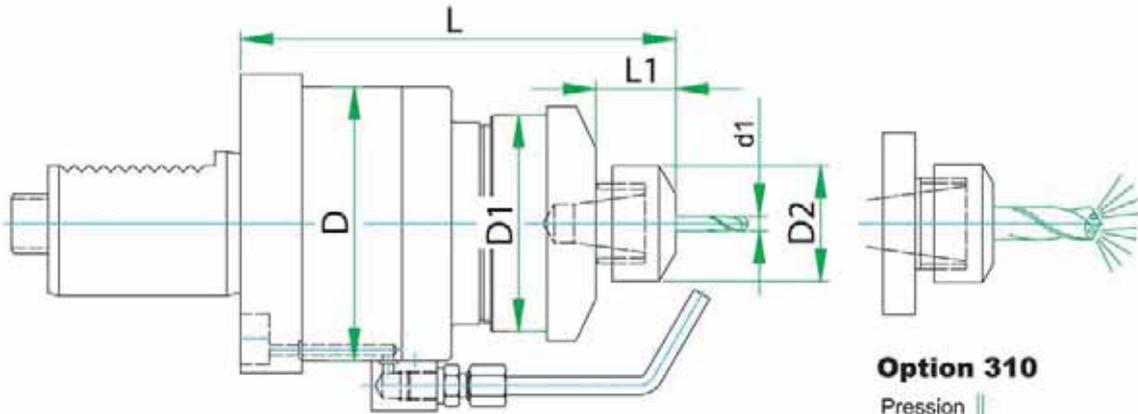
Type	Cône outils	d1	L	L1	L2
SER4001-000	ISO 40 DIN 2080	110	43.5	33	28.5
SER4002-000	ISO 40 DIN 69871-A ou CAT 40	110	43.5	33	28.5
SER4004-000	BT 40	110	47	37	32
SER5001-000	ISO 50 DIN 2080	150	48	37.5	30
SER5002-000	ISO 50 DIN 69871-A ou CAT 50	150	48	37.5	30
SER5004-000	BT 50	150	56.5	48	38.5



## Multiplicateur de vitesse pour tour Schnellaufspindeln für Drehmaschinen Spindle speeders for turning machines

### 40'000 rpm

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### Option 310

Pression |  
Druck | 20 Bars  
Pressure |

■ :standard - Standard - standard    ▲ :sur demande - auf Anfrage - on request

Type	Caractéristiques / Angaben Features		kW	Nm	Pince Zange Collet	d1	Dimensions				adaptation VDI					Entraînement selon machine Antrieb gem. Maschine Drive as per machine	
	n	n max.					D	D1	D2	L	L1	20	25	30	40		50
X635T	1+5	25'000	30'000	2	7	ESX12	0.5 - 7	63	48	19	98	17	■	■	■	▲	
X9810T	1+10	36'000	40'000	2	5	ETS14	0.5 - 8	98	51	22	120	15.5				■	▲
X765T	1+5	18'000	22'000	4	12	ESX16	0.5 - 10	76	60	32	120	30			■	■	
X1055T	1+5	8'000	12'000	6.4	29	ESX25	1 - 16	105	90	-	120	10.5					■
X1205T	1+5	12'000	15'000	7	34	ESX32	2 - 20	120	92	50	175	38				▲	■

Sur demande, exécution flasqué et/ou avec arrosage par le centre.  
Ausführung mit Flansch und/oder mit Innenkühlung auf Anfrage.  
Upon request, flange execution and/or with coolant thru.

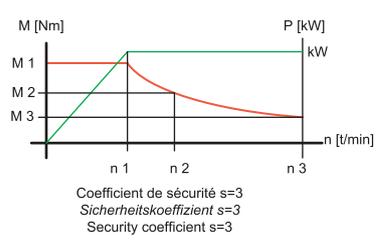


**INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN**  
**TECHNICAL INFORMATION**

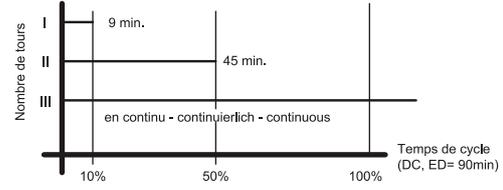
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Graphique de puissance-couple et " n " en continu  
 Drehmoment und Dauerlaufdiagramm  
 Power-torque and " n " in continuous diagram

Puissance et couple maxi  
 Leistung und Drehmoment max  
 Power and torque max



Temps d'utilisation en fonction de la vitesse  
 Einsatzdauer in Bezug zur max. Drehzahl  
 Using time in terms of speed



Type	Couple (Nm)			Nbr. de tours (t/min)			Puissance kW
	M1	M2	M3	n1	n2	n3	
X635	7	1.6	0.54	2'320	10'000	30'000	1.7
X766	8	2.7	0.9	3'340	10'000	30'000	2.8
X9810	5	1	0.5	3'800	20'000	40'000	2
X9810-50	5	1	0.4	3'800	20'000	50'000	2
X765	12	3.3	1.5	2'800	10'000	22'000	3.5
X986	18	4.3	2.1	3'390	10'000	20'000	4.5
X1055	29	6.1	3.6	2'100	10'000	17'000	6.4
X1057	12	3.8	2.1	3'180	10'000	18'000	4
X1205	34	6.7	4.4	2'000	10'000	15'000	7
X1505	39	15.3	6.3	2'000	5'000	12'000	8
XM1506	24	15.3	6.4	3'180	5'000	12'000	8
X1905	130	32	9.5	730	3'000	10'000	10
FX190-05 / CX1905	130	32	8	730	3'000	12'000	10
FX210-04 / CX2104	260	38	11.5	440	3'000	10'000	12
FX300-04	405	87	24	471	2'200	8'000	20
CX3504	1'000	280	125	300	1'000	2'300	30
FX375-06	830	130	57	345	2'200	5'000	30
X635T	7	1.9	0.6	2'700	10'000	30'000	2
X9810T	5	0.9	0.5	3'800	20'000	40'000	2
X765T	12	3.8	1.7	3'200	10'000	22'000	4
X1055T	29	7.7	5.1	2'100	8'000	12'000	6.4
X1205T	34	7.6	5	2'250	10'000	15'000	8

Type	Nbr. de tours (t/min)		
	I	II	III
X635	30'000	25'000	20'000
X766	30'000	25'000	20'000
X9810	40'000	36'000	28'800
X9810-50	50'000	44'000	35'200
X765	22'000	18'000	14'400
X986	20'000	16'000	12'800
X1055	17'000	13'000	10'400
X1057	18'000	15'000	12'000
X1205	15'000	12'000	9'600
X1505	12'000	10'000	8'000
XM1506	12'000	10'000	8'000
X1905	10'000	8'000	6'400
FX190-05 / CX1905	12'000	10'000	8'000
FX210-04 / CX2104	10'000	8'000	6'400
FX300-04	8'000	6'000	4'800
CX3504	5'000	4'000	3'200
FX375-06	5'000	4'000	3'200
X635T	30'000	25'000	20'000
X9810T	40'000	36'000	28'800
X765T	22'000	18'000	14'400
X1055T	12'000	8'000	6'400
X1205T	15'000	12'000	9'600



Données techniques  
 ➡ : entrée - sortie  
 n : t/min 50% DC  
 n max. : t/min 10% DC  
 DC,ED : durée du cycle 90 min

kW : puissance en kW (n)  
 Nm : Couple Nm (n)  
 kg : poids en kg

Technische Daten  
 ➡ : Eingang - Ausgang  
 n : U/Min 50% DC  
 n max. : U/Min 10% DC  
 DC,ED : Zyklusdauer 90 Min

kW : Leistung kW (n)  
 Nm : Drehmoment Nm (n)  
 kg : Gewicht in kg

Technical data  
 ➡ : Input - output  
 n : rpm 50% DC  
 n max. : rpm 80% DC  
 DC,ED : duty cycle 90 Min

kW : power in kW (n)  
 Nm : torque Nm (n)  
 kg : weight in kg

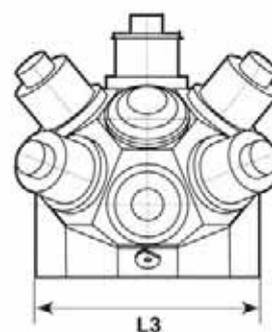
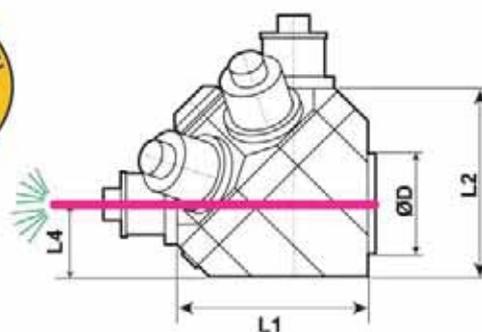
# Données techniques Technische Daten Technical data

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	TRI 150	TRI 200	TRI 300	TRI 400	TRH 300	TRH 400	TRH 500	TRH 800	TRA 200
NOMBRE DE POSITIONS ANZAHL STATIONEN NUMBER OF STATIONS	2-4-6	2-4-6-8	2-4-6	2-4-6	2-4-6-8	2-4-6-8-12	2-4-6-8	2-4-6-8	2-3-4
PUISSANCE TRANSMISSIBLE ÜBERTRAGBARE LEISTUNG TRANSMITTING POWER	kW max. 3.7	7	12	22	12	22	40	40	7
COUPLE TRANSMISSIBLE DREHMOMENT TRANSMITTING TORQUE	Nm 60	110	250	700	250	700	1700	3000	110
VITESSE DE ROTATION MAX. MAX SPINDELDREHZAHL MAX ROTATION SPEED	rpm 18'000	16'000	15'000	11'000	15'000	11'000	6'000	4'000	16'000
REPETABILITE DE LA POSITION WIEDERHOLBARKEIT DER SPINDELPOS. REPEAT OF SPINDLE POSITION	+/-2" (0.0016 mm)	+/-2" (0.0020 mm)	+/-2" (0.0025 mm)	+/-2" (0.003 mm)	+/-2" (0.0025 mm)	+/-2" (0.003 mm)	+/-2" (0.0035 mm)	+/-2" (0.004 mm)	0.01 mm
PRECISION DE POSITIONNEMENT POSITIONIERGENAUIGKEIT PRECISION OF POSITIONING	+/-6" (0.005 mm)	+/-6" (0.006 mm)	+/-6" (0.007 mm)	+/-6" (0.010 mm)	+/-6" (0.007 mm)	+/-6" (0.01 mm)	+/-5" (0.01 mm)	+/-5" (0.0125 mm)	0.01 mm
TEMPS D'INDEXION 1/6 DE TOUR INDEXIERUNGSZEIT 1/6 DER DREHUNG INDEXING TIME 1/6 OF ROTATION	s. 0.6	0.8	1	1.5	1	1.5	2.5	2.5	0.8
ENCOMBREMENT PLATZBEDARF DIMENSION	L1 (mm) 160 L2 (mm) 160 L3 (mm) 170 L4 (mm) 75 ØD (mm) 85	210 210 220 100 100	270 270 290 125 135	390 390 420 180 200	280 280 340 105 135	375 375 440 145 200	505 505 570 220 270	740 740 820 320 300	240 290 370 64 -
POIDS SANS OUTILLAGE GEWICHT OHNE WERKZEUG WEIGHT WITHOUT TOOL	kg 30	55	100	350	100	350	600	2000	100
ENTREE D'ARROSAGE PAR LE CENTRE INNERE KÜHLMITTELZUFUHR COOLANT THROUGH	bars 50 (option 100)	50 (option 100)	50 (option 100)	50 (option 100)	50 (option 100)	50 (option 100)	50	50	50 (option 100)
PRESSION D'HUILE POUR INDEXION OELDRUCK FÜR REVOLVERINDEXIERUNG OIL PRESSURE FOR TURRET INDEX	bars 20 à 50	20 à 50	20 à 50	20 à 50	20 à 50	20 à 30	20 à 30	20 à 30	20 à 50



HSK 100  
40 KW



TRH 500

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Module d'usinage flexible  
Das flexible Bearbeitungsmodul  
The flexible machining module



TRH 806



TRH 404

4 Multibroches / 184 broches  
4 Mehrspindelköpfe / 184 Spindeln  
4 Multispindle Heads / 184 Spindles

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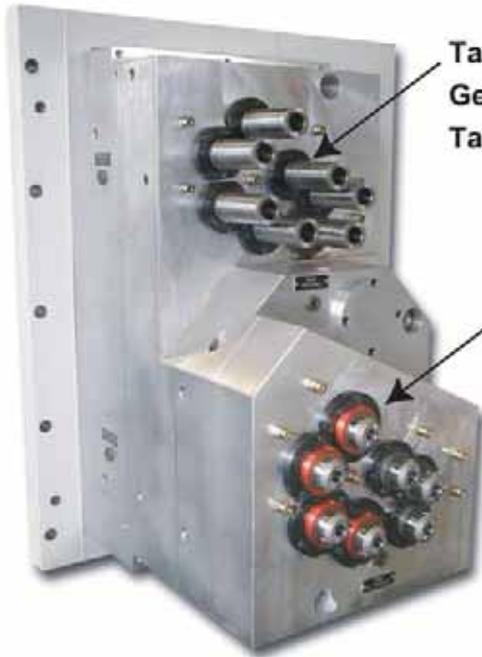


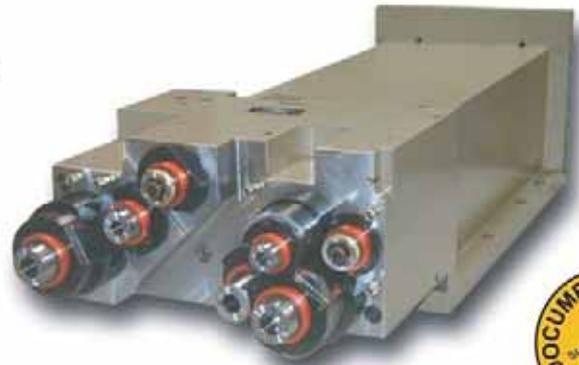
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sans changer d'outil

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ohne das Werkzeug zu wechseln

 milling, drilling and tapping  
without changing the tool

 Entraxes réduits (dès 4.5 mm)  
Vitesse de rotation jusqu'à 40.000 min-1

 Geringer Achsabstand (ab 4.5 mm)  
Drehzahlen bis 40.000 min-1

 Small spindle axis distance (from 4.5 mm)  
Revolution up to 40'000 min-1

 De l'horlogerie au moteur de bateau  
Von der Uhrenindustrie bis zum Schiffsmotor  
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**Tête de taraudage à patronne**  
**Gewindeschneidkopf mit Leitpatrone**  
**Tapping head with lead screw**

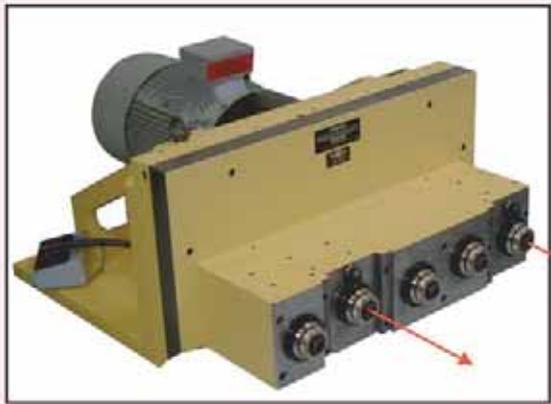


Différents pas dans la même opération  
 Verschiedene Steigung in der gleichen Operation  
 With different pitches in the same operation

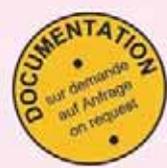
Avec contrôle électrique  
 Mit elektrischer Kontrolle  
 With electrical control



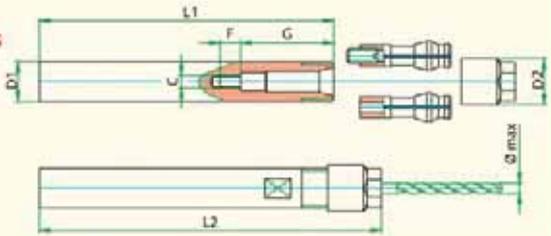
**Têtes à broches alternées**      **Köpfe mit abwechselnden Spindeln**  
**Multi heads with alternating spindles**



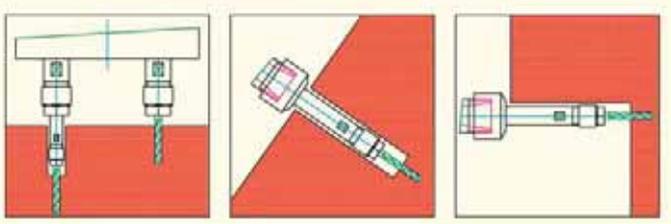
3 broches fixes / 2 mobiles  
 3 fixe Spindeln, 2 Vorschübe Spindeln  
 3 fixed spindles, 2 stroke spindles



**Rallonges de broches miniatures**  
**Miniaturspindelverlängerungen**  
**Minispindle extensions**



Typn	D1	D2	L1	L2	G	F	C	Ø max	Pince Spannzange Collet	Ecrin Mutter Nut	SW	
											C1	C2
04200	5	5	60	63	9	--	--	2	00403A	00402A	SW4	SW4
05200	6	6.35	80	83.5	18	--	--	2.2	0503	00502	SW5	SW6
06200	6	8.5	80	84.5	23	6	M3	3	0603	00602	SW5	SW7
07200	8	9.5	100	105	23	6	M3	3.5	0703	00702	SW7	SW8
08200	8	10.5	100	105	25	8	M4	4.3	0803	00802	SW7	SW9
10200	10	13	100	106	24.5	8	M4	5.3	1003	01002	SW9	SW11
12200	12	15.5	120	126.5	24.5	15	M5	6.5	1203	01202	SW11	SW13
15200	16	19	120	127.5	24.5	20	M6	8.5	1502	01502	SW13	SW17





## Parc machines

### Centres d'usinage de haute précision :

- DIXI 200 à palettes, **4 axes**, 120 outils  
1000x800x1000 mm
- OKUMA MA 40H A 6 palettes, **4 axes**, 150 outils  
560x610x560 mm
- OKUMA MA 600 HB **6 palettes**, 150 outils,  
1000x800x900 mm
- 3 x MIKRON VCE, 3 axes  
1250x508x675 mm

### Fraisage CNC :

- REIDEN BF23, **5 axes**  
3000x1500x1200 mm
- REIDEN BF2, **5 axes**  
1200x700x750 mm
- Fraisage conventionnel  
max. 1500x1000x750 mm
- VERNIER ; HURON ; etc.

### Tournage CNC 2 - 3 axes :

- 15 tours avec outils motorisés passage  $\varnothing$  80  
710x2000 mm

### Centre de tournage fraisage :

- 3 tours CNC **5 axes**, 72 outils 610x1500 mm

### Machines à pointer / Aléuseuse :

- 5 SIP HYDROPTIC 6A 1000x700x800 mm
- SIP HYDROPTIC 7A 1400x1000x1000 mm
- 3 aléuseuses DIXI 75 1000x1000x900 mm
- 3 SIP MP3K 520x380x350 mm

### Rectifiage :

- 1 rectifieuse CNC STUDER ext. int. 3 broches  
1600 x 450
- 2 rectifieuses CNC, extérieur  
max. 350x1250 mm
- 1 rectifieuse VOUMARD CNC 150, 3 broches
- 5 rectifieuses VOUMARD 3A et 5A
- Rectifiage filet REISHAUER
- Rectifiage centre
- 5 Planeuses max. 2000x500x400 mm

### Machine à tailler et rectifier les engrenages CNC, capacité module 3

- Machine à raboter les engrenages, module 2

### Electro-érosion AGIE

### Honage

- Machine à honer SUNNEN

### Gravage laser

- 1 machine de gravage laser

### Contrôle 3D

- 2 machines à mesurer 3D DEA,  
3.5+41/1000 1500x1000x900 mm

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