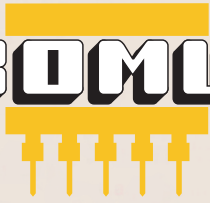


PIBOMULTI

SWISS



MADE

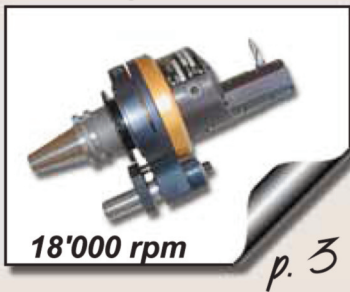
Standard

Représenté en
France par :



Standard

Têtes angulaires
Winkelköpfe
Angular heads



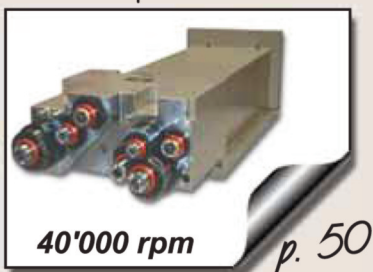
Multiplicateurs de vitesse
Schnellaufspindeln
Spindle speeders



Têtes revolver
Revolverköpfe
Turret heads



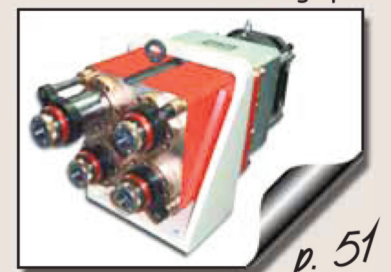
Têtes multibroches
Mehrspindelköpfe
Multispindle heads



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

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 :

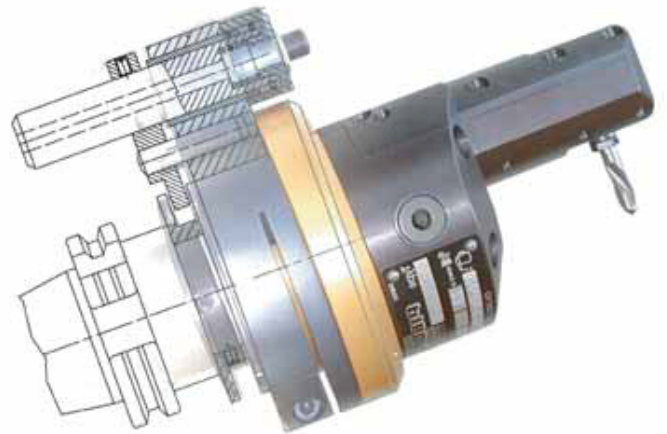
- ➔ in engen Bohrungen oder Taschen,
- ➔ schmalen Bearbeitungsfenstern
- ➔ kollisionsträchtigen Vorrichtungssituationen

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

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



CEP 08 L1 - CEP 08 L2	4
CEP 10 L1 - CEP 10 L2	4
CEP 13 L1 - CEP 13 L2	5
CEP 16 L1 - CEP 16 L2	6
CEP 20 L1 / L2 / etc	7
CEP 26 L1 - CEP 26 L2	8

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



CMP 10 L1 - CMP 10 L2	9
CMP 16 L1 - CMP 16 L2	9
CMP 10X5 L1 - CMP 10X5 L2	10

Tête équerre de sciage
Winkelkopf zum Sägen
Sawing angular head

CEF 16/22/27/32	10
-----------------------	----

Tête équerre à cône
Winkelkopf mit Steilkegel
Angular head with shank



CEC 30 L1 / L2 / etc	11
CEC 40 L1 - CEC 40 L2	12
FEC 30 L1 / L2 / etc	13
FEC 40 L1 - FEC 40 L2	13
CEC 50	14
FEC 50	14

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
CTAR 10	15
CTAR 13	16
CTAR 16	16
FTAR 16	17
CTAR 20	17
FTAR 20	17
CTAR 25	18
FTAR 25	18

Tête angulaire réglable à cône
Einstellbarer Winkelkopf mit Steilkegel
Adjustable angular head with shank



CTAR 40 / CTARH 40	19
FTAR 40 / FTARH 40	19
FTAR 40 - 2.5 / FTARH 40 - 2.5	20
CTARH 50 - 20 / CTARH 50 - 20 - 2 ..	21
FTARH 50	22

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
CDP 03 L1 / L2 / etc	24
CDP 04 L1 / L2 / etc	25
CDP 041 L1 / L2 / etc	26
CDP 05 L1 / L2 / etc	27
CDP 06 L1 / L2 / etc	28
CDP 07 L1 / L2 / etc	29
CDP 08 L1 / L2 / etc	29
CDP 10 L1 / L2 / etc	30
CDP 13 L1 / L2 / etc	30

VDI

Tête pour tour
Kopf für Drehmaschine
Head for lathe



TTAR 07	31
TTAR 10	31
TTAR 13	32
TDC 03 L1 / L2	32
TTE 10 X 5	33
TDP 02/03/04/05/06	34
TDP 07/08/10	34

PROGRAM CHIRON	34
----------------------	----

PROGRAM AEROSPACE	35
-------------------------	----

ARROSAGE / KÜHLMITTEL / COOLANT	36
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TETES SPECIALES / SONDERKÖPFE / SPECIAL HEADS ...	37
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OUTILS TOURNANTS / ANGETRIEBENE WERKZEUGE

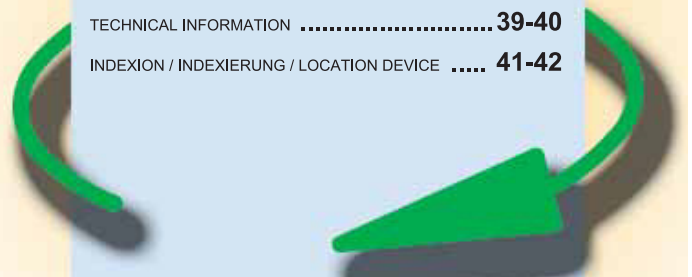
DRIVEN TOOLHOLDERS FOR CNC LATHES	38
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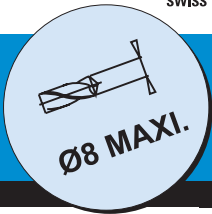
INFORMATIONS TECHNIQUES

TECHNISCHE INFORMATIONEN

TECHNICAL INFORMATION	39-40
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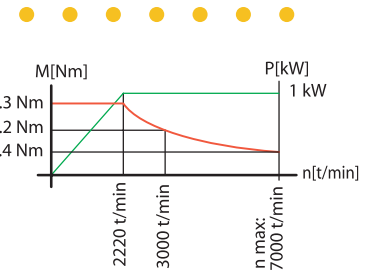
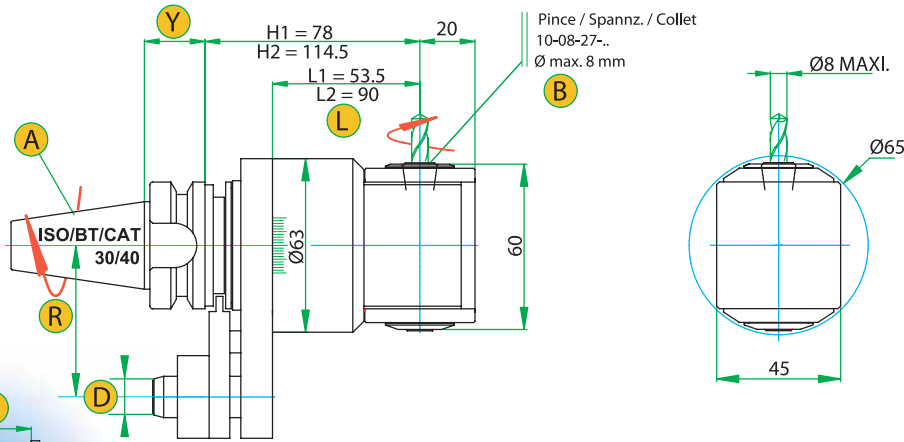
INDEXION / INDEXIERUNG / LOCATION DEVICE	41-42
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CEP 08 L1 - CEP 08 L2

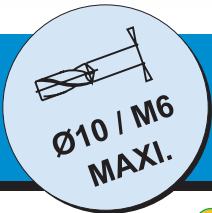
7'000 rpm
SPECIAL : 10 000 rpm



voir page / siehe Seite / see page 39-40

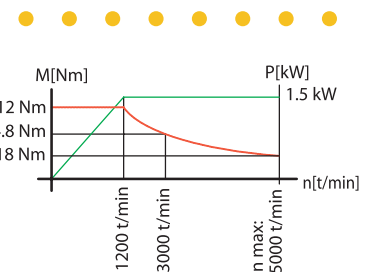
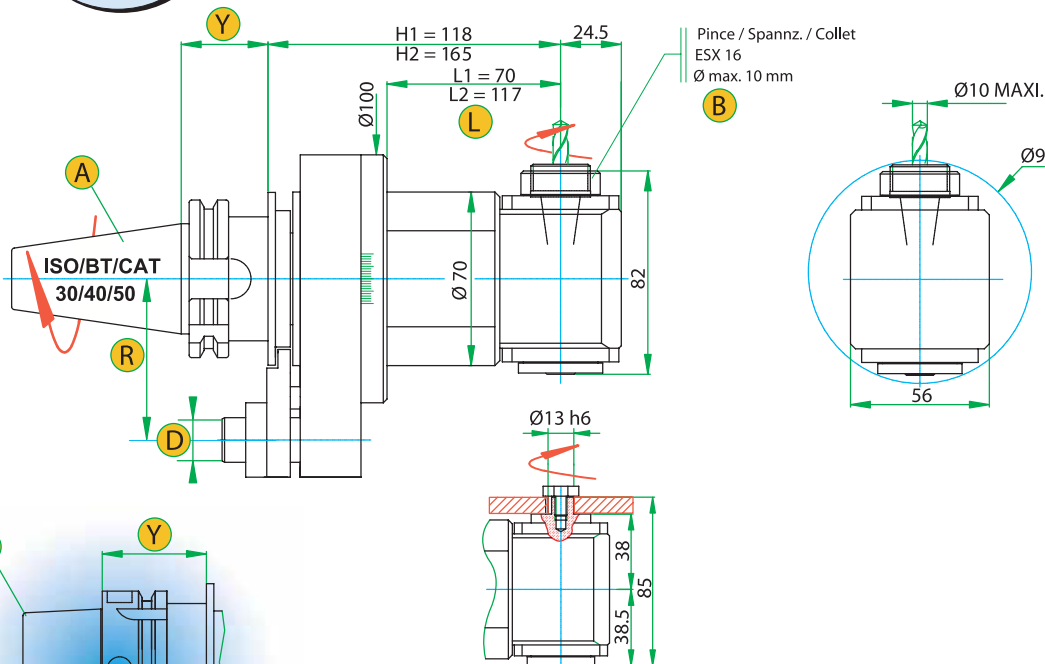
	kW	Nm		
7000 t/min u/min rpm	1.0 kW	4.3 Nm	1 à 1	≈ 1.5 à 3 kg

HSK 40/50/63



CEP 10 L1 - CEP 10 L2

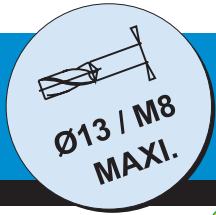
5'000 rpm
SPECIAL : 7 000 rpm



voir page / siehe Seite / see page 39-40

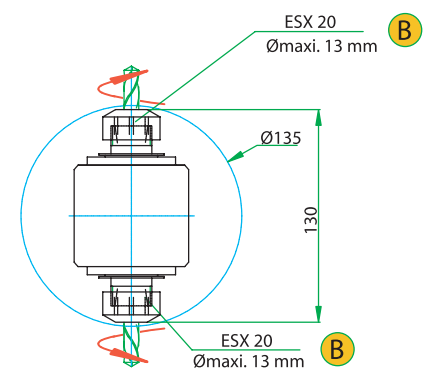
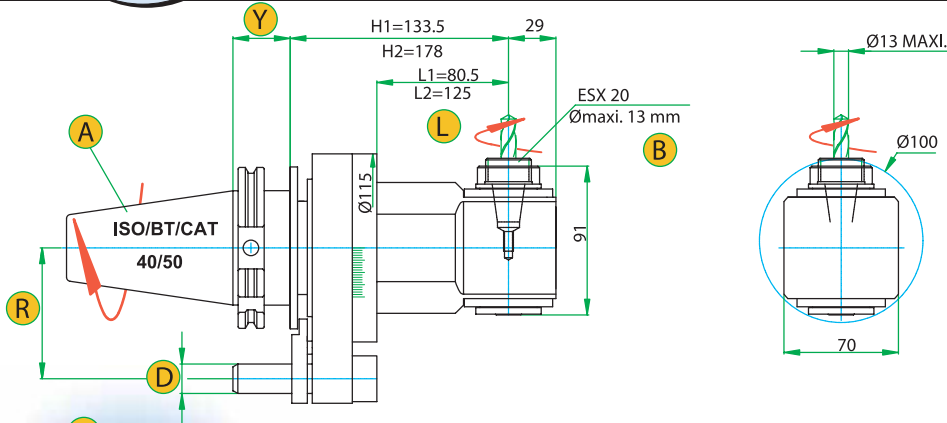
	kW	Nm		
5000 t/min u/min rpm	1.5 kW	12 Nm	1 à 1	≈ 5.5 à 9 kg

HSK 63/80



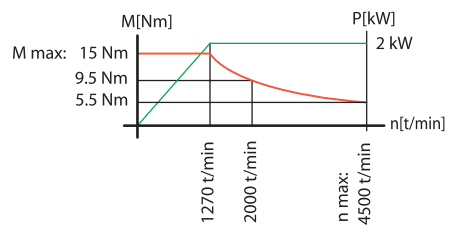
CEP 13 L1 - CEP 13 L2

4'500 rpm
SPECIAL : 6 000 rpm



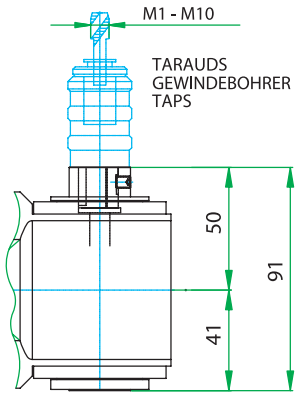
voir page / siehe Seite / see page 39-40

	kW	Nm		
4500 t/min u/min rpm	2.0 kW	15 Nm	1 à 1	≈ 6 à 10 kg

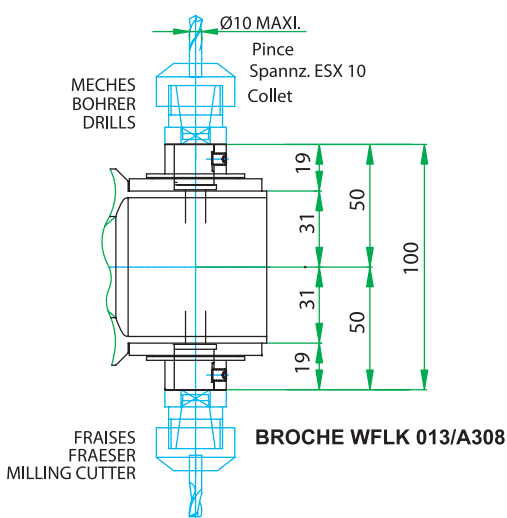


HSK 63/100

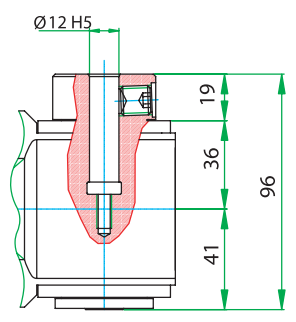
BROCHE WFLK 013/A308



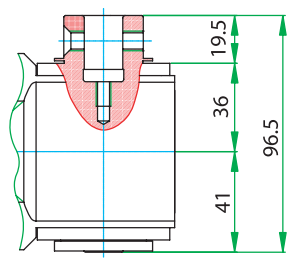
BROCHE WFLK 013/A308



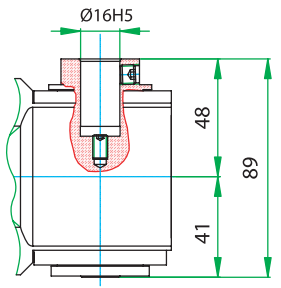
WHISTLE NOTCH DIN 1835-E



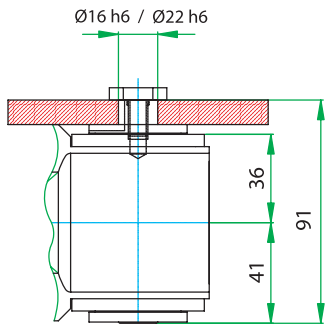
ABS 32

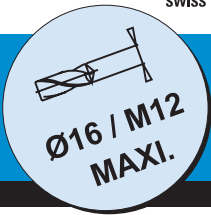


Cyl. Ø16



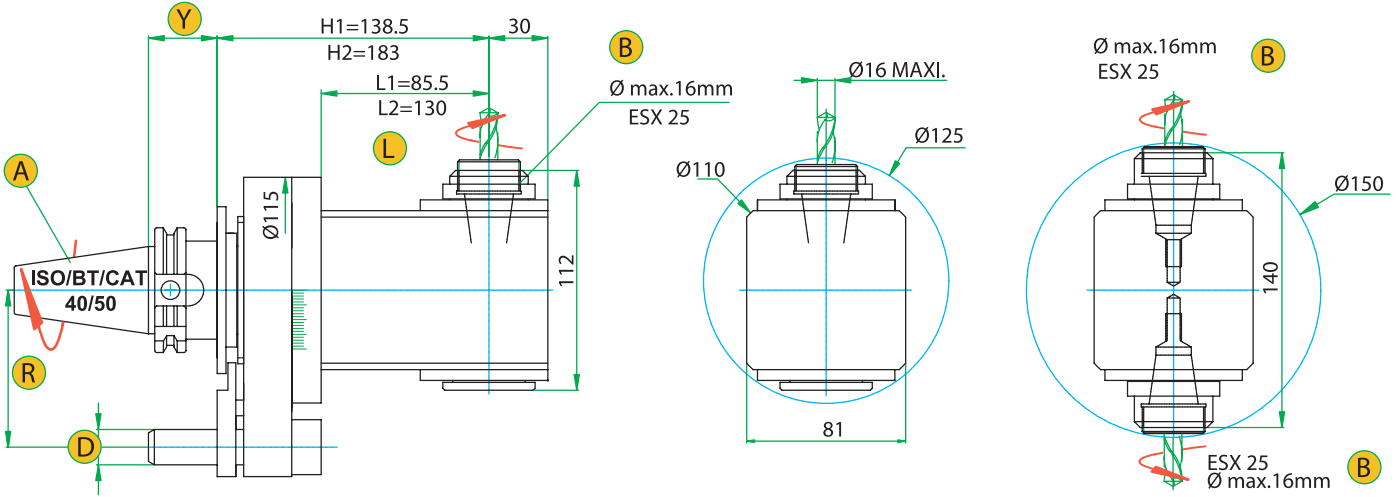
Cyl. Ø16 OU Cyl. Ø22



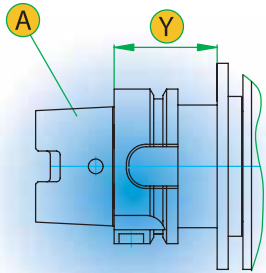


CEP 16 L1 - CEP 16 L2

4'500 rpm
SPECIAL : 5 500 rpm

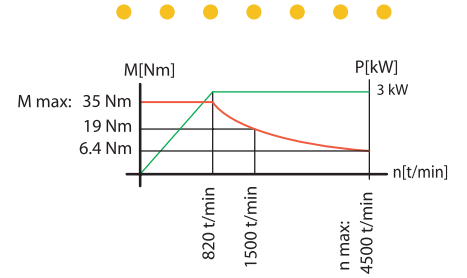


voir page / siehe Seite / see page 39-40

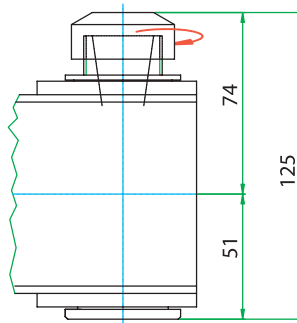


HSK 63/100

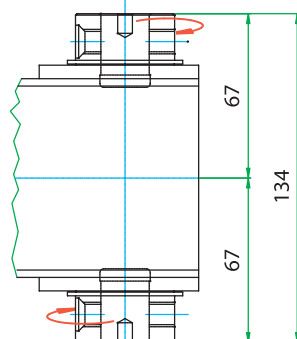
	kW	Nm		
4500 t/min u/min rpm	3.0 kW	35 Nm	1 à 1	≈ 6.5 à 11 kg



ESX 25
Ø MAX 16 mm



ABS 40



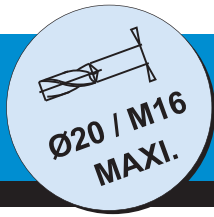
ABS 40



CEP 16 HSK

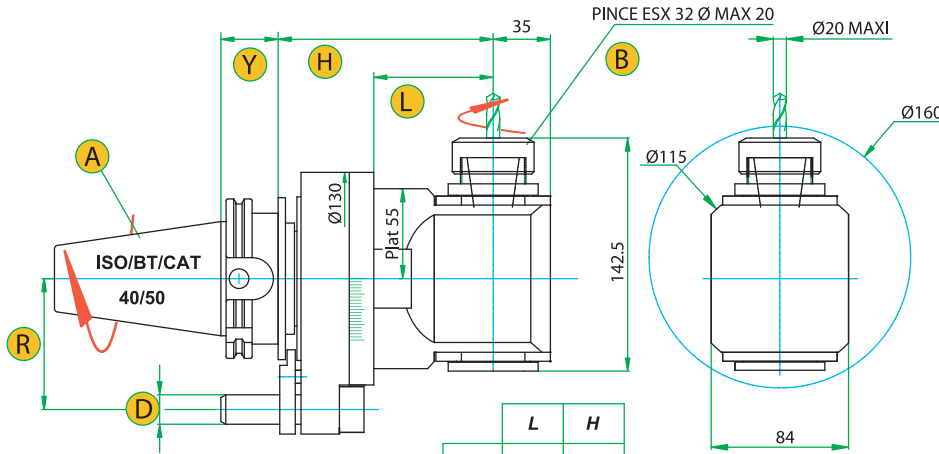


CEP 20 L1

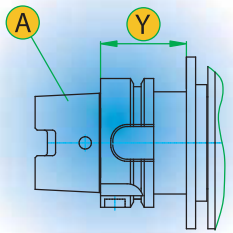
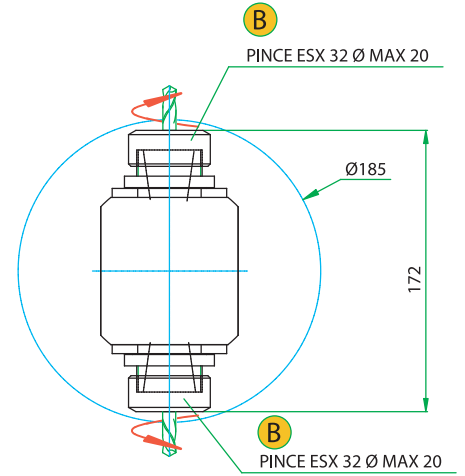


CEP 20 L1/L2/L...

3'700 rpm
SPECIAL : 5 000 rpm



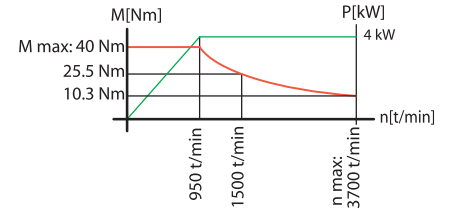
	L	H
1	73	131.5
2	127	185.5
4	260	330.5
6	360	430.5



HSK 63/80/100

voir page / siehe Seite / see page 39-40

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



HSK40 MAPAL	BROCHE WELDON 20	ABS 50	1 BROCHE
			2 BROCHES
			Autres broches sur demande Andere Spindeln auf Anfrage Another spindle on request

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

WFLK 115/A308

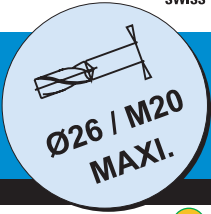
FRAISER FRAESER TARAUDS
MILLING CUTTER MECHES BOHRER DRILLS
GEWINDEBOHRER TAPS

Ø16 MAXI ESX 25 M3 - M12

Ø35 11.5 56.5 50.5 118.5

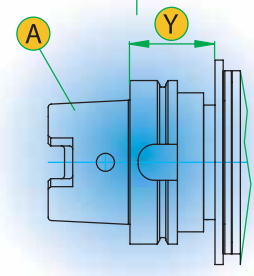
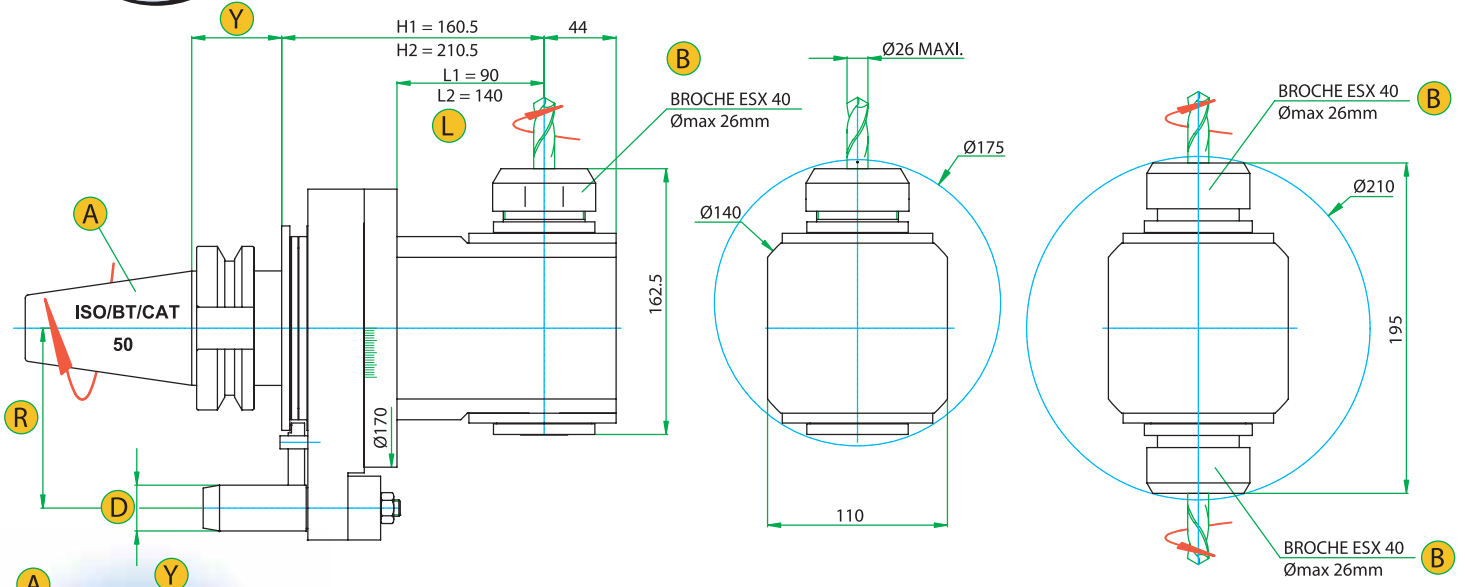
11.5 101 124 11.5

FRAISER FRAESER TARAUDS
MILLING CUTTER MECHES BOHRER DRILLS
GEWINDEBOHRER TAPS



CEP 26 L1 - CEP 26 L2

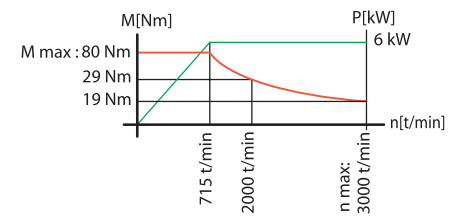
3'000 rpm
SPECIAL : 4 000 rpm



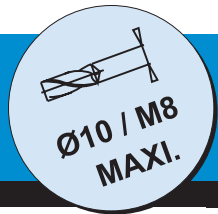
HSK 100

voir page / siehe Seite / see page 39-40

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

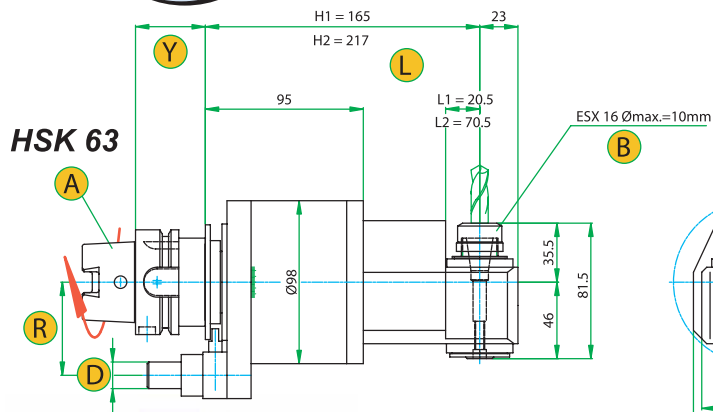


<p>WFLK 225</p> <p>MECHES BOHRER DRILLS Ø20 MAXI ESX 32</p>	<p>Broche 2 sorties WFLK 225</p>	<p>BROCHE ABS 40</p>	<p>ABS 63</p>	<p>ABS 63</p>
<p>BROCHE CYL 22</p>	<p>BROCHE CYL 22</p>	<p>BROCHE CYL 40</p>	<p>CM3</p>	<p>BROCHE CK6 - MVS63-36</p>
<p>WELDON Ø 25</p>	<p>WELDON Ø25</p>	<p>WELDON Ø32</p>	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

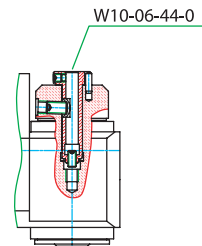


CMP 10 L1 - CMP 10 L2

10'000 rpm



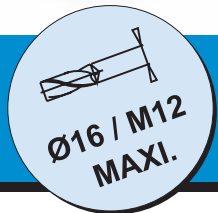
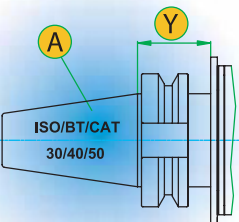
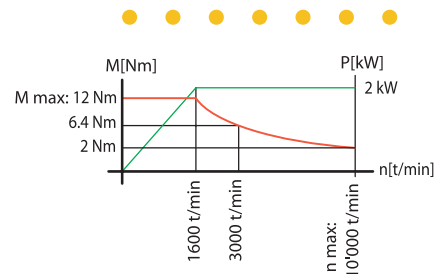
BROCHE W 10



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

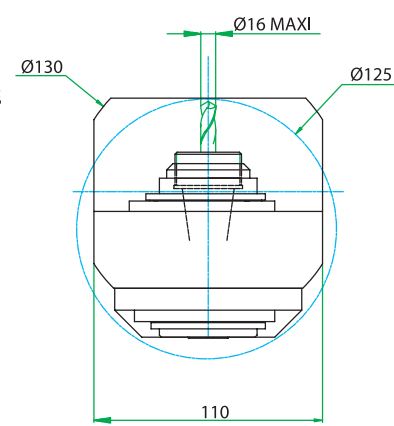
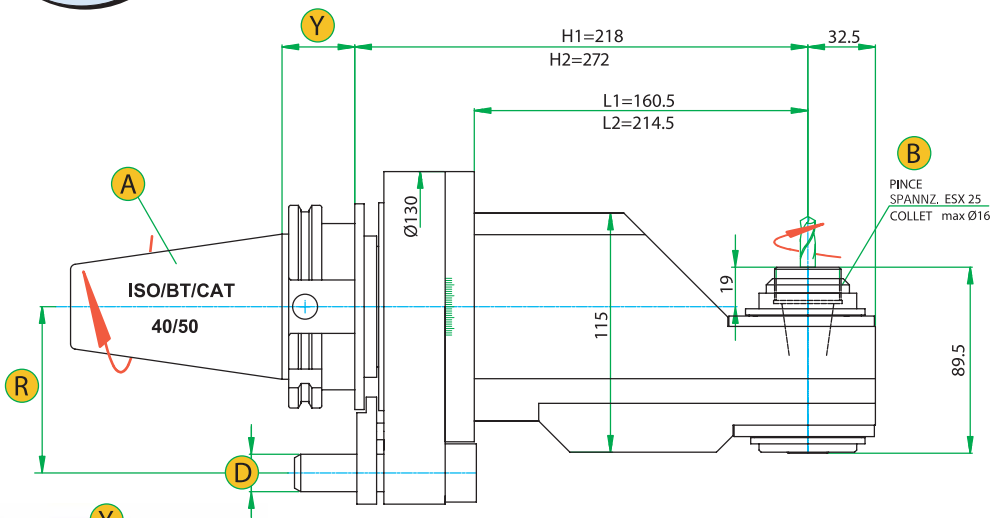
voir page / siehe Seite / see page 39-40

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



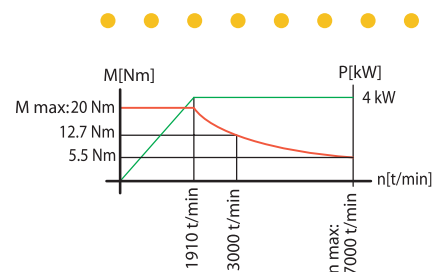
CMP 16 L1 - CMP 16 L2

7'000 rpm

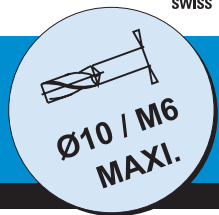


voir page / siehe Seite / see page 39-40

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

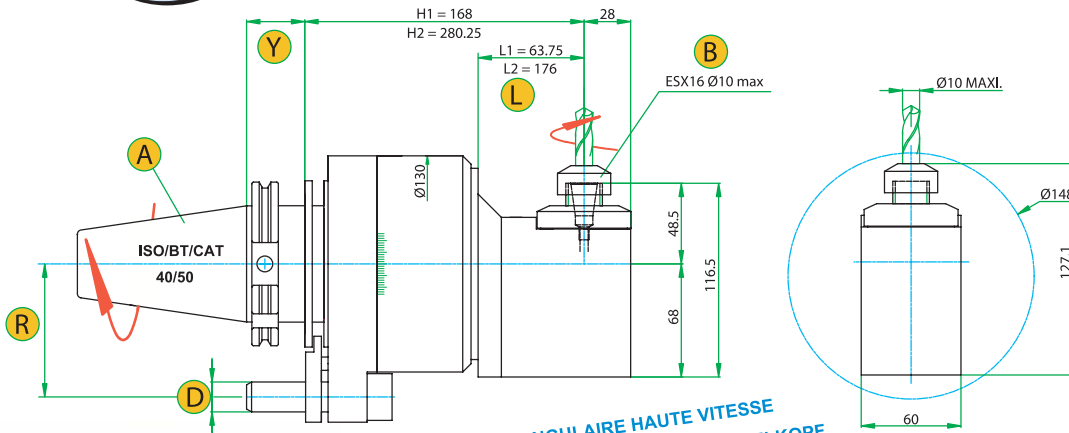


HSK 63/80/100

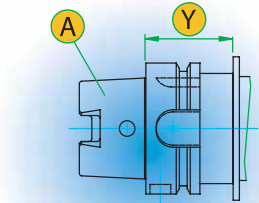
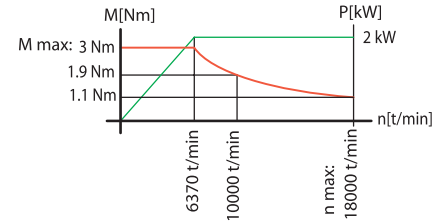


CMP 10X5 L1 - CMP 10X5 L2

18'000 rpm



TETE ANGULAIRE HAUTE VITESSE
HOCHGESCHWINDIGKEITSWINKELKOPF
HIGH SPEED ANGULAR HEAD



HSK 63/80/100

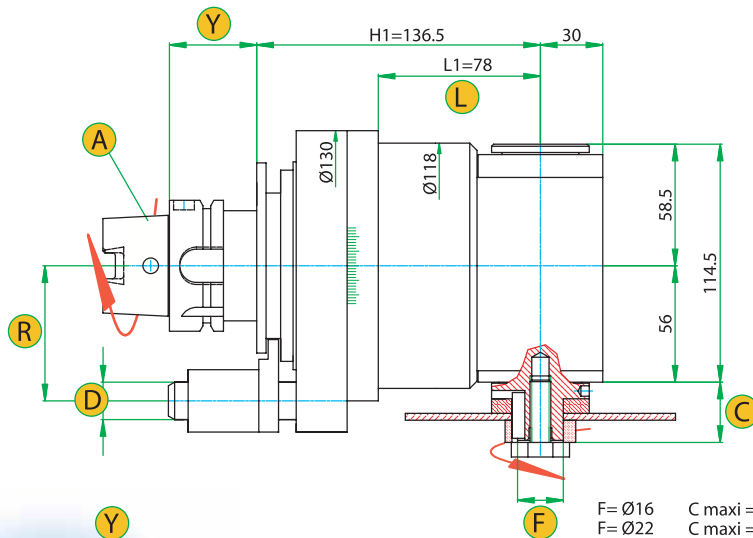
voir page / siehe Seite / see page 39-40

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

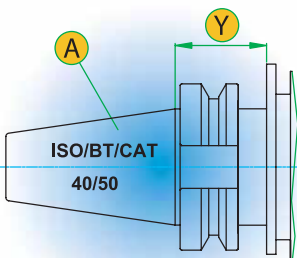
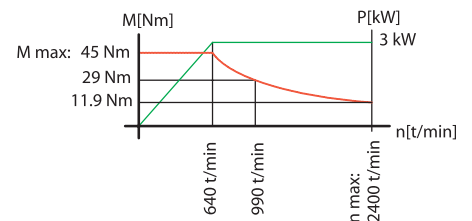
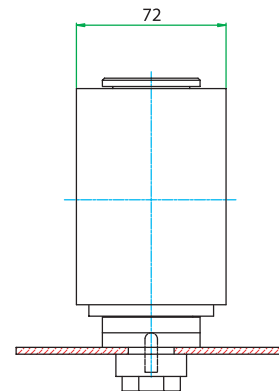
TETE DE SCIAGE SÄGEKOPF SAWING HEAD

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

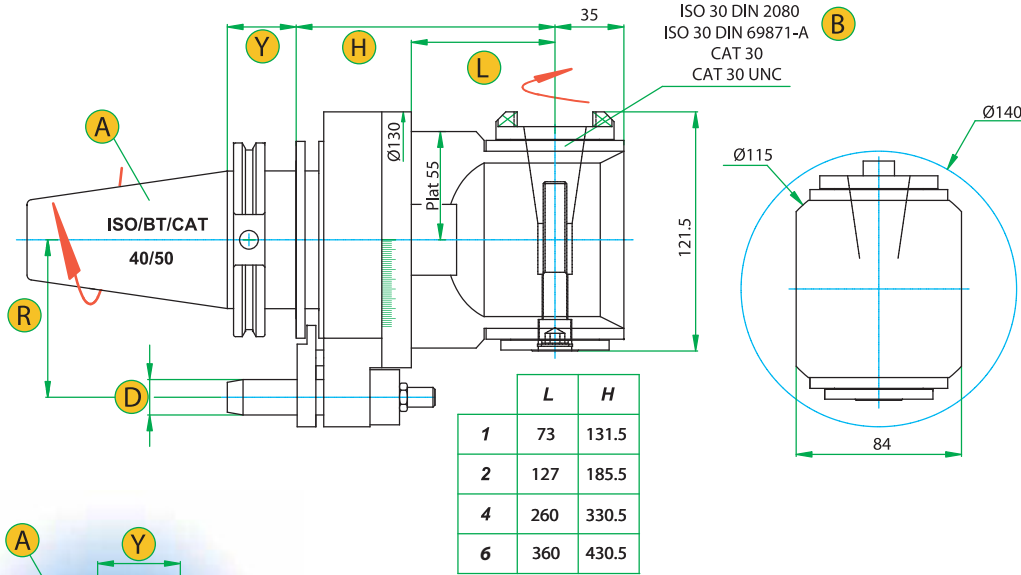


voir page / siehe Seite / see page 39-40

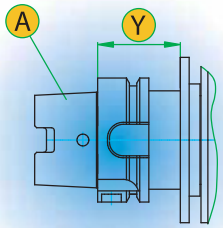
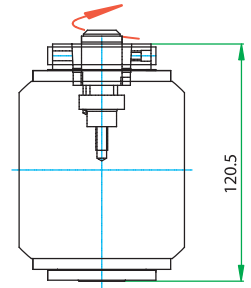
	BROCHE SPINDEL SPINDLE	kW	Nm		
2400	t/min u/min rpm	3.0 kW	45 Nm	1 à 0.74	≈ 6 à 6.5 kg

CEC 30 L1/L2/L...

3'700 rpm
SPECIAL : 5 000 rpm



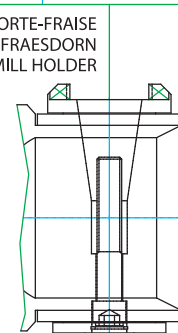
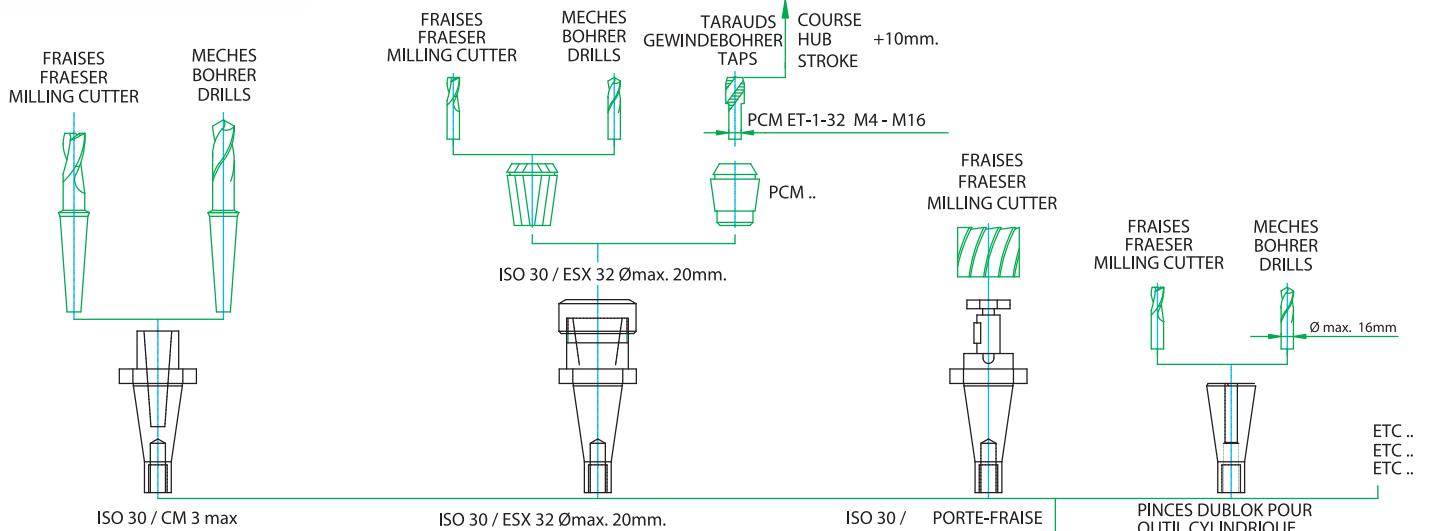
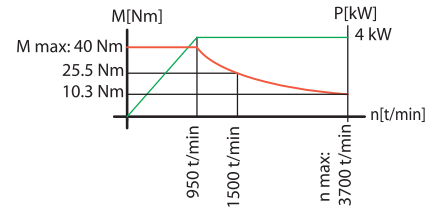
HSK 40 MAPAL



HSK 63/80/100

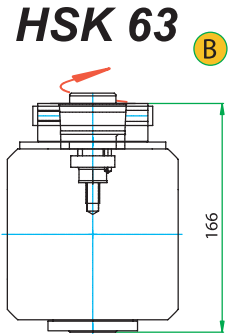
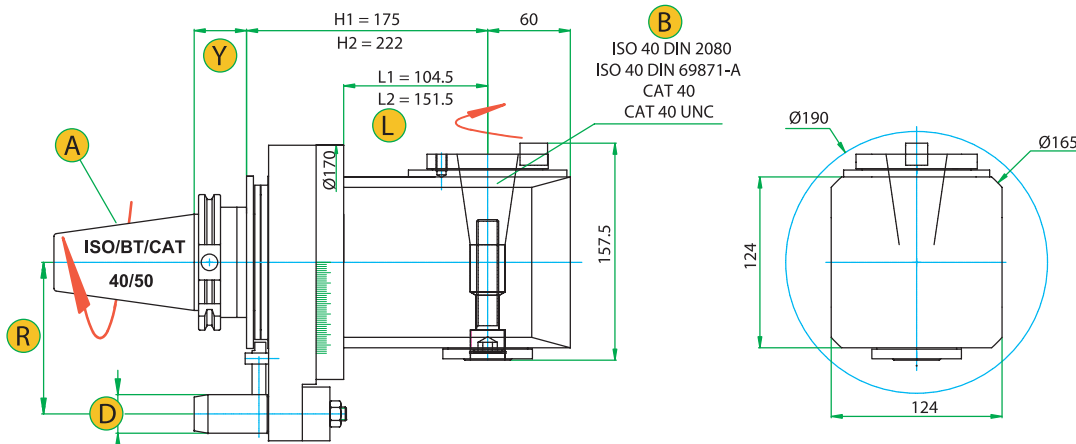
voir page / siehe Seite / see page 39-40

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



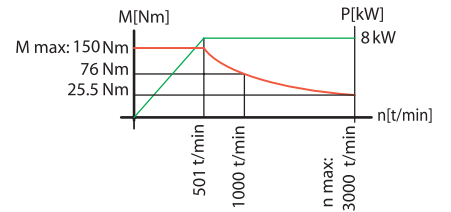
CEC 40 L1 - CEC 40 L2

3'000 rpm

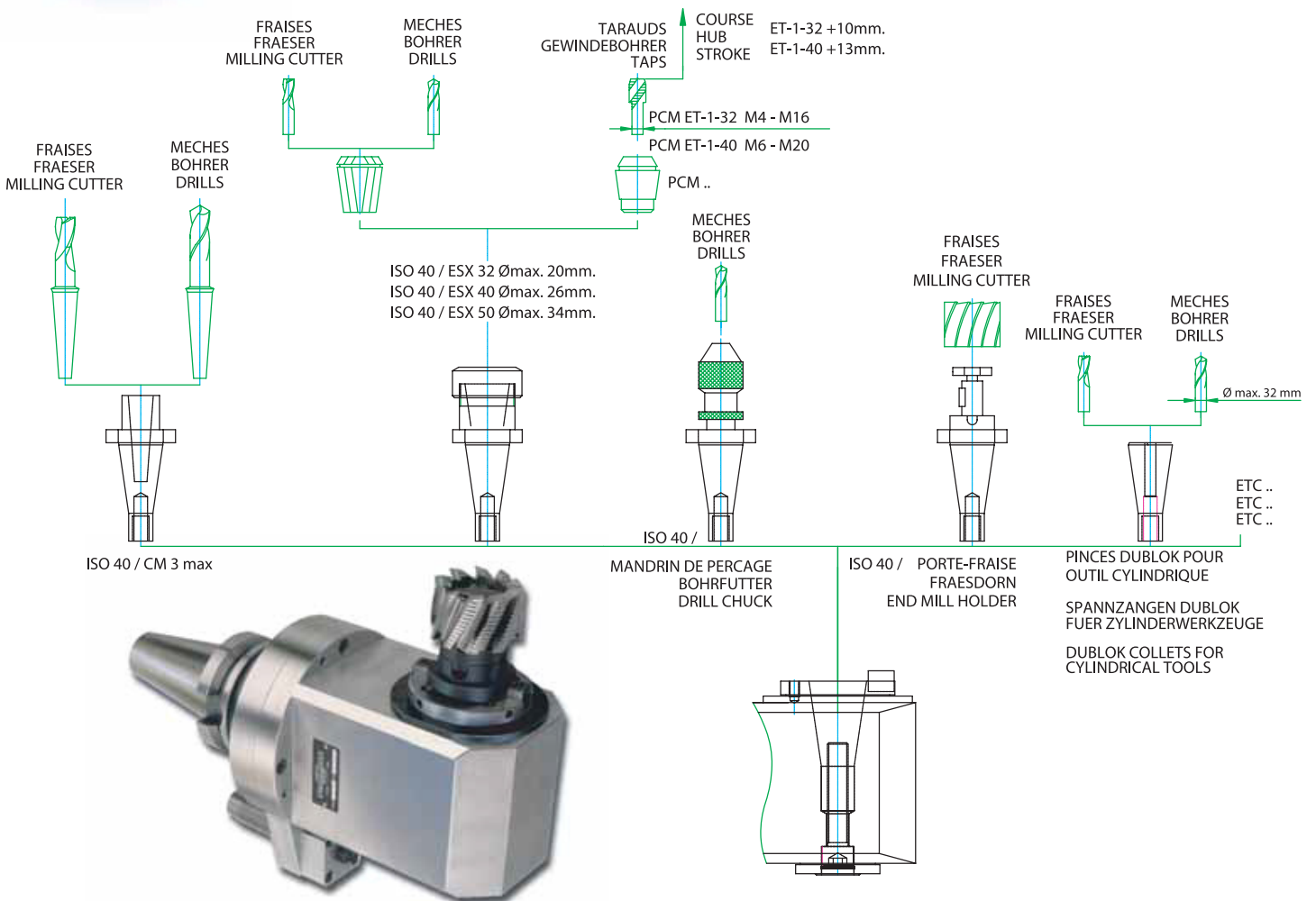


voir page / siehe Seite / see page 39-40

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



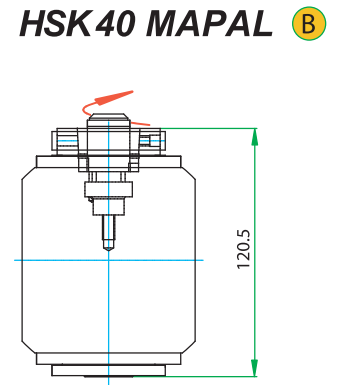
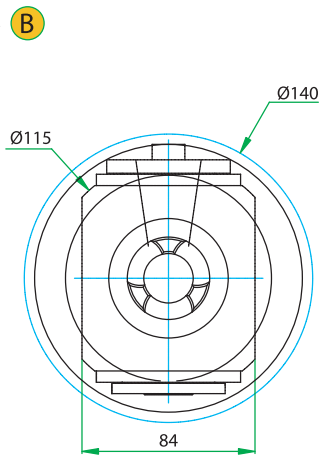
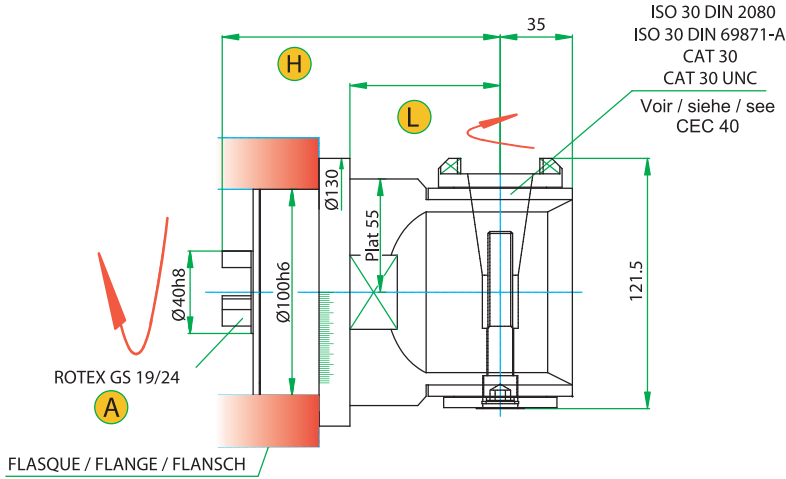
HSK 80/100/125



FLASQUE
FLANGE
FLANSCH

FEC 30 L1/L2/L...

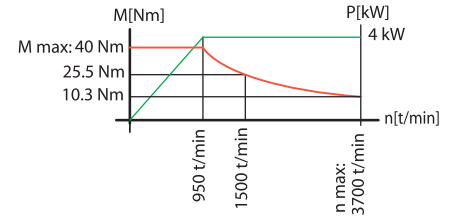
3'700 rpm
SPECIAL : 5 000 rpm



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

voir page / siehe Seite / see page 39-40

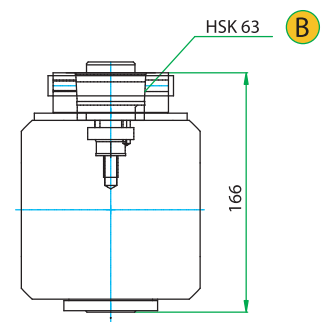
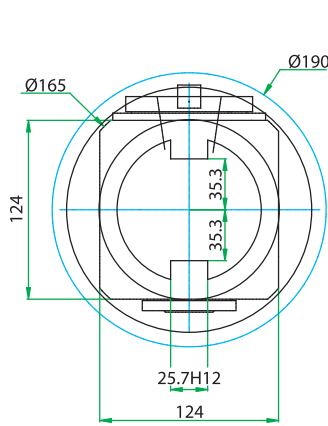
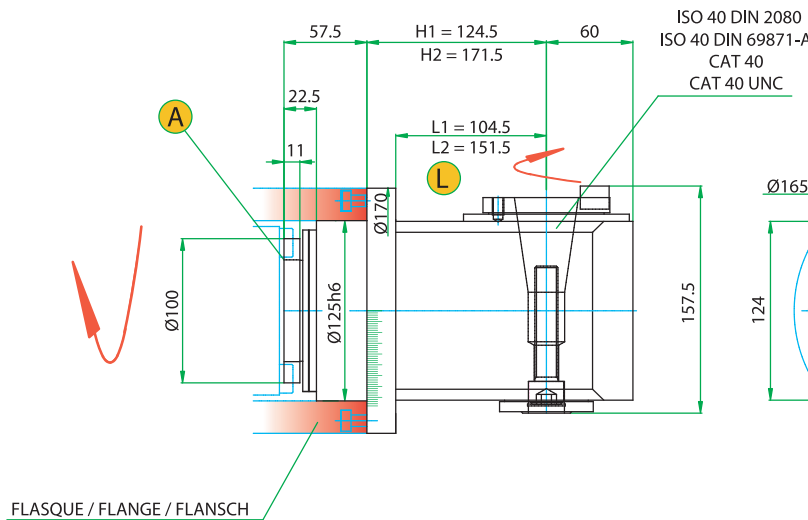
	kW	Nm		
3700 t/min u/min rpm	4.0 kW	40 Nm	1 à 1	≈ 9 à 13 kg



FLASQUE
FLANGE
FLANSCH

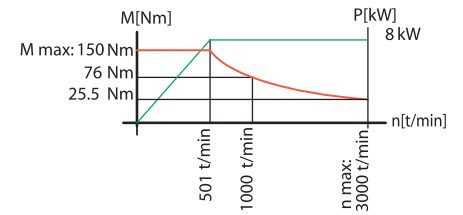
FEC 40 L1 - FEC40 L2

3'000 rpm



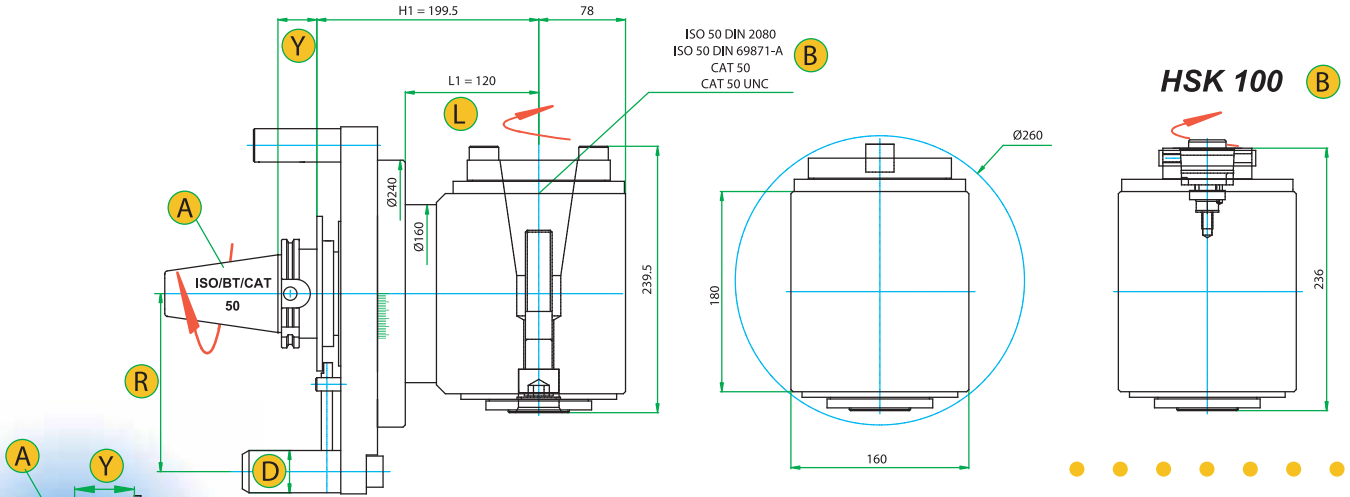
voir page / siehe Seite / see page 39-40

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



CEC 50

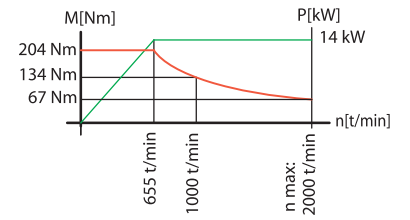
2'000 rpm



voir page / siehe Seite / see page 39-40

	kW	Nm		
2000 t/min u/min rpm	14 kW *	204 Nm *	1 à 1	≈ 50 kg

* 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



HSK 100/125

FLASQUE
FLANGE
FLANSCH

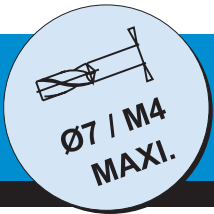
FEC 50

UP TO 10'000 Nm
100 kW



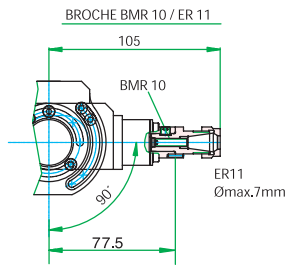
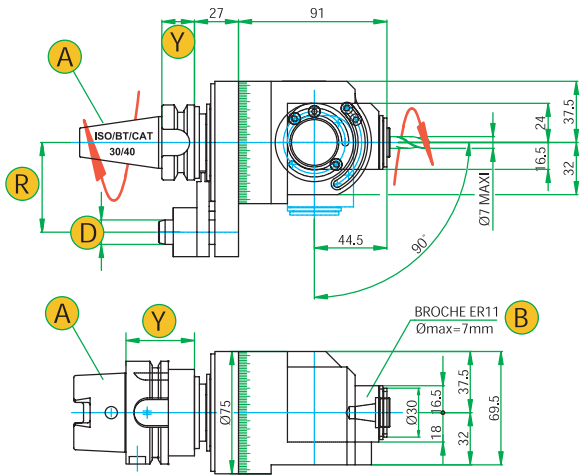
TYPE TYP TYPE	PUISSANCE LEISTUNG POWER	COUPLE DREHMOMENT TORQUE						
			t/min u/min rpm		kg	OPTIONS	OPTIONEN	OPTIONS
FEC50-14	14 kW	200 Nm	2000	1 à 1	≈ 50	Serrage d'outil automatique Arrosage central Positionnement 360° (manuel ou numérique)	Automatische Werkzeug Spannung Innere Kühlmittelzufuhr Orientierung 360° (Durch Hand oder numerisch)	Automatic tool clamping Coolant through Orientation 360° (By hand or NC)
FEC50-20	20 kW	600 Nm	2000	1 à 1	≈ 90	BROCHES ISO 50 - ISO 60 - HSK100 etc	SPINDEL ISO 50 - ISO 60 - HSK100 Usw.	SPINDLE ISO 50 - ISO 60 - HSK100 etc
FEC50-30	30 kW	1500 Nm	2000	1 à 1	≈ 250	ADAPTATION A tous types de machines Automatique Via station pick-up	ANPASSUNG Für alle Maschinen Automatische Indexierung Nach Pick-Up Station	ADAPTATION All type of machine Automatic On pick-up station
FEC50-??	?	?	?	?	?			

?? = selon vos besoins - Nar Ihre Bedarf - On your needs



CTAR 07

10'000 rpm



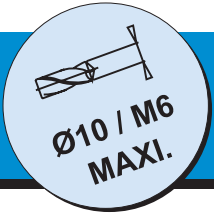
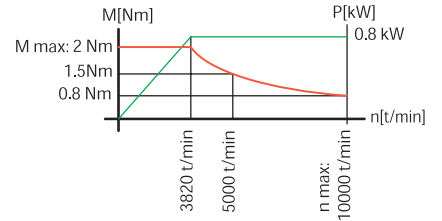
**A CHANGEMENT RAPIDE
SCHNELLWECHSEL
QUICK CHANGE**

HSK 40/50/63

voir page / siehe Seite / see page 39-40

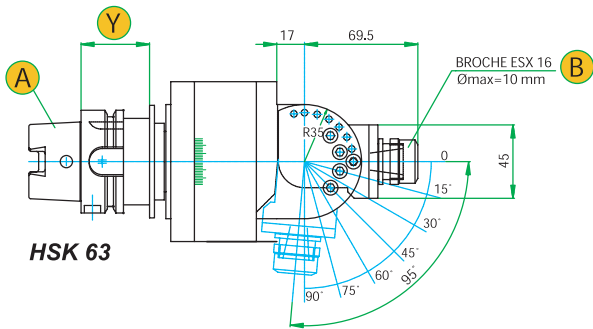
AUTRE BROCHE SUR DEMANDE
ANDERE SPINDELN AUF ANFRAGE
ANOTHER SPINDLE ON REQUEST

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

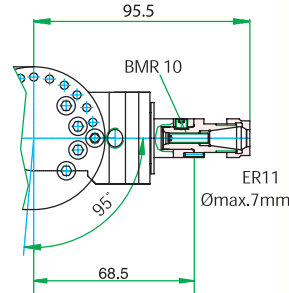


CTAR10

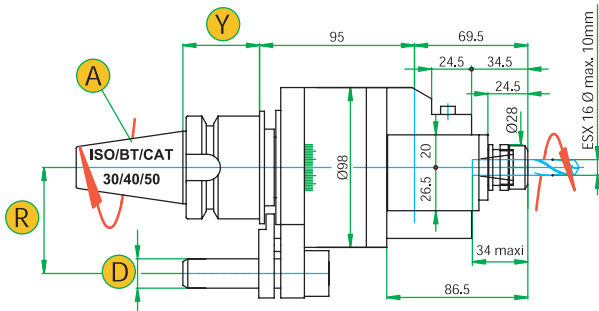
7'000 rpm



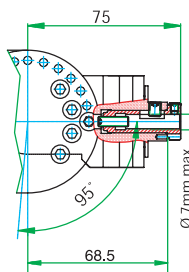
BROCHE BMR 10 / ER 11



**A CHANGEMENT RAPIDE
SCHNELLWECHSEL
QUICK CHANGE**



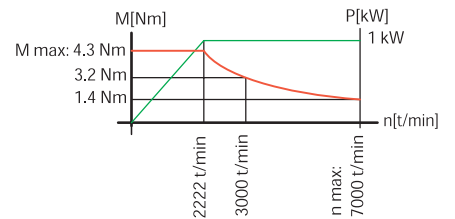
BROCHE BMR 10
DOUILLE W07-11-38

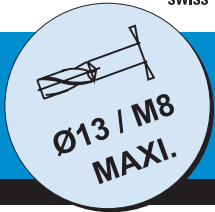


AUTRE BROCHE SUR DEMANDE
ANDERE SPINDELN AUF ANFRAGE
ANOTHER SPINDLE ON REQUEST

voir page / siehe Seite / see page 39-40

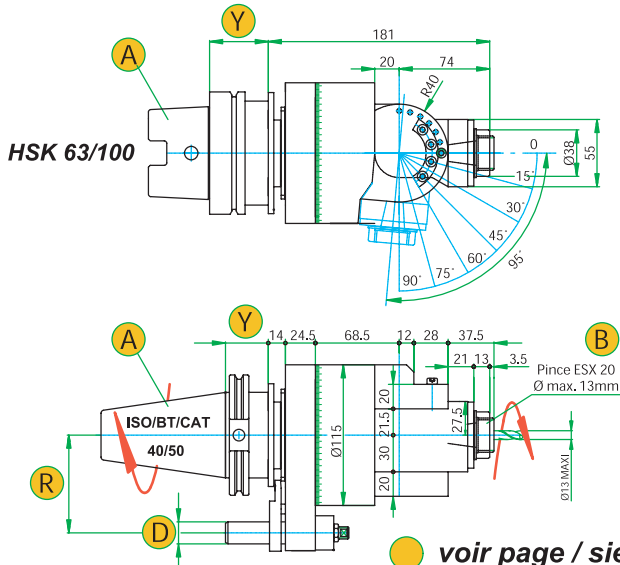
BROCHE SPINDEL SPINDLE	kW	Nm		
7000 t/min u/min rpm	1.0 kW	4.3 Nm	1 à 2	≈ 6.5 à 7.5 kg



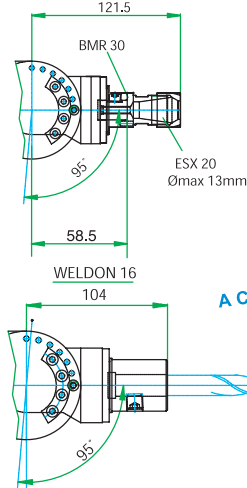


CTAR 13

5'000 rpm
SPECIAL : 6 000 rpm



BMR 30 / ESX 20 Ø Max. 13 mm

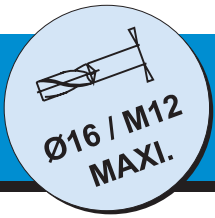
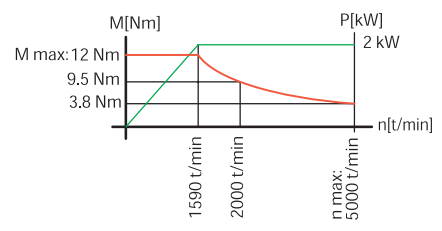


A CHANGEMENT RAPIDE
SCHNELLWECHSEL
QUICK CHANGE

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

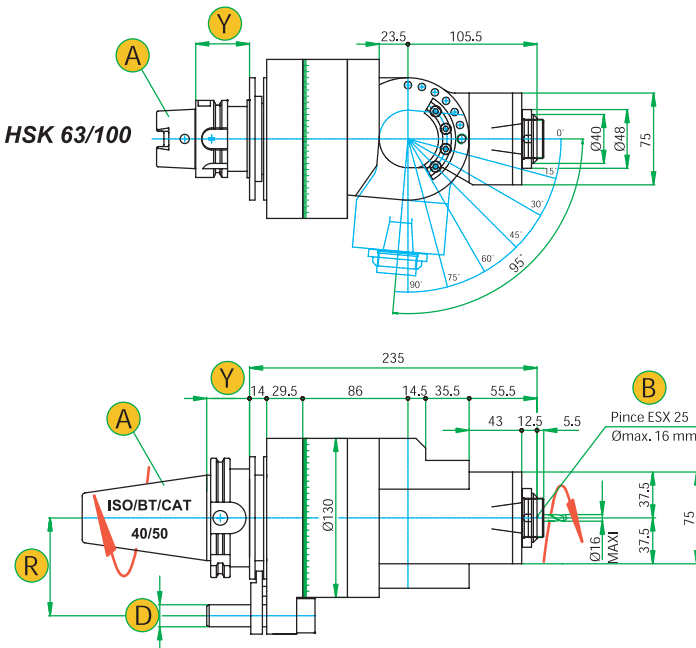
voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		kg
5000 t/min u/min rpm	2.0 kW	12 Nm	1 à 1.6	≈ 12 à 14 kg

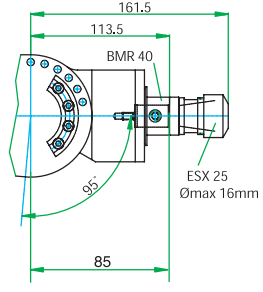


CTAR 16

4'500 rpm
SPECIAL : 5 500 rpm



BMR 40 / ESX 25 Ø Max. 16 mm

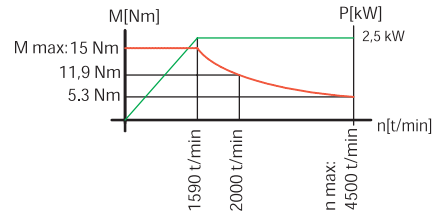


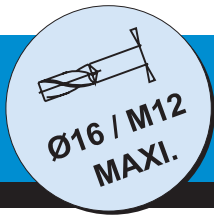
A CHANGEMENT RAPIDE
SCHNELLWECHSEL
QUICK CHANGE

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
4500 t/min u/min rpm	2.5 kW	15 Nm	1 à 1.39	≈ 17 kg

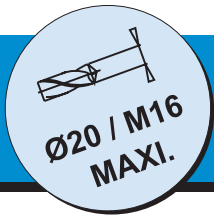
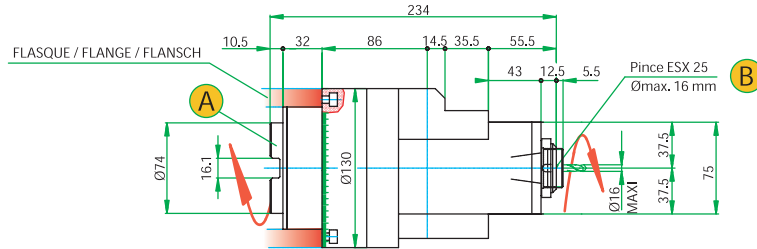




**FLASQUE
FLANGE
FLANSCH**

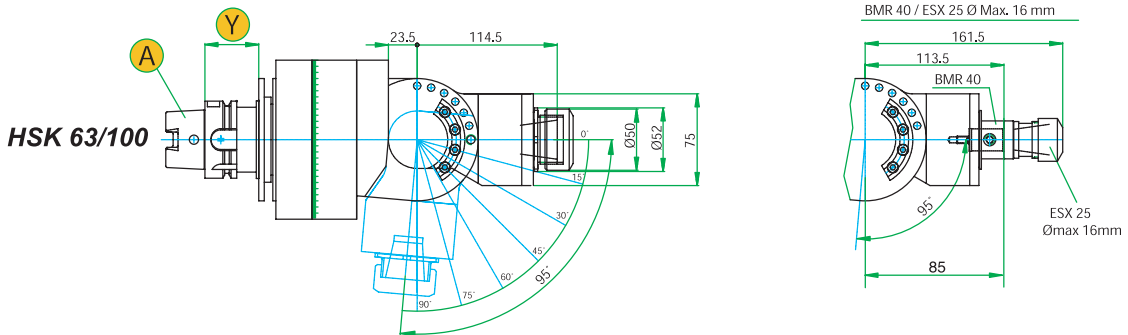
FTAR 16

4'500 rpm
SPECIAL : 5 500 rpm

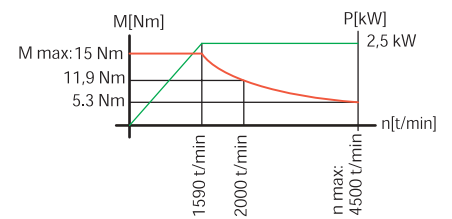
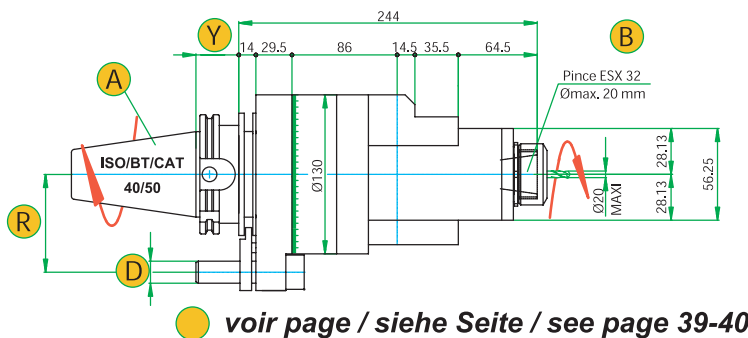


CTAR 20

4'500 rpm
SPECIAL : 5 500 rpm



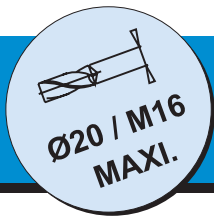
**A CHANGEMENT RAPIDE
SCHNELLWECHSEL
QUICK CHANGE**



voir page / siehe Seite / see page 39-40

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

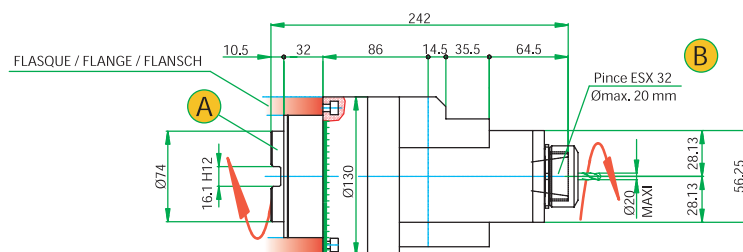
BROCHE SPINDEL SPINDLE	kW	Nm		
4500 t/min u/min rpm	2.5 kW	15 Nm	1 à 1.39	~ 17 kg

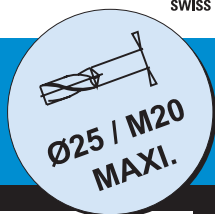


**FLASQUE
FLANGE
FLANSCH**

FTAR 20

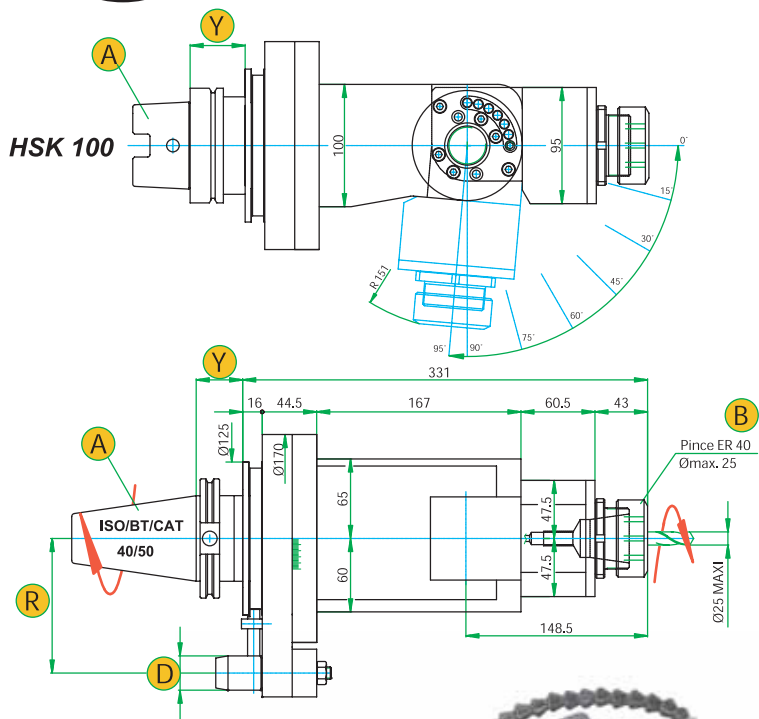
4'500 rpm
SPECIAL : 5 500 rpm



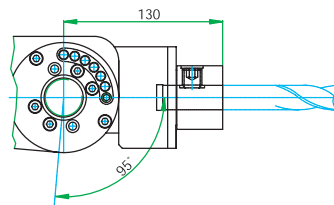


CTAR 25

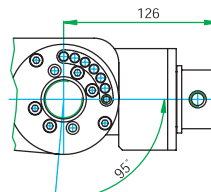
3'000 rpm



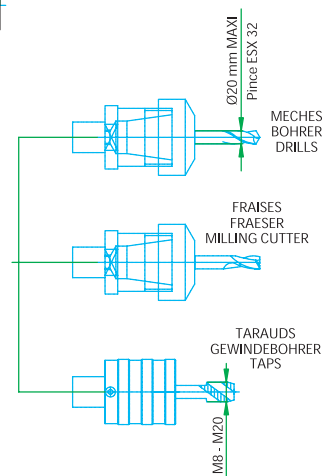
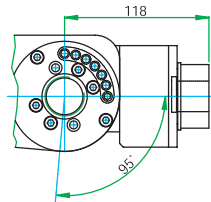
WELDON 20



KM 40



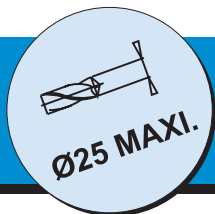
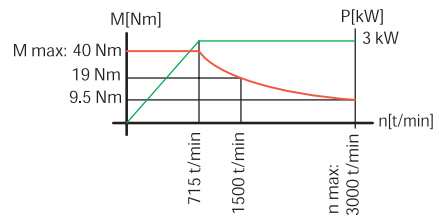
WFLK 225



voir page / siehe Seite / see page 39-40

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

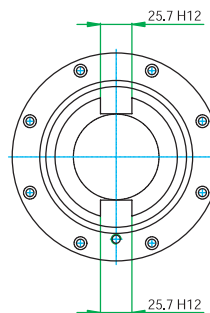
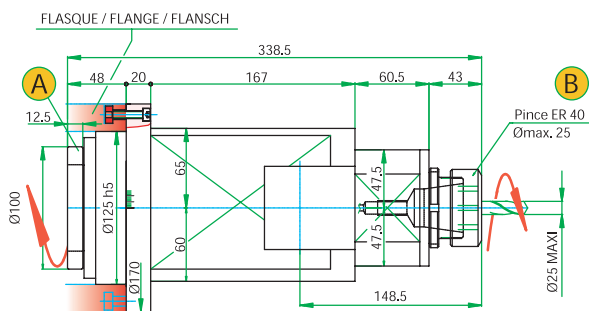
BROCHE SPINDEL SPINDLE	kW	Nm		kg
3000 t/min u/min rpm	3.0 kW	40 Nm	1 à 1	≈ 30 à 33 kg



FLASQUE FLANGE FLANSCH

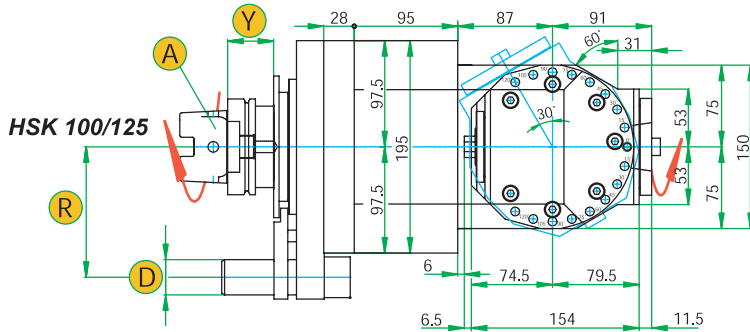
FTAR 25

3'000 rpm



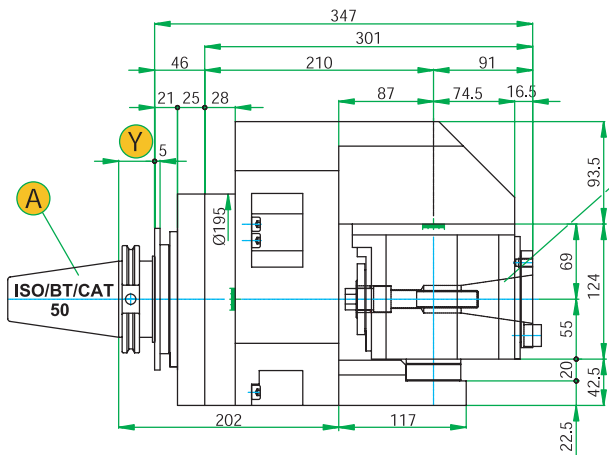
CTAR 40 / CTARH 40

3'000 rpm



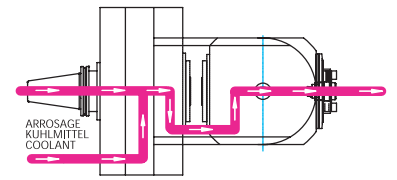
CTAR 40
 GOUPILLE D'INDEXION PAS 15°
 INDEXIERUNGSTIFT TEILUNG 15°
 LOCATION PIN THREAD 15°

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



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

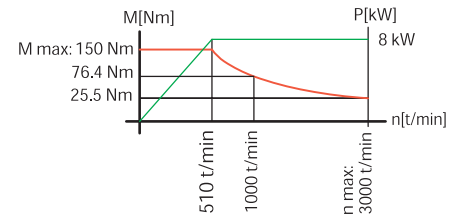
HSK 63 SUR DEMANDE
 AUF ANFRAGE - ON REQUEST



ARROSAGE CENTRAL
 INNERE KÜHLMITTELZUFUHR
 COOLANT THROUGH CENTRE

voir page / siehe Seite / see page 39-40

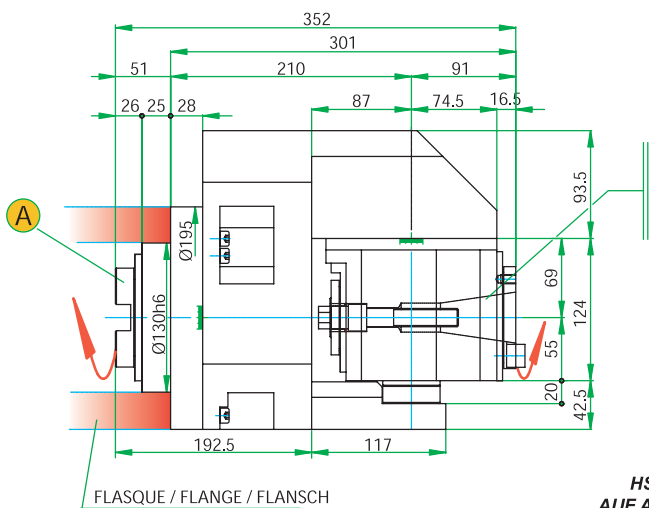
BROCHE SPINDEL SPINDLE	kW	Nm		
	3000 t/min u/min rpm	8.0 kW	150 Nm	1 à 1.5



FLASQUE
 FLANGE
 FLANSCH

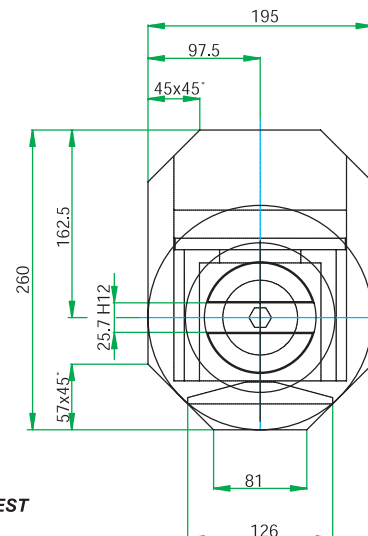
FTAR 40 / FTARH 40

3'000 rpm



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

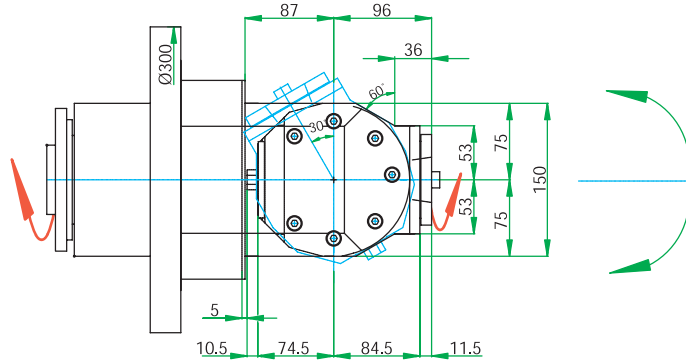
HSK 63 SUR DEMANDE
 AUF ANFRAGE - ON REQUEST



FTAR 40 - 2.5 / FTARH 40 - 2.5

4'500 rpm

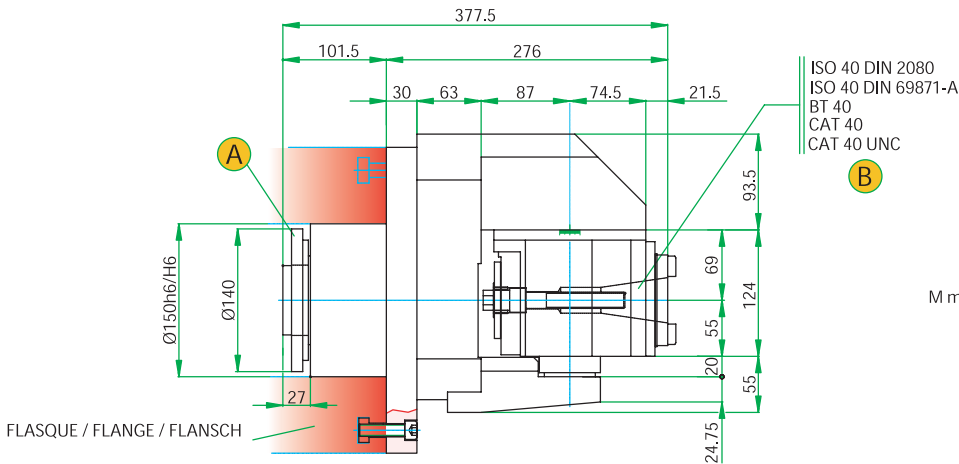
Voir / siehe / see
CTAR 40



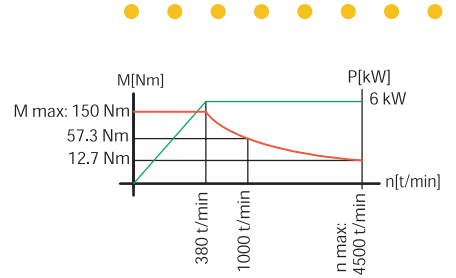
CTAR 40
GOUPILLE D'INDEXION PAS 15°
INDEXIERUNGSTIFT TEILUNG 15°
LOCATION PIN THREAD 15°

±120° OU

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



HSK 63 SUR DEMANDE
AUF ANFRAGE - ON REQUEST



voir page / siehe Seite / see page 39-40

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



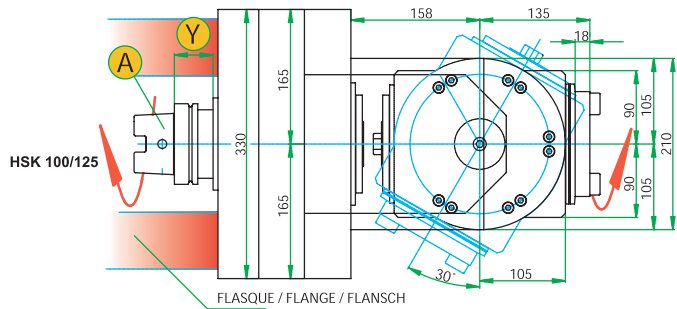
FTAR 40



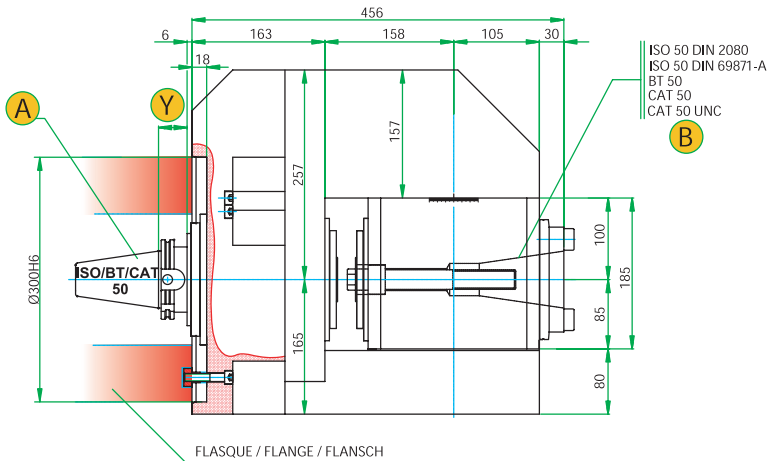
FTAR 50

CTARH 50-20 1'800 rpm

CTARH 50-20-2 3'600 rpm



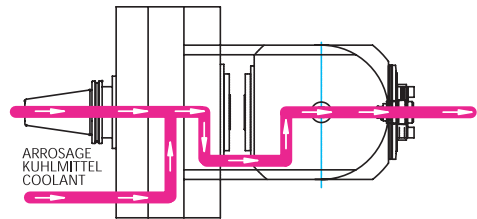
+/- 120° ou
 indexion à denture tous les 1°
 Indexierung mit Verzahnung alle 1°
 location device with teeth every 1°



HSK 80 SUR DEMANDE
 AUF ANFRAGE - ON REQUEST



CTAR 50



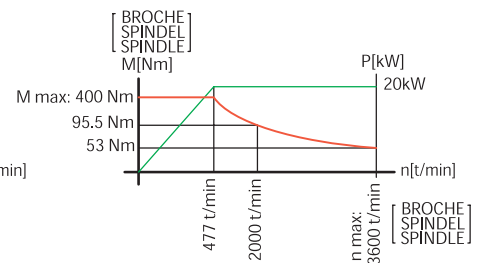
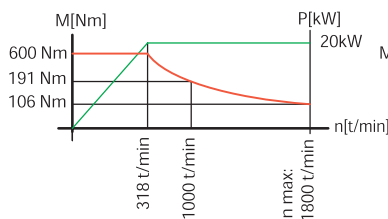
ARROSAGE CENTRAL
 INNERE KÜHLMITTELZUFUHR
 COOLANT THROUGH CENTRE

voir page / siehe Seite / see page 39-40


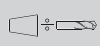

CTAR 50-20

CTAR 50-20-2

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



FLASQUE
FLANGE
FLANSCH
FTARH 50
UP TO 6'000 Nm
 80 kW

TYPE TYP TYPE	PUISSANCE LEISTUNG POWER	COUPLE DREHMOMENT TORQUE	 t/min u/min rpm		 kg
FTARH50-14	14 kW	350 Nm	2000	1 à 1	≈ 140
FTARH50-20	20 kW	600 Nm	1800	1 à 1	≈ 200
FTARH50-20-2	20 kW	400 Nm	3600	1 à 2	≈ 200
FTARH50-30	30 kW	1500 Nm	2000	1 à 1	≈ 650
FTARH50-40	40 kW	3000 Nm	1000	1 à 1	≈ 650
FTARH50-??	?	?	?	?	?

?? = selon vos besoins – Nur Ihre Bedarf – On your needs

FTARH50-NC30

OPTIONS

 Serrage d'outil automatique
 Arrosage central
 Positionnement 360°
 Et +/- 120°
 (manuel ou numérique)

OPTIONEN

 Automatische Werkzeug Spannung
 Innere Kühlmittelzufuhr
 Orientierung 360°
 Und +/- 120°
 (Durch Hand oder numerisch)

OPTIONS

 Automatic tool clamping
 Coolant through
 Orientation 360°
 And +/- 120°
 (By hand or NC)

BROCHES

ISO 50 - ISO 60 - HSK100 etc

SPINDEL

ISO 50 - ISO 60 - HSK100 Usw.

SPINDLE

ISO 50 - ISO 60 - HSK100 etc

ADAPTATION

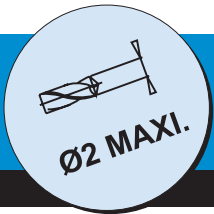
 A tous types de machines
 Automatique
 Via station pick-up

ANPASSUNG

 Für alle Maschinen
 Automatische Indexierung
 Nach Pick-Up Station

ADAPTATION

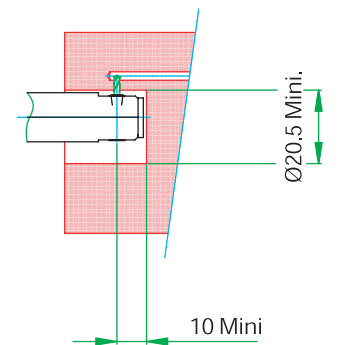
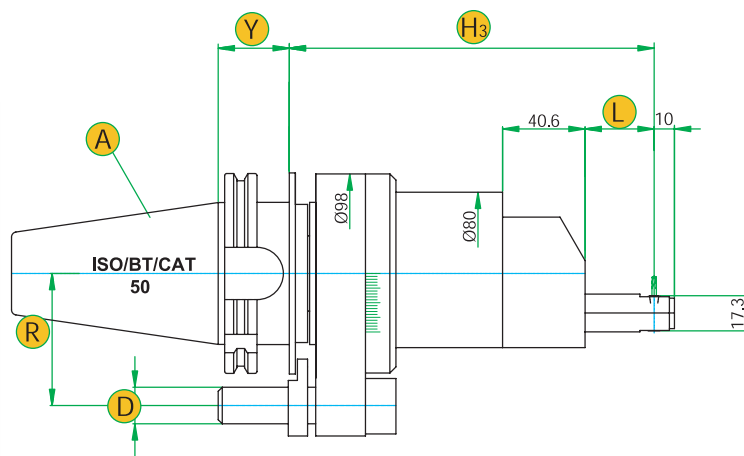
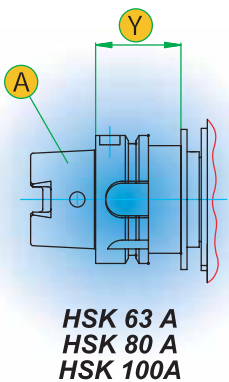
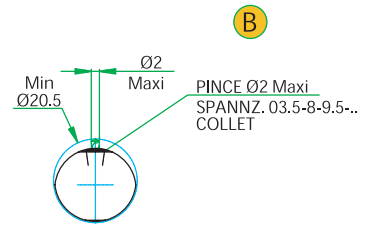
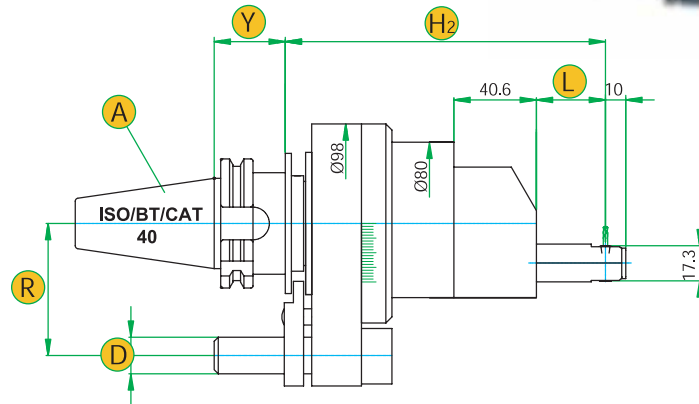
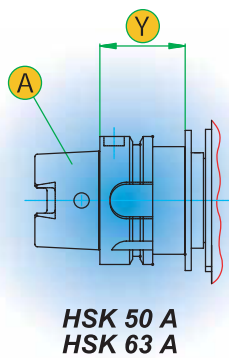
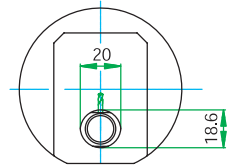
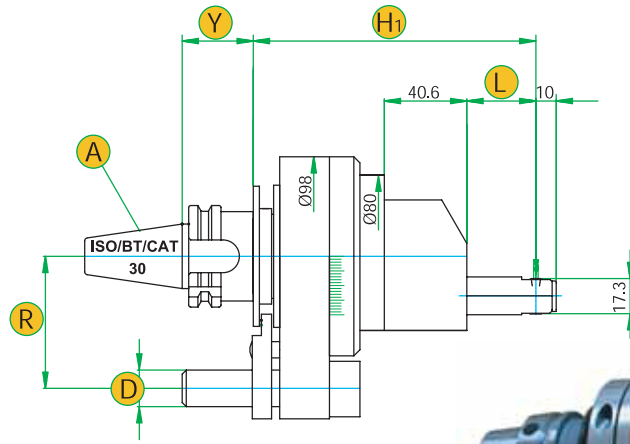
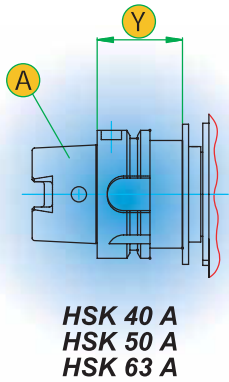
 All type of machine
 Automatic
 On pick-up station

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

8'000 rpm

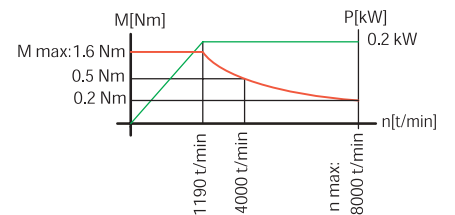
POSSIBILITE
12'000 RPM
SUR DEMANDE

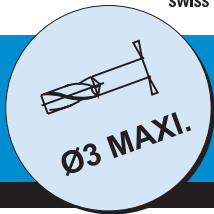


	L	H1	H2	H3
L1	34	139.1	157.6	179.6
L2	49.5	154.6	173.1	195.6
L3	65	170.1	188.6	210.6
L4	80	185.1	203.6	225.6

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
8000 $\frac{r}{min}$ $\frac{u}{min}$ rpm	0.2 kW	1.6 Nm	1 à 2.5	≈ 3 à 4 kg

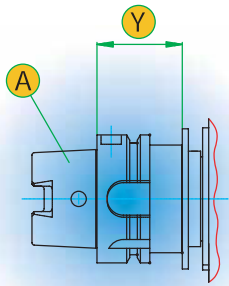




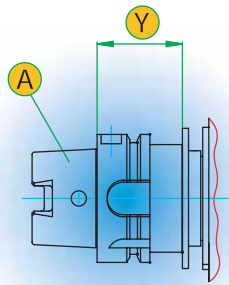
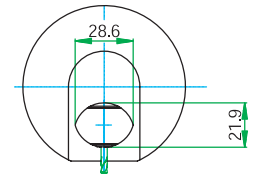
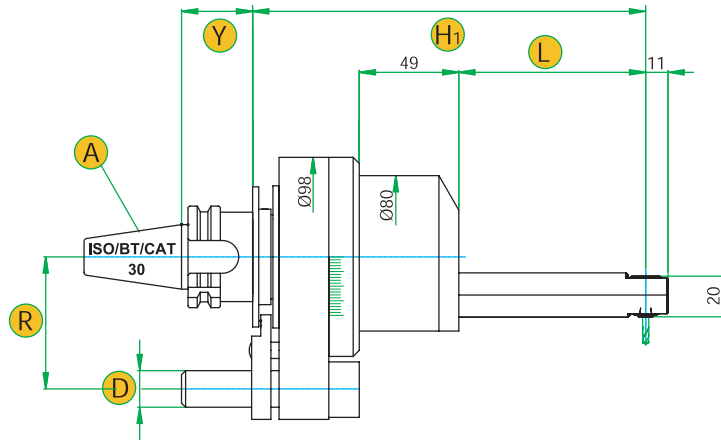
CDP 03 L1/L2/L3/L...

6'000 rpm

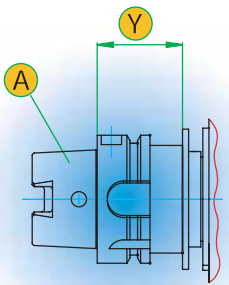
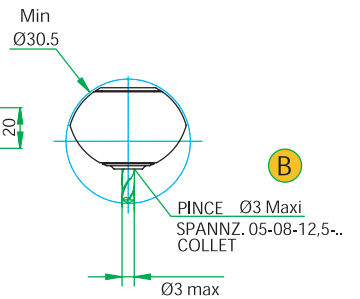
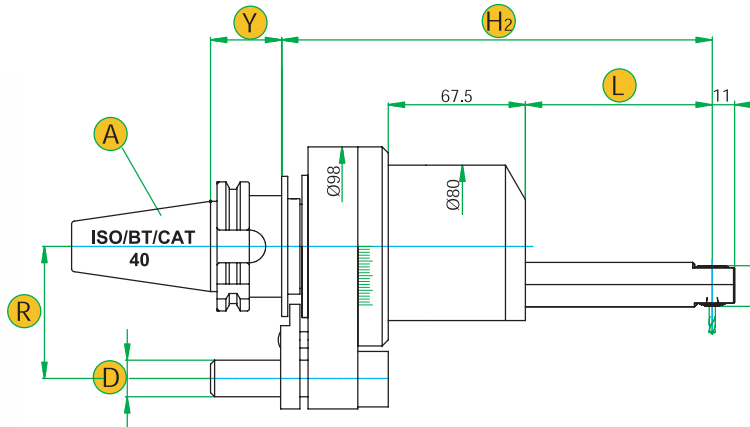
POSSIBILITE
15'000 RPM
SUR DEMANDE



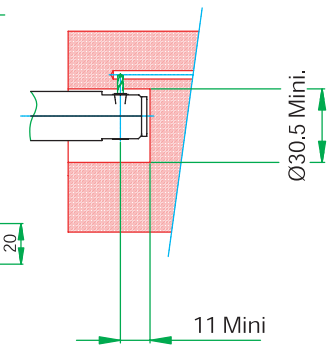
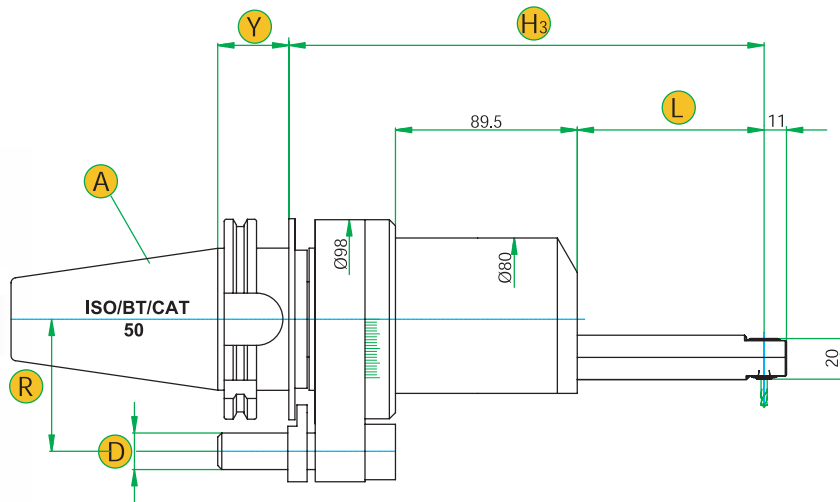
HSK 40 A
HSK 50 A
HSK 63 A



HSK 50 A
HSK 63 A



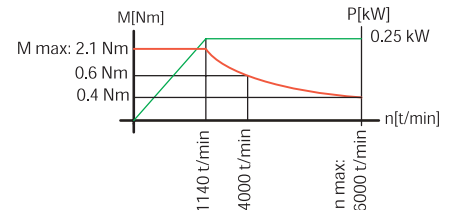
HSK 63 A
HSK 80 A
HSK 100 A

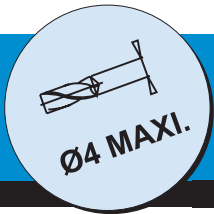


	L	H1	H2	H3
L1	50	151.5	170	192
L2	71	172.5	191	213
L3	79.5	181	199.5	221.5
L4	92	193.5	212	234
L5	112	214.5	233	255
L6	134	235.5	254	276

voir page / siehe Seite / see page 39-40

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

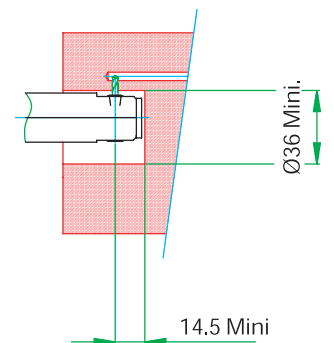
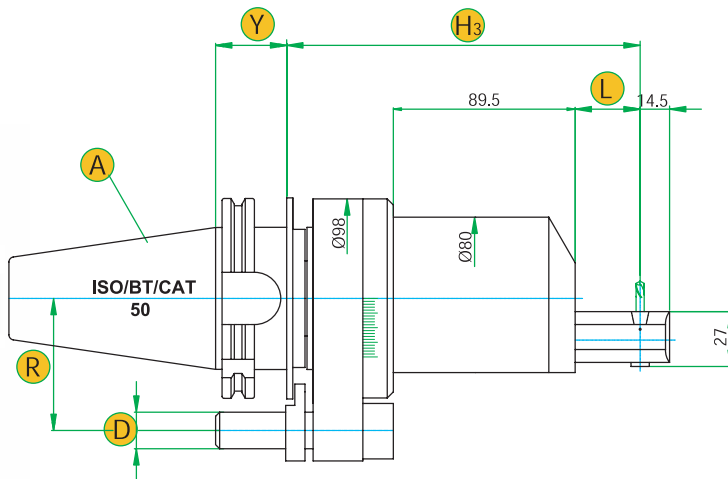
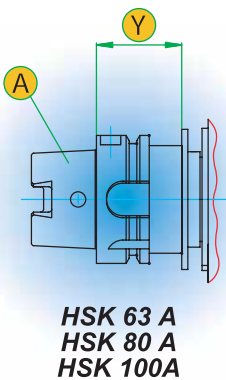
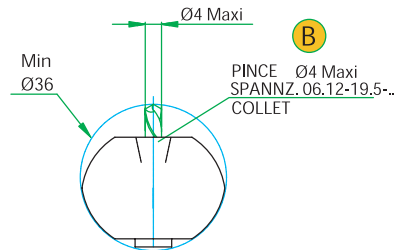
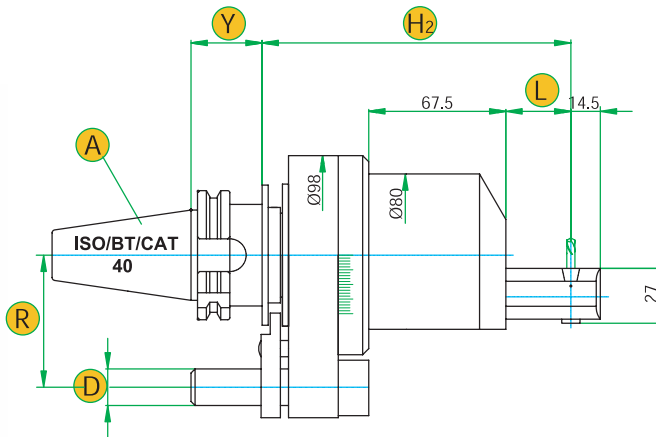
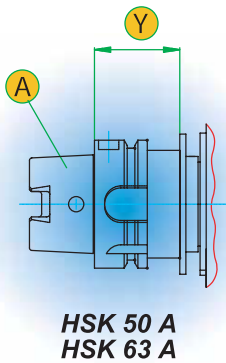
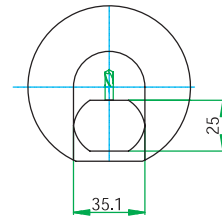
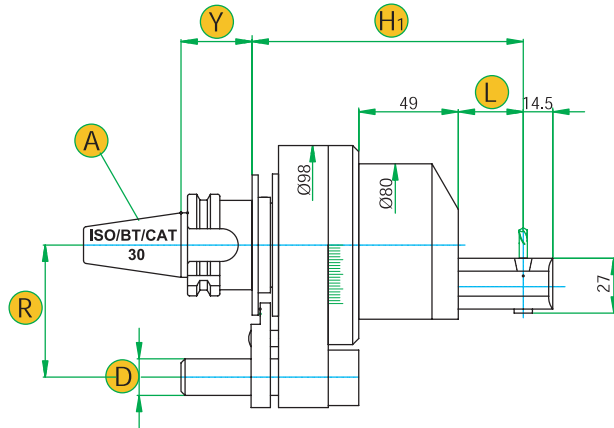
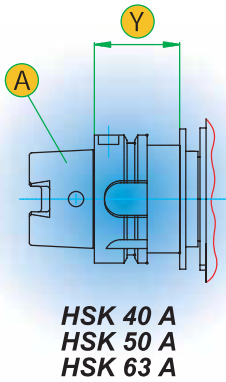




CDP 04 L1/L2/L3/L...

8'000 rpm

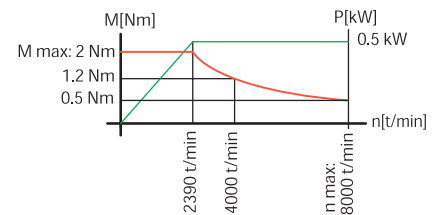
POSSIBILITE
15'000 RPM
SUR DEMANDE

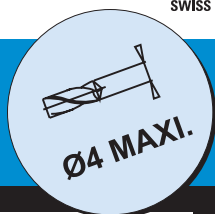


	L	H1	H2	H3
L1	32	133.5	152	174
L2	56	157.5	176	198
L3	80	181.5	200	222
L4	104	205.5	224	246
L6	152	253.5	272	294

voir page / siehe Seite / see page 39-40

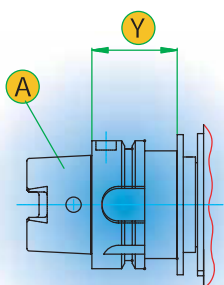
BROCHE SPINDEL SPINDLE	kW	Nm		
8000 t/min u/min rpm	0.5 kW	2.0 Nm	1 à 3	≈ 3.5 à 4.5 kg



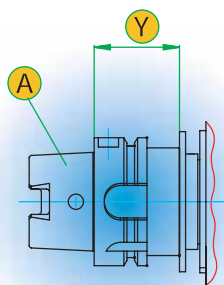
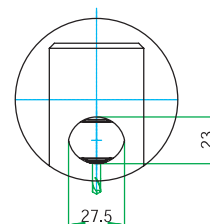
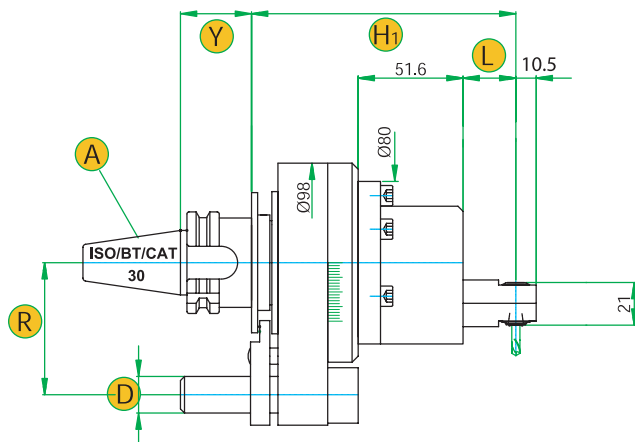


CDP 041 L1/L2/L3/L...

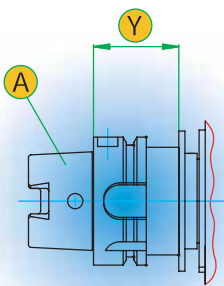
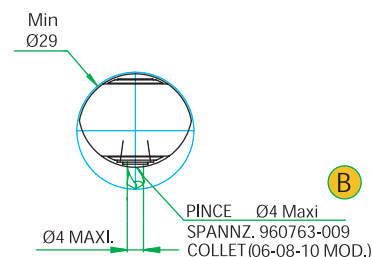
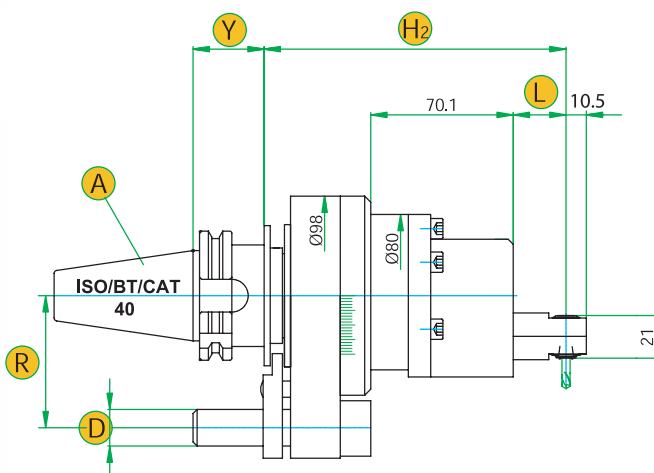
10'000 rpm



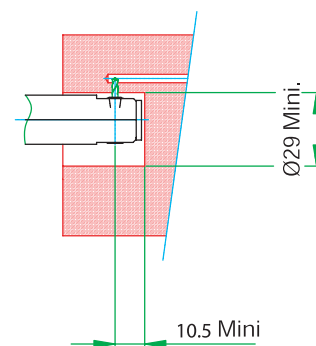
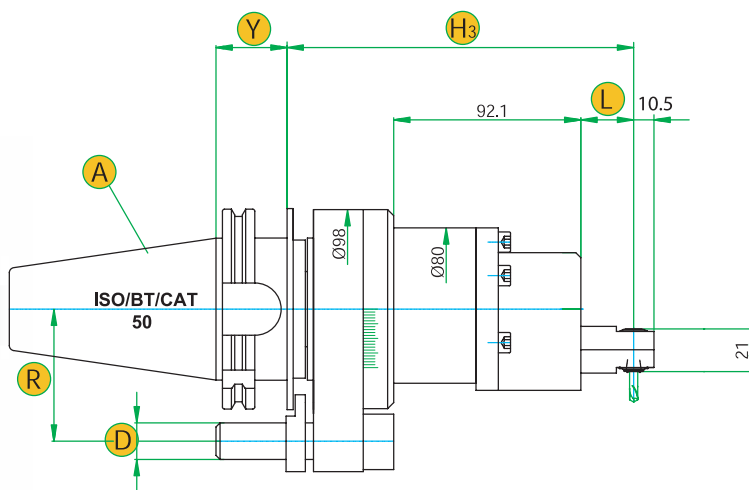
HSK 40 A
HSK 50 A
HSK 63 A



HSK 50 A
HSK 63 A



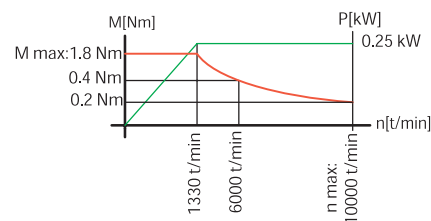
HSK 63 A
HSK 80 A
HSK 100 A

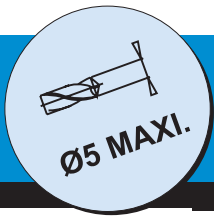


	L	H1	H2	H3
L1	26	130.1	148.6	170.6
L2	50	154.1	172.6	194.6
L3	74	178.1	196.6	218.6
L4	96.5	200.6	219.1	241.1

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
	10000 t/min u/min rpm	0.25 kW	1.8 Nm	1 à 2.5 ≈ 3.5 à 4.5 kg

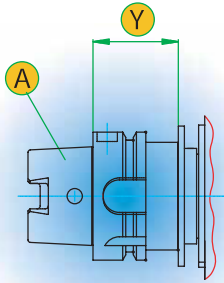




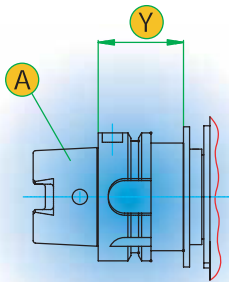
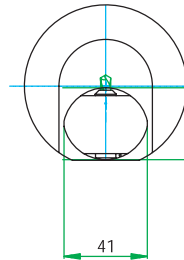
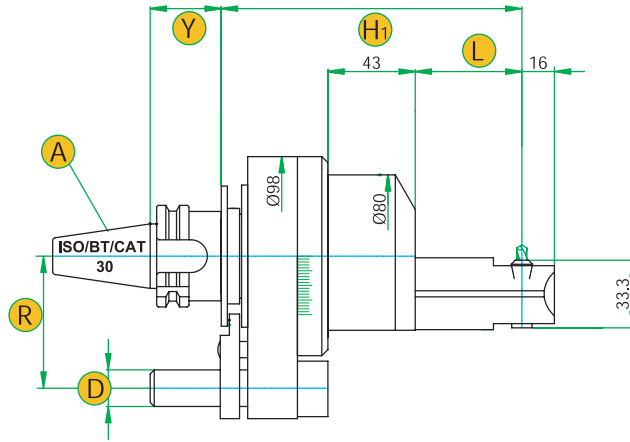
CDP 05 L1/L2/L3/L...

5'400 rpm

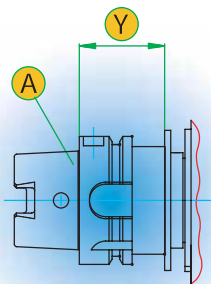
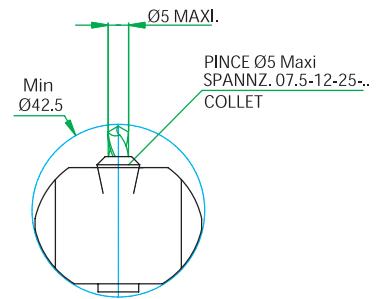
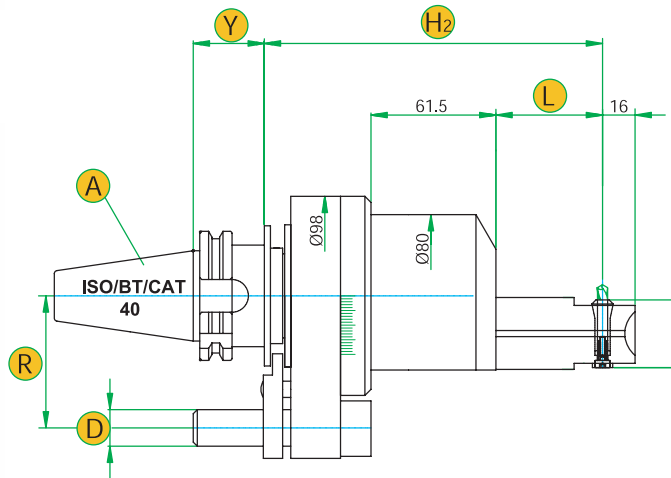
POSSIBILITE
10'000 RPM
SUR DEMANDE



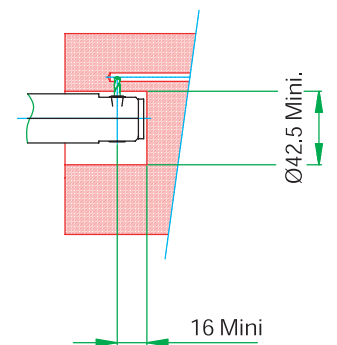
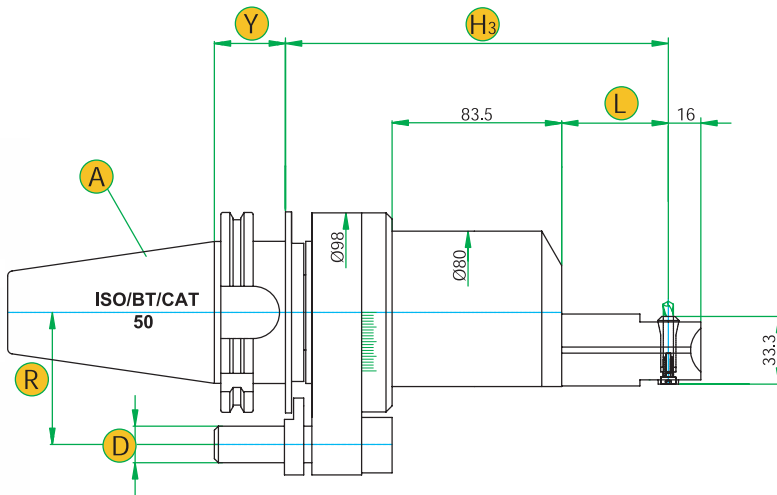
HSK 40 A
HSK 50 A
HSK 63 A



HSK 50 A
HSK 63 A



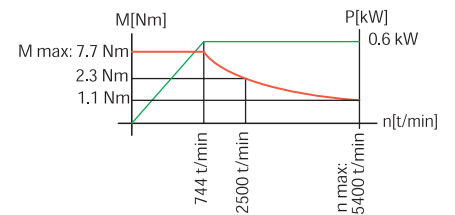
HSK 63 A
HSK 80 A
HSK 100A

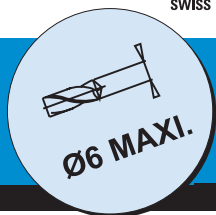


	L	H1	H2	H3
L1	52.5	148	166.5	188.5
L2	82.5	178	196.5	218.5
L3	112.5	208	226.5	248.5
L4	142.5	238	256.5	278.5
L5	172	267.5	286	308

voir page / siehe Seite / see page 39-40

BROCHE SPINDEL SPINDLE	kW	Nm		
	5400 t/min u/min rpm	0.6 kW	7.7 Nm	1 à 1.6 ≈ 4 à 7 kg

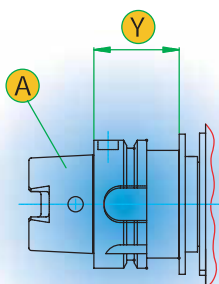




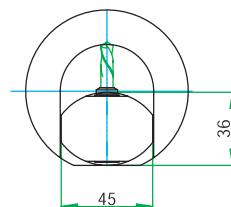
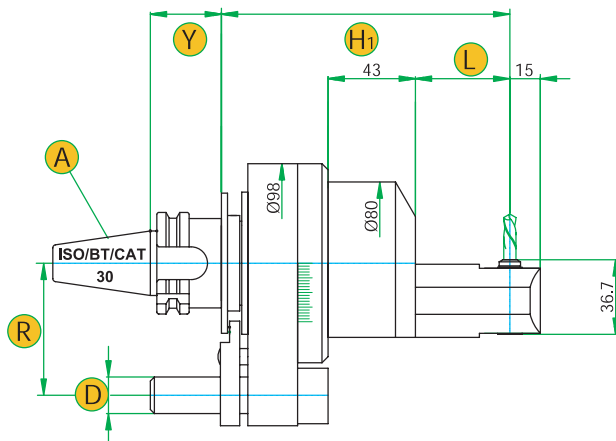
CDP 06 L1/L2/L3/L...

8'000 rpm

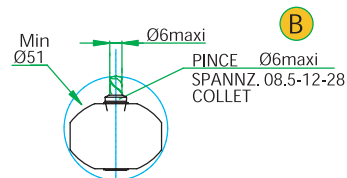
POSSIBILITE
10'000 RPM
SUR DEMANDE



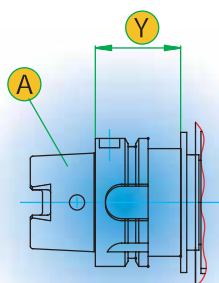
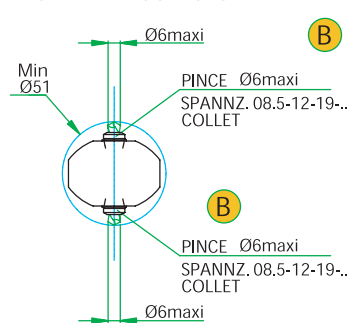
HSK 40 A
HSK 50 A
HSK 63 A



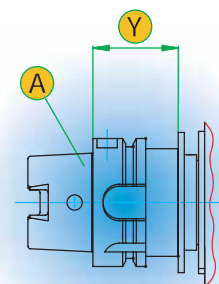
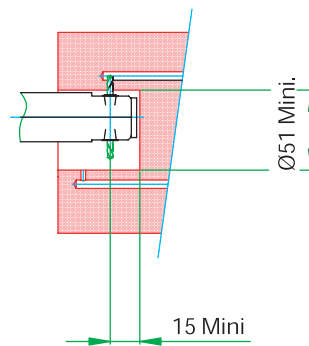
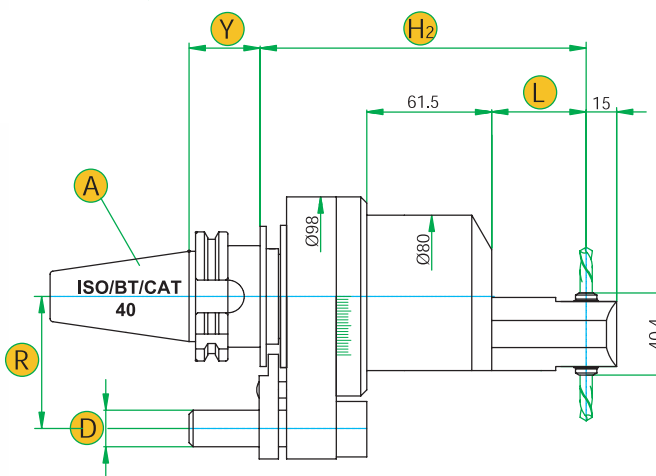
BROCHE 1 SORTIE
SPINDEL 1 AUSGANG
SPINDLE 1 OUTPUT



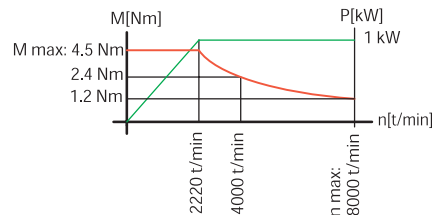
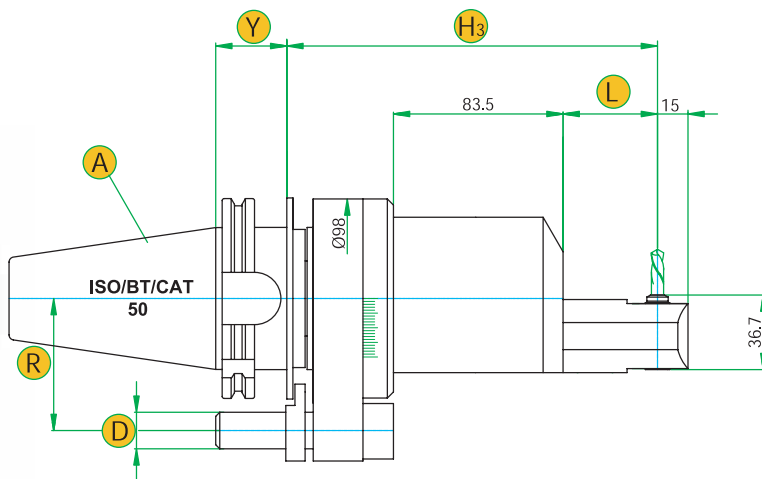
BROCHE 2 SORTIES
SPINDEL 2 AUSGÄNGE
SPINDLE 2 OUTPUTS



HSK 50 A
HSK 63 A



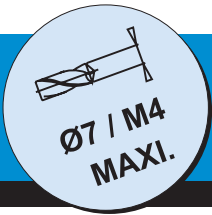
HSK 63 A
HSK 80 A
HSK 100 A



voir page / siehe Seite / see page 39-40

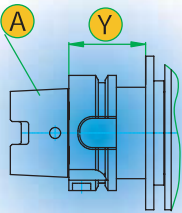
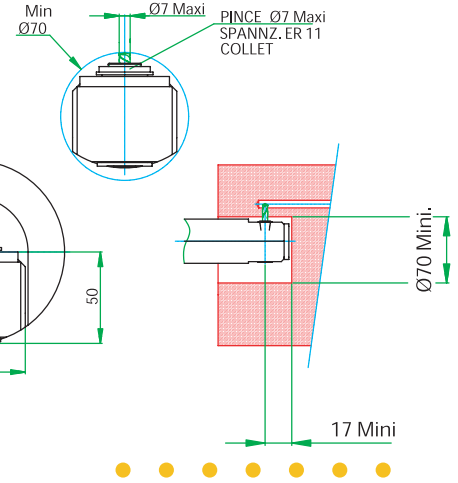
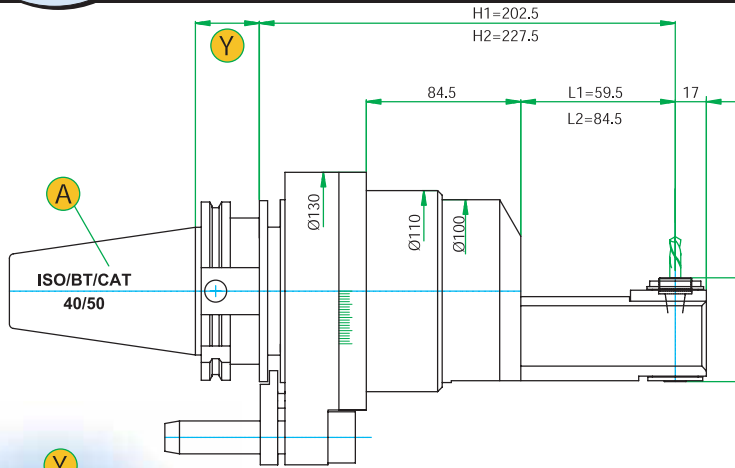
	L	H1	H2	H3
L1	46.5	142	160.5	182.5
L2	74.5	170	188.5	210.5
L3	102.5	198	216.5	238.5

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



CDP 07 L1/L2/L...

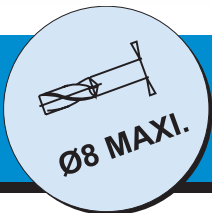
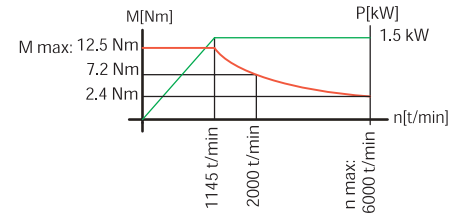
6'000 rpm



HSK 63/80/100

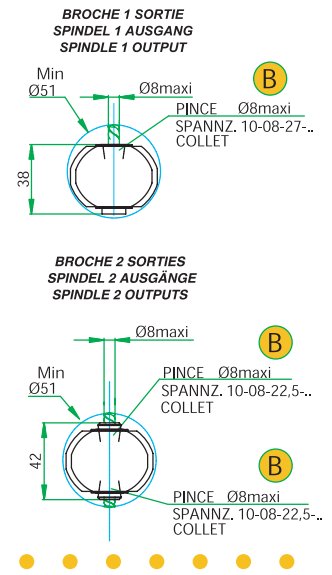
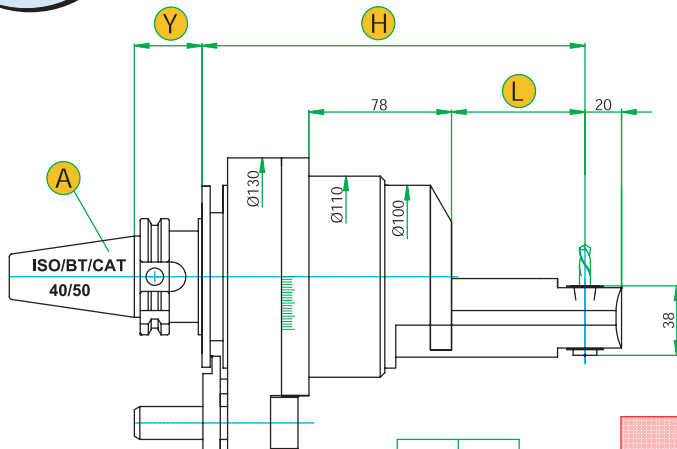
voir page / siehe Seite / see page 39-40

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

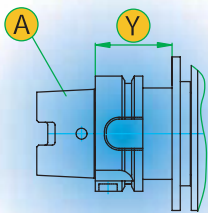


CDP 08 L1/L2/L3/L...

6'000 rpm



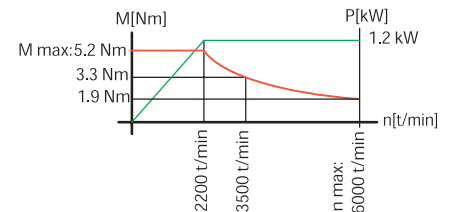
	L	H
L1	73	209.5
L2	105	241.5
L3	125	261.5

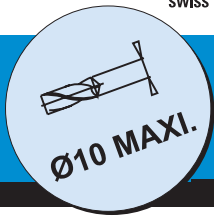


HSK 63/80/100

voir page / siehe Seite / see page 39-40

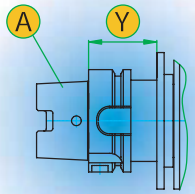
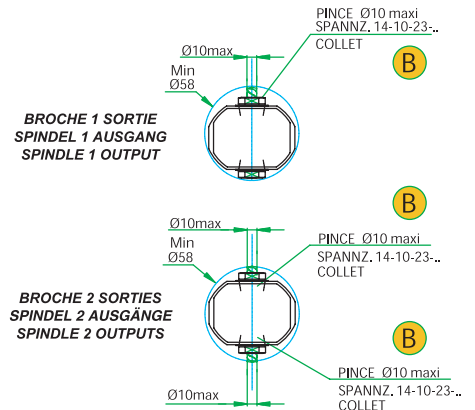
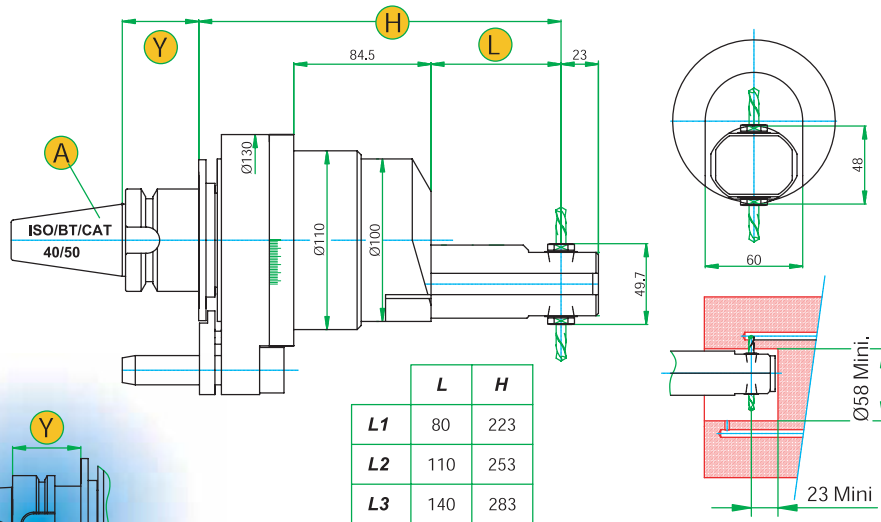
BROCHE SPINDEL SPINDLE	kW	Nm		
6000 t/min u/min rpm	1.2 kW	5.2 Nm	1 à 1.5	≈ 7 à 11 kg





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

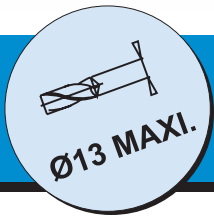
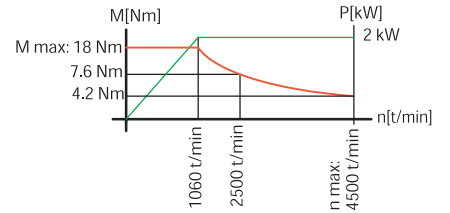
4'500 rpm



HSK 63/80/100

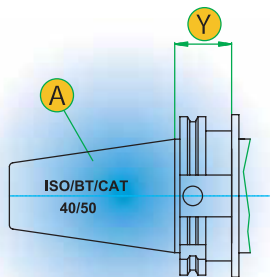
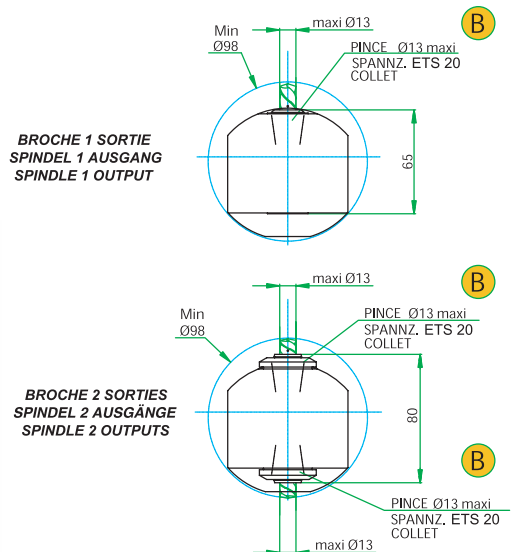
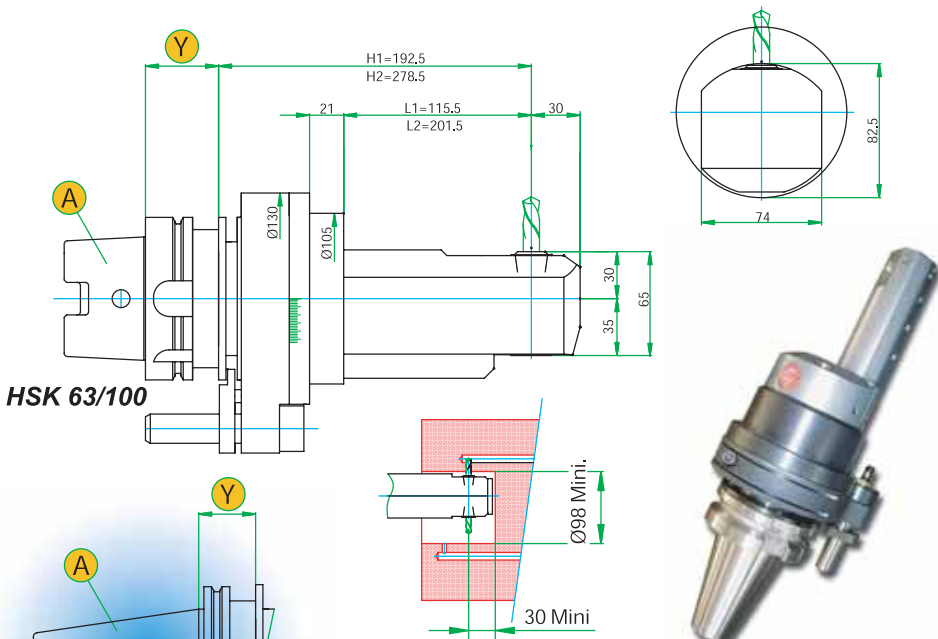
voir page / siehe Seite / see page 39-40

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



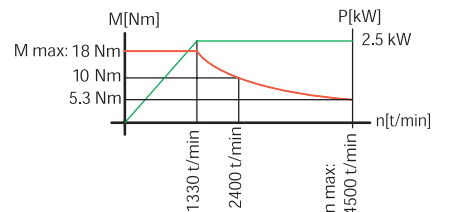
CDP 13 L1/L2/L...

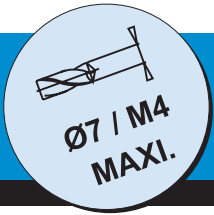
4'500 rpm



voir page / siehe Seite / see page 39-40

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

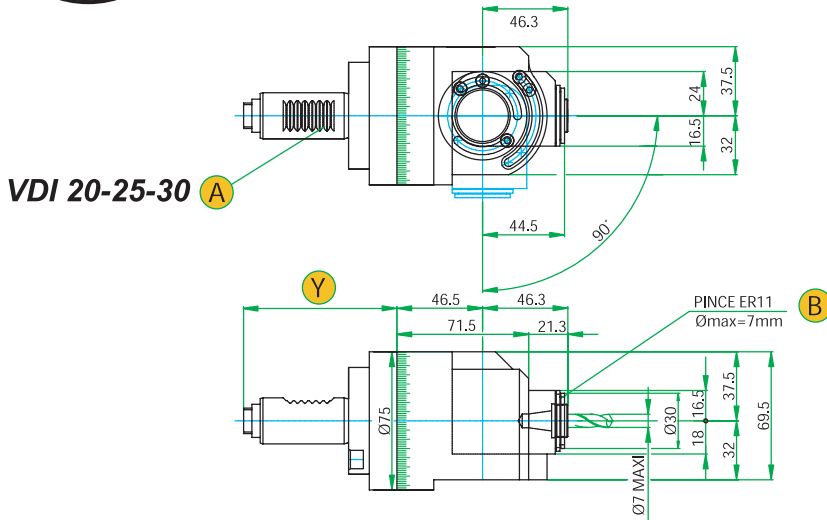




TETE POUR TOUR
KOPF FÜR DREHMASCHINE
HEAD FOR TURNING MACHINE

TTAR 07

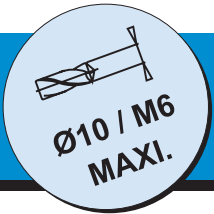
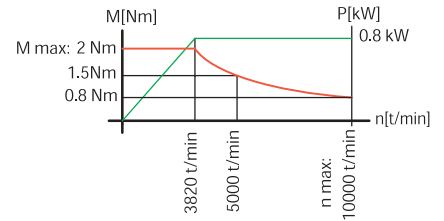
10'000 rpm



Voir / siehe / see
CTAR 07

voir page / siehe Seite / see page 39-40

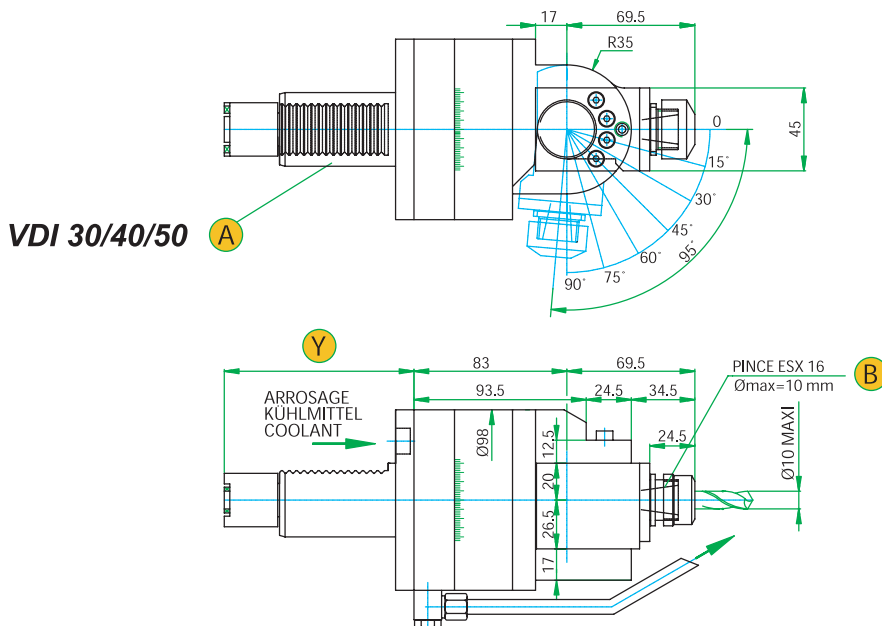
BROCHE SPINDEL SPINDLE	kW	Nm		
10000 t/min u/min rpm	0.8 kW	2.0 Nm	1 à 3.2	≈ 3 kg



TETE POUR TOUR
KOPF FÜR DREHMASCHINE
HEAD FOR TURNING MACHINE

TTAR 10

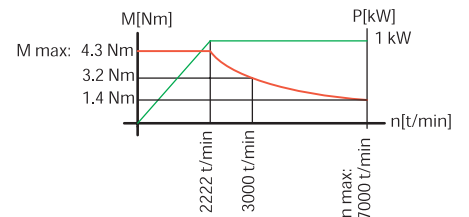
7'000 rpm

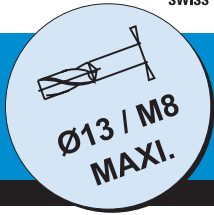


Voir / siehe / see
CTAR 10

voir page / siehe Seite / see page 39-40

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

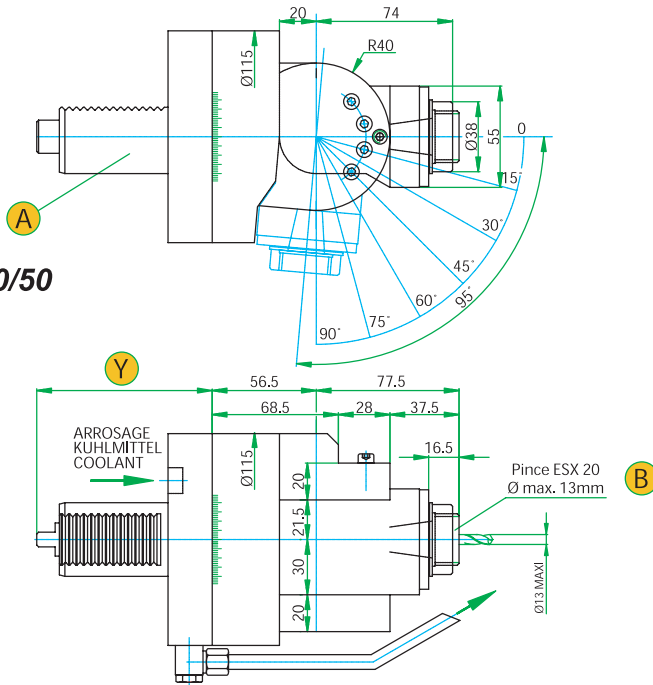




TETE POUR TOUR
KOPF FUR DREHMASCHINE
HEAD FOR TURNING MACHINE

TTAR 13

5'000 rpm
SPECIAL : 6 000 rpm

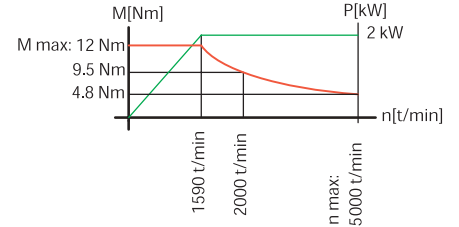


VDI 30/40/50

Voir / siehe / see
CTAR 13

voir page / siehe Seite / see page 39-40

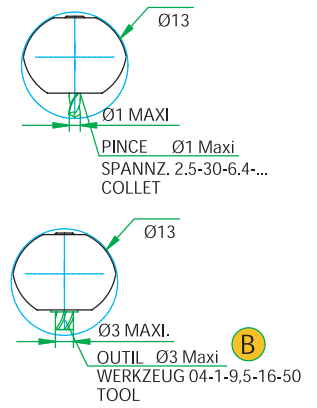
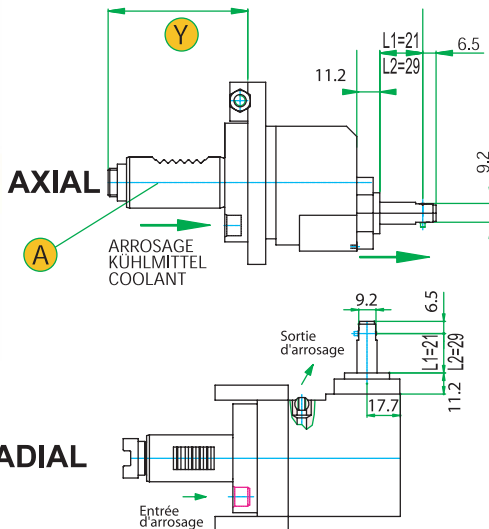
BROCHE SPINDEL SPINDLE	kW	Nm		
5000 t/min u/min rpm	2.0 kW	12 Nm	1 à 1.6	≈ 11 kg



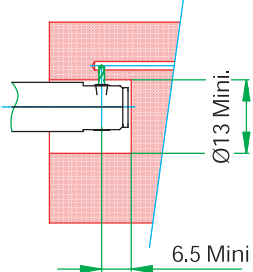
TETE POUR TOUR
KOPF FUR DREHMASCHINE
HEAD FOR TURNING MACHINE

TDC 03 L1/L2

7'500 rpm

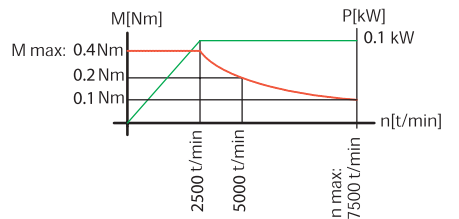


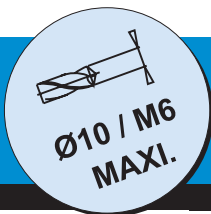
VDI 25



voir page / siehe Seite / see page 39-40

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



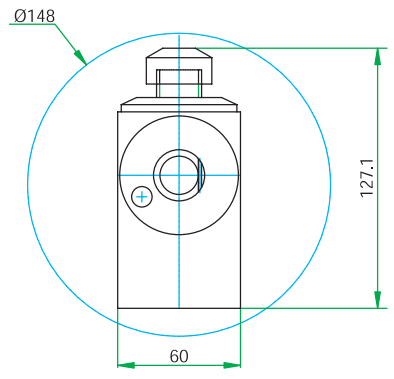
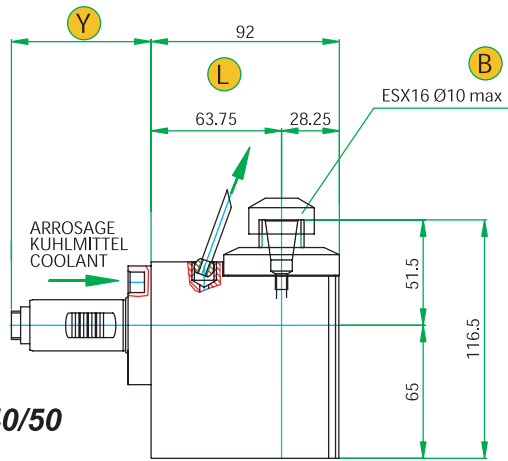


TETE POUR TOUR
KOPF FÜR DREHMASCHINE
HEAD FOR TURNING MACHINE

TTE 10X5

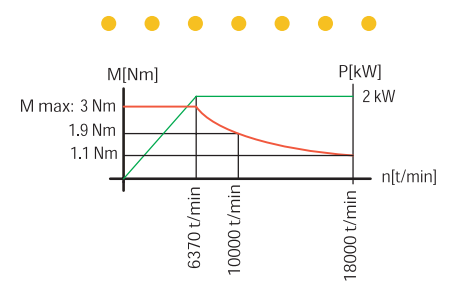
18'000 rpm

VDI 25/30/40/50



voir page / siehe Seite / see page 39-40

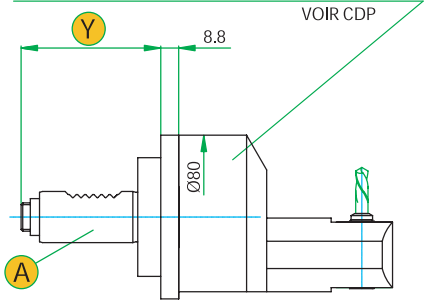
BROCHE SPINDEL SPINDLE	kW	Nm		
18000 t/min u/min rpm	2.0 kW	3.0 Nm	1 à 5	≈ 4 à 6 kg



TETE POUR TOUR
KOPF FÜR DREHMASCHINE
HEAD FOR TURNING MACHINE

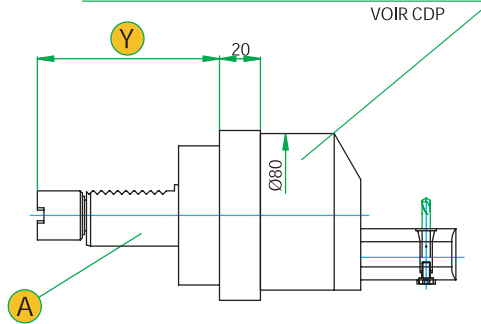
TDP 02/03/04/05/06

MODULE CDP 02 / CDP 03 / CDP 04 / CDP 05 / CDP 06



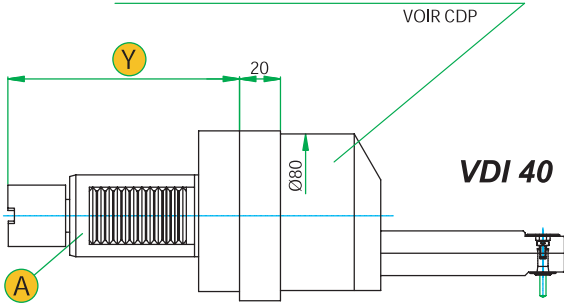
VDI 25

MODULE CDP 02 / CDP 03 / CDP 04 / CDP 05 / CDP 06

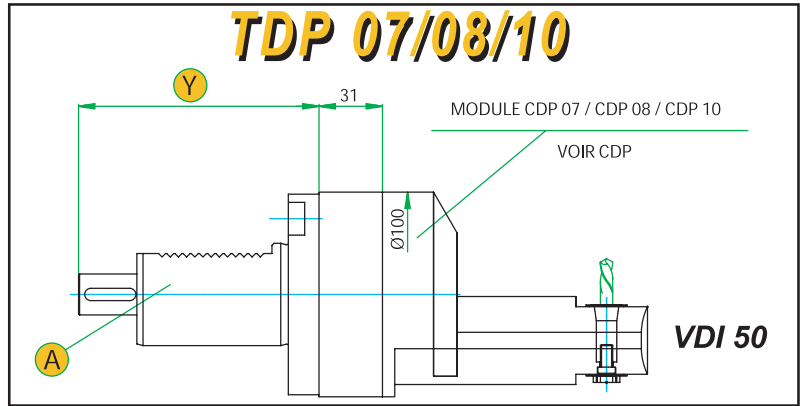


VDI 30

MODULE CDP 02 / CDP 03 / CDP 04 / CDP 05 / CDP 06



VDI 40



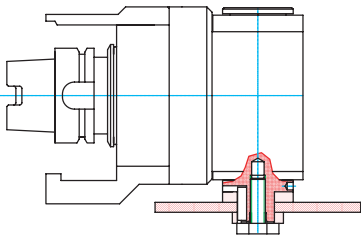
VDI 50

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

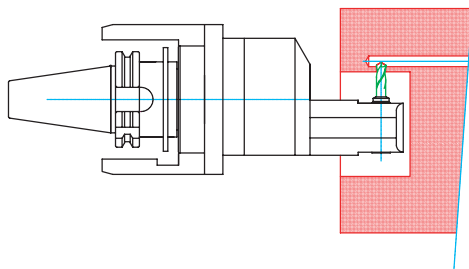
PROGRAMME - PROGRAMM - PROGRAM CHIRON

POUR - FÜR - FOR CHIRON

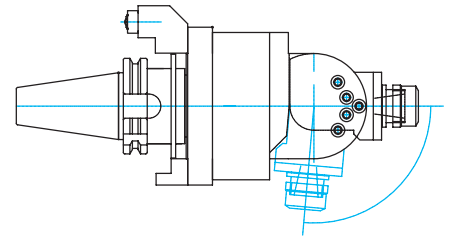
FZ 08 / FZ 15 / FZ 18 / DZ 18 / FZ 12 / DZ 12 / FZ 22 / DZ 22 / FZ 28 / DZ 28



TETE DE SCIAGE
SÄGEKOPF
SAWING HEAD



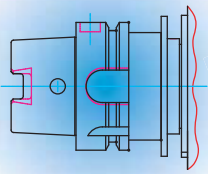
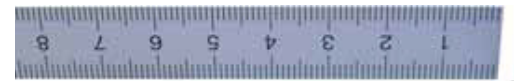
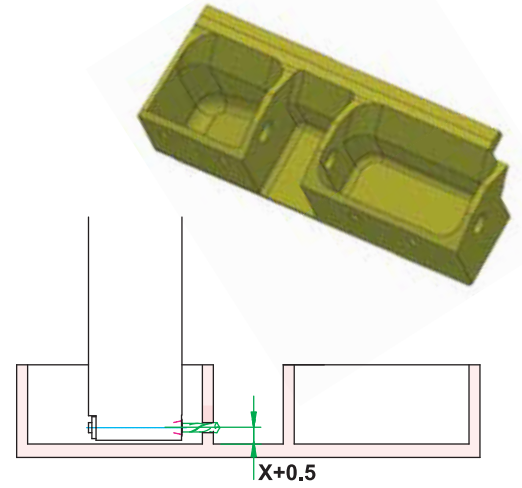
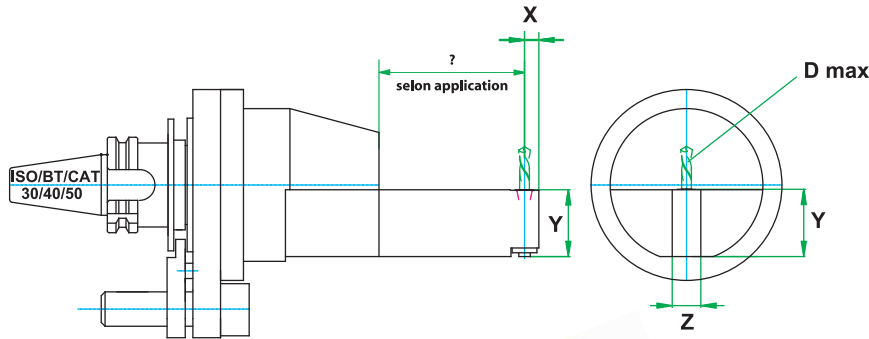
TETES PERCEAGE FRAISAGE TARAUDAGE
KÖPFE ZUM BOHREN, FRÄSEN, GEWINDESCHNEIDEN
HEADS FOR DRILLING, MILLING AND TAPPING



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



**PROGRAMME - PROGRAMM - PROGRAM
AEROSPACE**



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

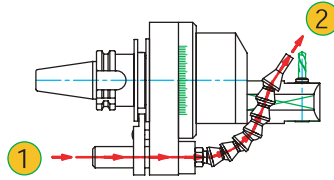


TYPE TYP TYPE	X	Y	Z	D max	PUISSANCE LEISTUNG POWER	COUPLE DREHMOMENT TORQUE
SLA-03	6.5 mm	29 mm	13 mm	Ø 3 mm	0.5 kW	1 Nm
SLA-04	7.5 mm	35 mm	15 mm	Ø 4 mm	0.5 kW	2.3 Nm
SLA-06	10 mm	54 mm	20 mm	Ø 6 mm	0.8 kW	6 Nm
SLA-08	12 mm	68 mm	32 mm	Ø 8 mm	2 kW	8 Nm
SLA-12	11 mm	125 mm	58 mm	Ø 12 mm	1.5 kW	6.5 Nm

ARROSAGE - KÜHLMITTEL - COOLANT

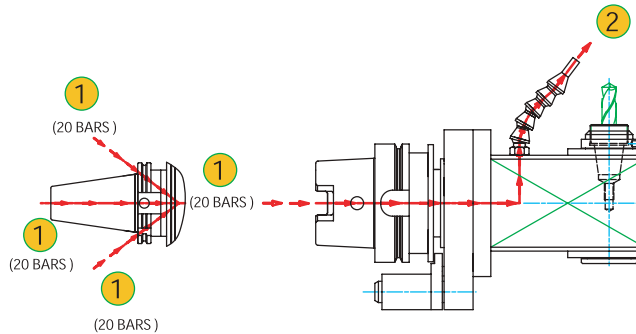
① ARRIVEE D'ARROSAGE KÜHLMITTEL EINGANG COOLANT INPUT ② SORTIE D'ARROSAGE KÜHLMITTEL AUSGANG COOLING OUTPUT

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



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

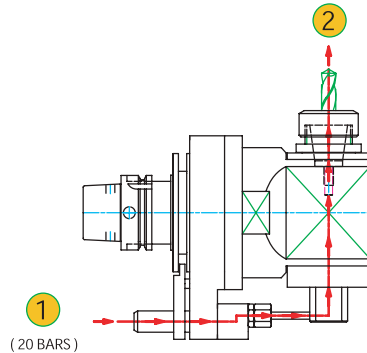
Entrée par le centre, sortie extérieur
Eingang durch Zentrum, Ausgang aussen
Inlet thru the centre, outlet outside



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

... SUR DEMANDE
AUF ANFRAGE / ON REQUEST

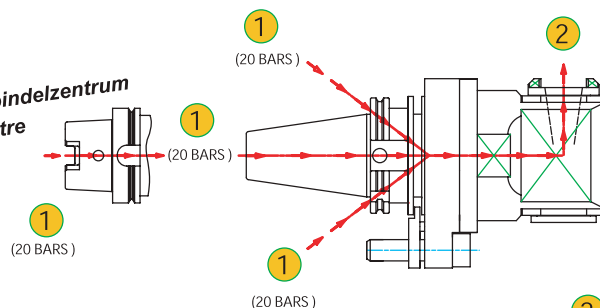
Entrée par l'indexion, sortie centre broche
Eingang über Indexierung, Ausgang durch Spindelzentrum
Inlet thru location device, outlet thru spindle centre



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

... SUR DEMANDE
AUF ANFRAGE / ON REQUEST

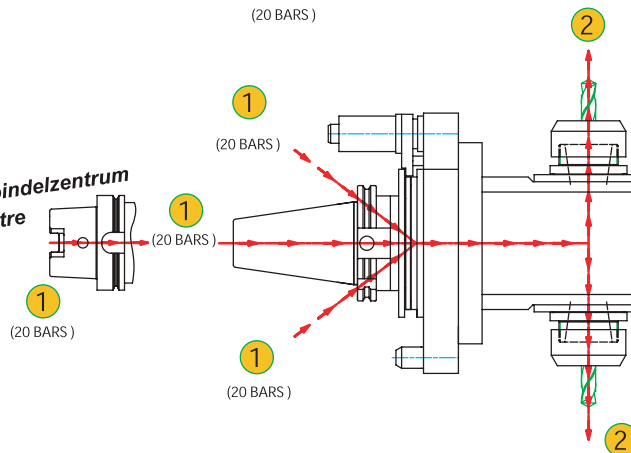
Entrée par le centre, sortie centre broche
Eingang durch Zentrum, Ausgang durch Spindelzentrum
Inlet thru the centre, outlet thru spindle centre



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

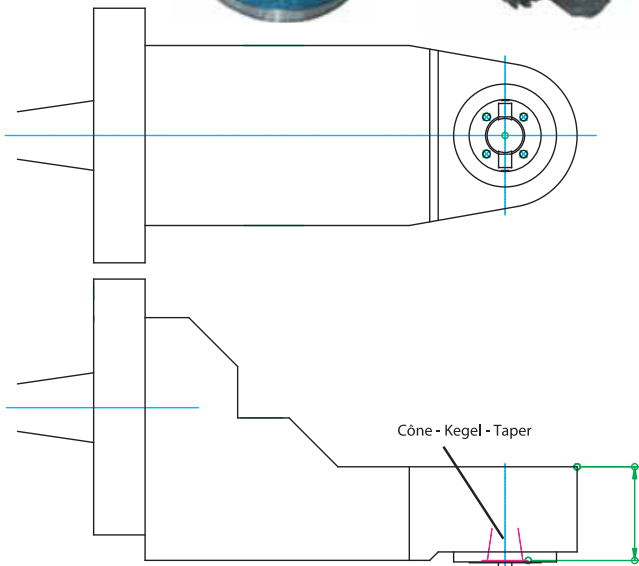
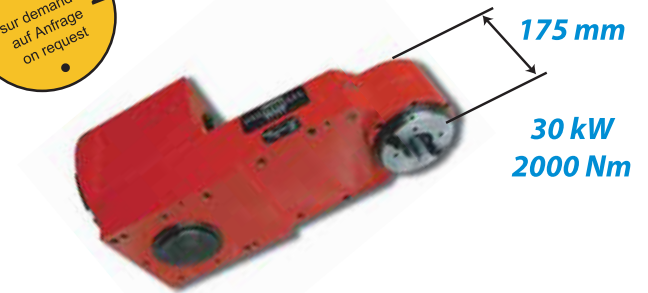
Miniature - Miniatur - Small ...



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



2000 kg - 100 kW



TYPE TYP TYPE	PUISSANCE LEISTUNG POWER	COUPLE DREHMOMENT TORQUE à la broche	X	CONE KEGEL TAPER
SLP40-15	15 kW	450 Nm	120 mm	ISO 40
SLP50-22	22 kW	2200 Nm	170 mm	ISO 50
SLP50-30	30 kW	2000 Nm	185 mm	ISO 50
SLP??	?	?	?	?

?? = selon vos besoins -- Nar Ihre Bedarf -- On your needs

OUTILS TOURNANTS - ANGETRIEBENE WERKZEUGE - DRIVEN TOOLS

**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**

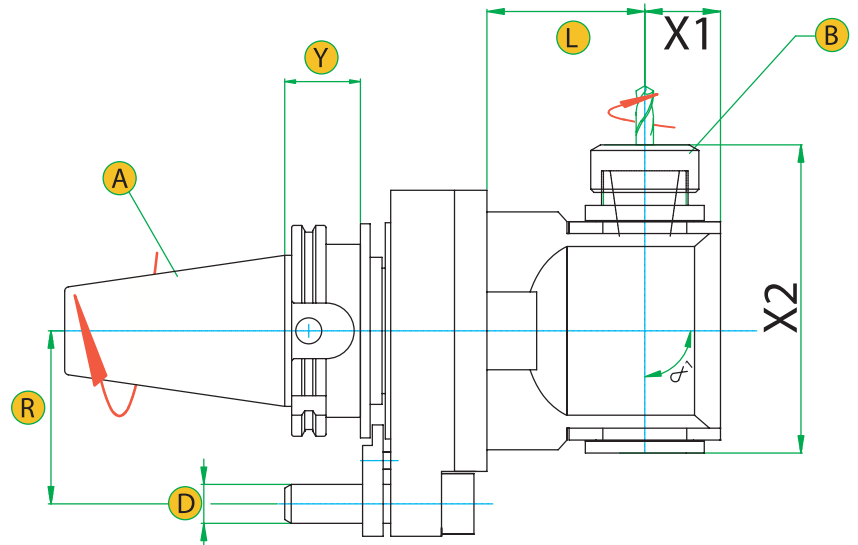


INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN
TECHNICAL INFORMATION A / B / D / L / R / Y

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

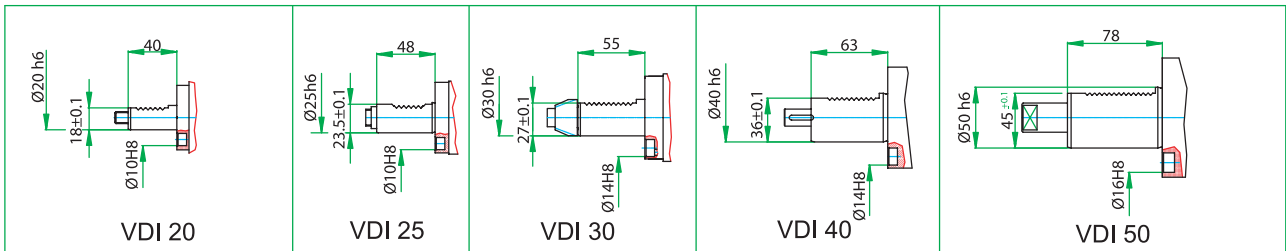
Y SELON TYPE DE CONE ET DE MACHINE
 Y NACH STEIKEGEL UND MASCHINE TYPE
 Y ACCORDING TO SHANK AND MACHINE TYPE



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

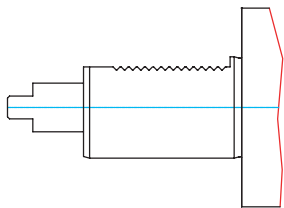
VDI

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 ...

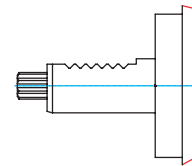


ENTRAINEMENT PAR / ANTRIEB DURCH / DRIVEN BY :

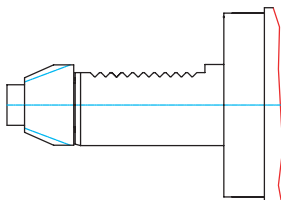
TOURNEVIS / SCHRAUBENZIEHER / SCREW DRIVER :
 DIN 1809



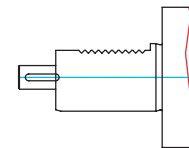
ARBRE CANNELE / KEILWELLE / GROOVED SHAFT :
 DIN 5480 / DIN 5482



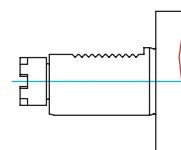
ROUE DENTEE CONIQUE / KONISCHES ZAHNRAD
 BEVEL WHEEL GEAR :



ARBRE CLAVETE / WELLE MIT NUT
 SHAFT WITH KEY :



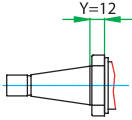
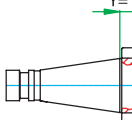
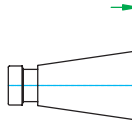
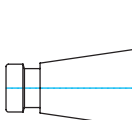
CRABOT / KLAUE / DRIVING DOG :



**INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN
TECHNICAL INFORMATION**

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

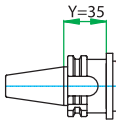
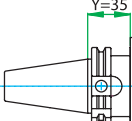
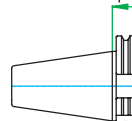
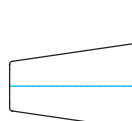
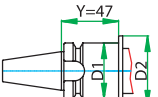
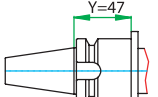
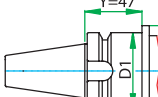

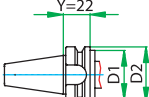
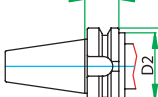


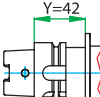


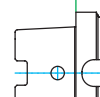
**CHANGEMENT MANUEL
MANUELLER WECHSEL
MANUAL TOOL CHANGE**

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

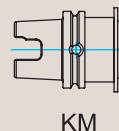
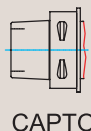
**A / Y : TYPE DE CONE
A / Y : STEILKEGEL
A / Y : SHANK**

**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
SPEZIAUSFÜHRUNG AUF AUFRAGE
SPECIAL FABRICATION ON REQUEST

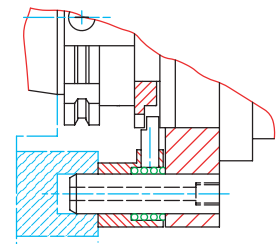
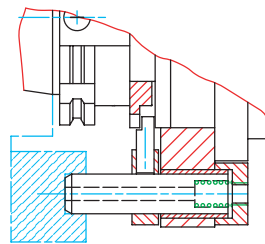
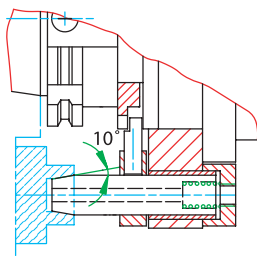
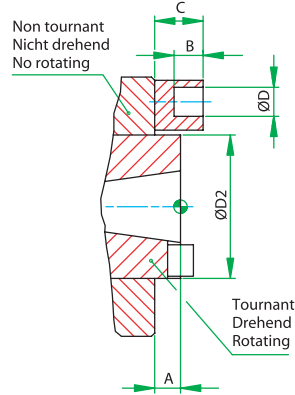
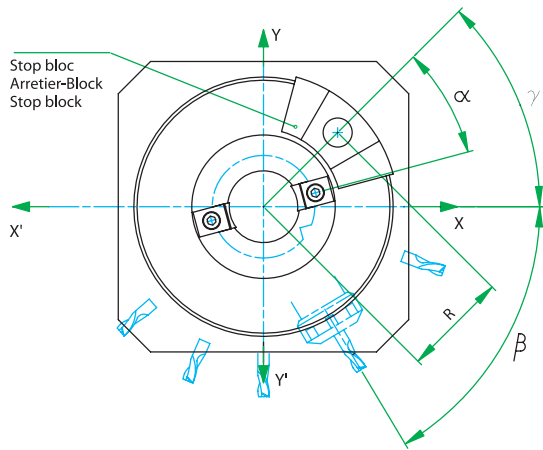


ETC ...

SUR DEMANDE
AUF ANFRAGE
ON REQUEST

INDEXION - INDEXIERUNG - LOCATION DEVICE

	Conditions requises pour une indexion	Benötigte Details für eine Indexierung	Location device requirements
$\varnothing D$	\varnothing du doigt d'indexion	\varnothing des Positionierungsstiftes	\varnothing of the location pin
D2	\varnothing du nez de broche (partie tournante)	\varnothing der Spindelhase (drehend)	\varnothing of the spindle nose (rotating)
R	Rayon du doigt d'indexion	Radius des Positionierungsstiftes	Radius of the location pin
A	Distance \odot - face d'appui	Distanz \odot - Auflagefläche	Distance \odot - 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

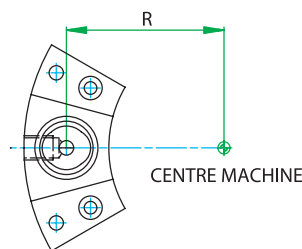
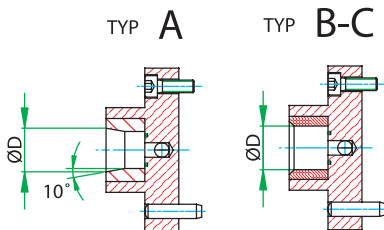


TYPE **A** Goupille cônique 10° mobile
10° Kon. Beweglicher Stift
10° Conical moving pin

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

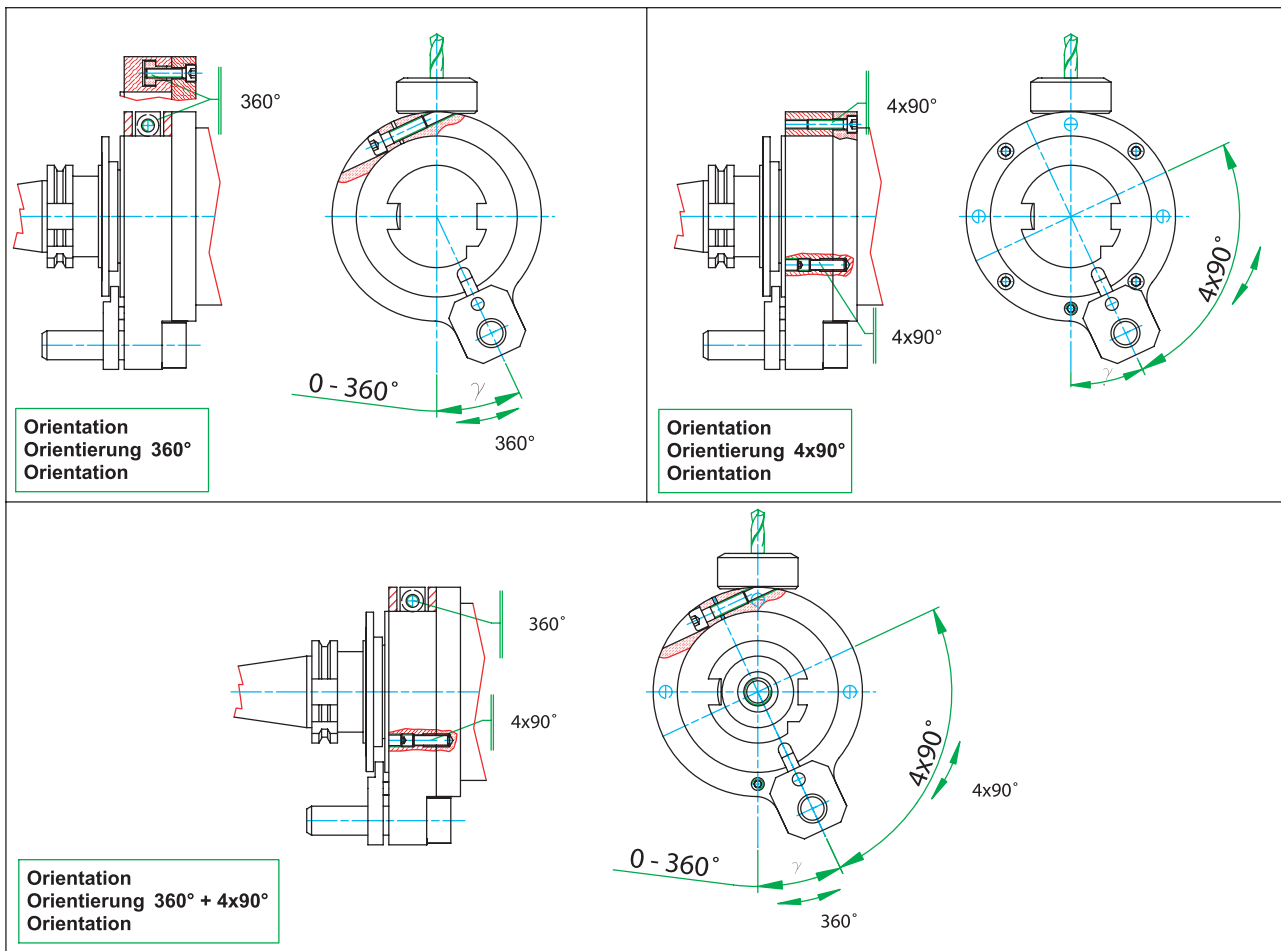
TYPE **C** Goupille cylindrique fixe
Fester Stift, Zyl.
Cylindrical fixed pin

STOP BLOC / ARRETIER-BLOCK / STOP BLOCK



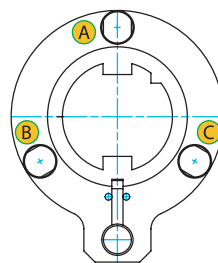
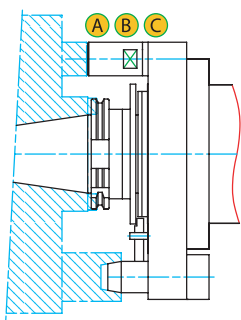
ISO HSK	R	ØD	REF.
30 / HSK 40-50	55	Ø 15 G6	076-05-206-20 (Typ C)
40 / HSK 63	65 ou 80	Ø 18 G6	076-05-206-10 (Typ C)
		Ø 18 G6	076-05-206-30 (Typ A) 076-05-206-10 (Typ B-C)
50 / HSK 80-100	80 ou 100 ou 110	Ø 18 G6 ou	076-05-206-30 (Typ A) 076-05-206-10 (Typ B-C)
		Ø 28	175-265-35-00 (Typ A)

ORIENTATION - ORIENTIERUNG - ORIENTATION

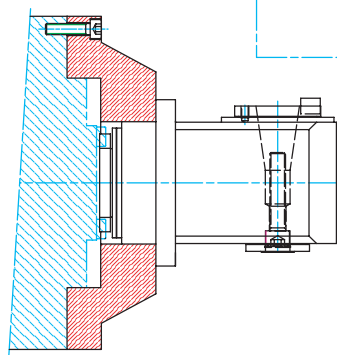


TRANSMISSION DE GRANDE PUISSANCE ET RIGIDITE
STABILITÄT UND UEBERTRAGUNG GROSSER KRÄFTE
HIGH POWER TRANSMISSION AND RIGIDITY

INDEXION AVEC APPUIS
INDEXIERUNG MIT ABSTUETZUNG
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



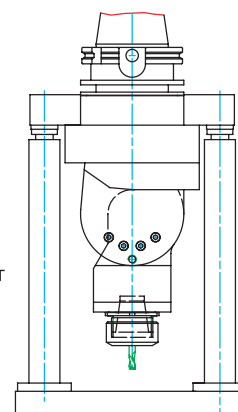
FLASQUE
FLANSCH
FLANGE

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

Multiplicateurs de vitesse pour centre d'usinage	44
Schnellaufspindeln für Bearbeitungszentren	
Spindle speeders for machining centre	
Multiplicateur à grand rendement et de grande puissance	45
Schnellaufspindeln für hohe Produktivität und grosser Leistung	
Speeders for high productivity and big power	
Multiplicateur de vitesse pour tour	46
Schnellaufspindeln für Drehmaschinen	
Spindle speeders for turning machines	
Informations techniques	47
Technische Informationen	
Technical information	



FX 300

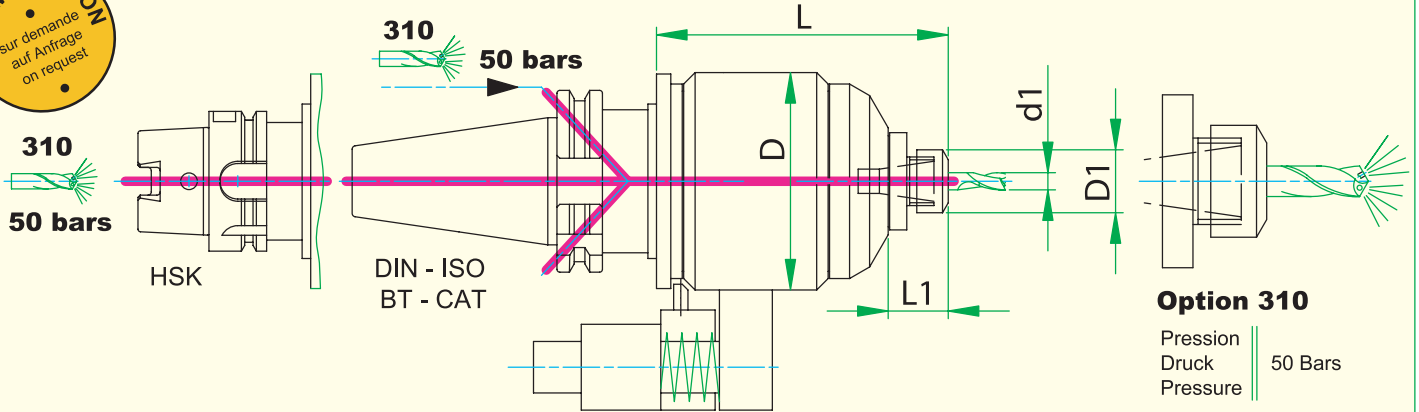


50'000 rpm

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

50'000 rpm

DOCUMENTATION
sur demande
auf Anfrage
on request



Option 310

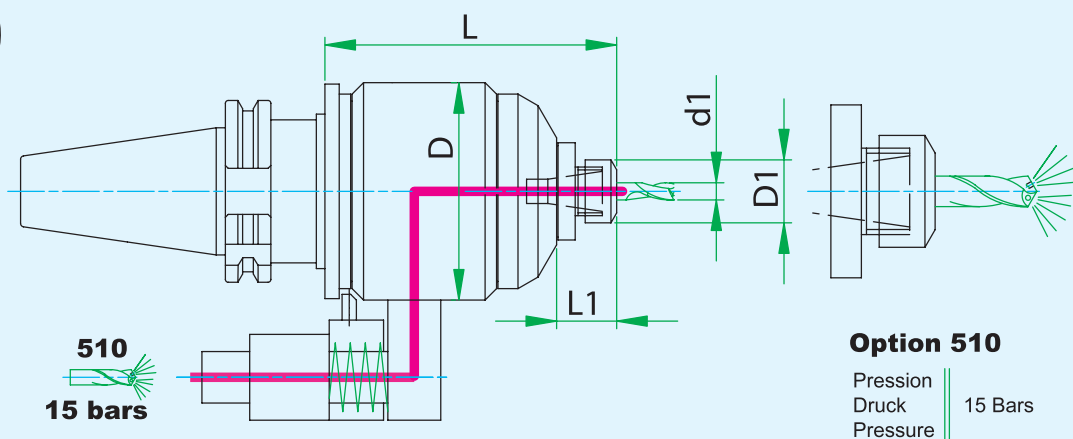
Pression ||| 50 Bars
Druck |||
Pressure |||

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

Type	Caractéristiques / Angaben Features		Arrosage Kühlmittel Coolant n max	Pince Zange Collet	Dimensions					DIN - ISO - BT - CAT						HSK							
	n	n max			kW	Nm	d1	D	D1	L	L1	kg	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	-		ETS14	0.5 - 8	98	22	115	21	5	▲	■	■	■					
X9810-50	1+10	44'000	50'000	2	5	-		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



Option 510

Pression ||| 15 Bars
Druck |||
Pressure |||

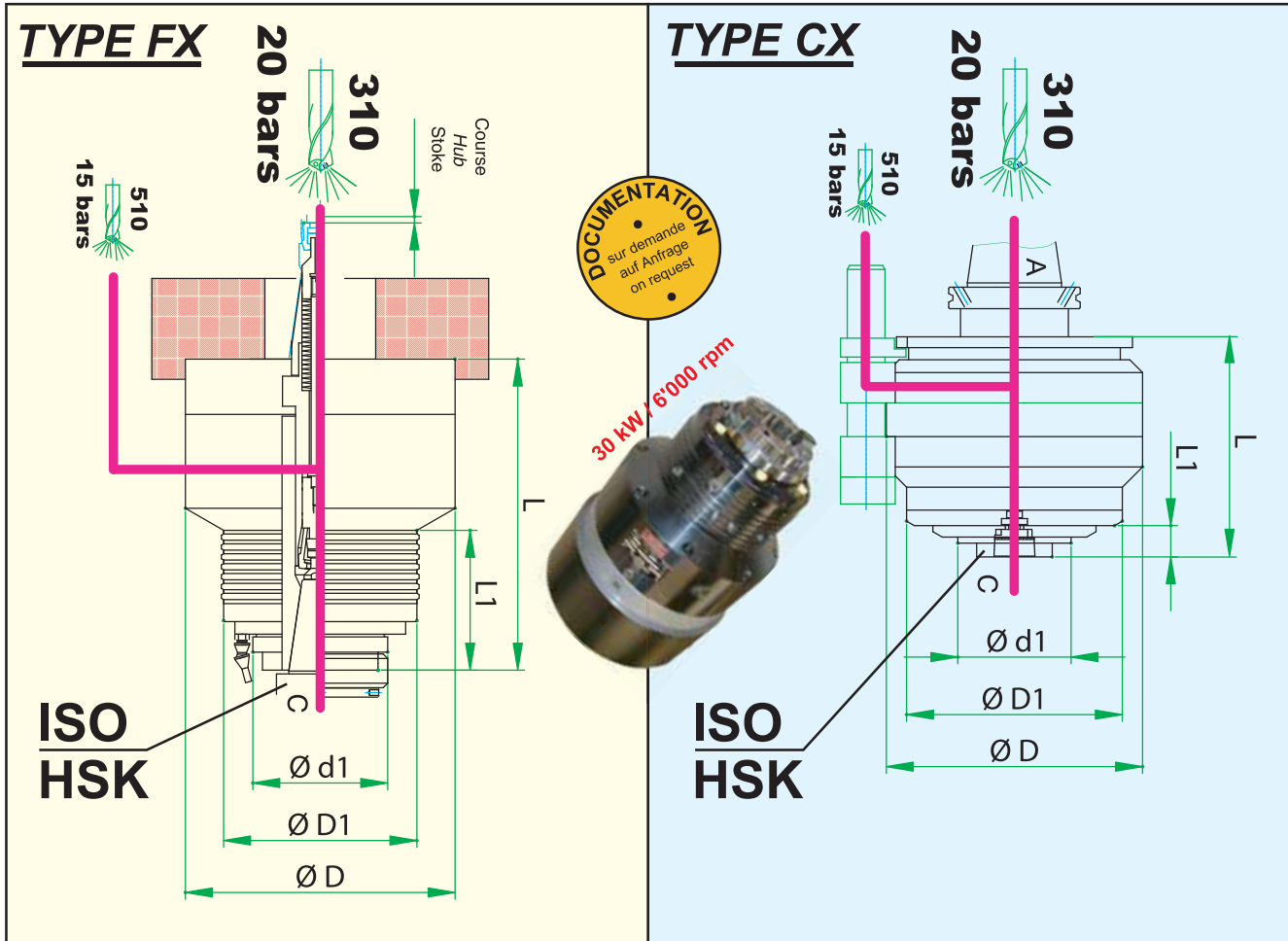
■ :standard - Standard - standard ▲ :sur demande - auf Anfrage - on request

Type	Caractéristiques / Angaben Features		Pince Zange Collet	Dimensions					DIN - ISO - BT - CAT						
	n	n max		kW	Nm	d1	D	D1	L	L1	kg	40	45	50	
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



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	ISO - BT - CAT
CX1905	1+5	8'000	10'000	10	190	ISO30/HSK50	121	190	160	230	60	29	■
CX2104	1+4	8'000	10'000	12	260	ISO40/HSK63	150	210	186	240	80	38	■
CX3504	1+4	4'000	5'000	30	1000	ISO50/HSK100	190	350	290	400	197	185	■

Données techniques voir page 47

Option 310

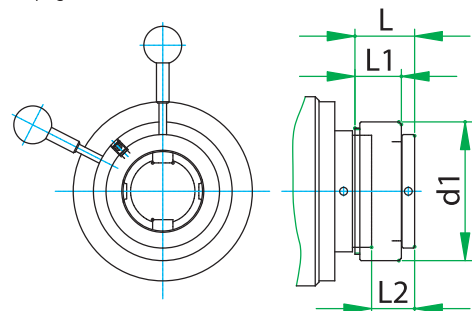
Pression / Druck / Pressure 20 bars
 Arrosage central avec entrée centrale.
 Innere Kühlmittelzufuhr mit Eintritt durch das Zentrum.
 Thru coolant with center input.

Option 510

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

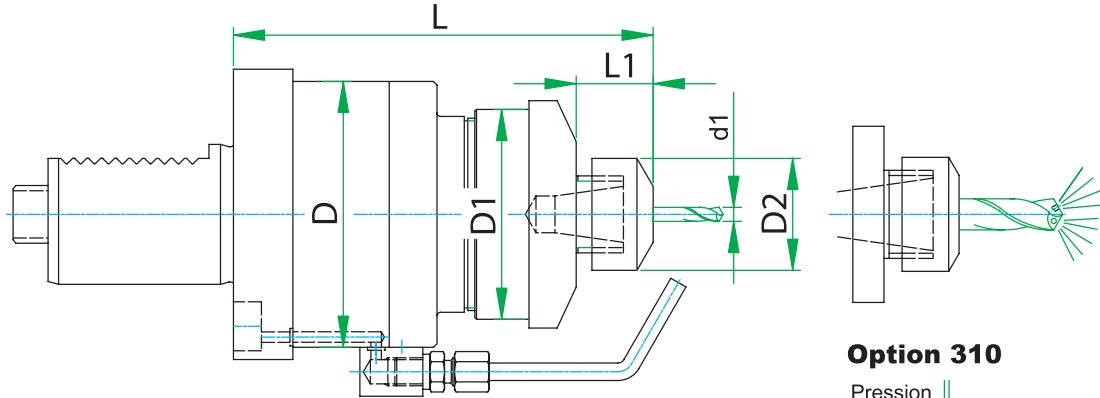
**Ecrou de serrage rapide Pibomulti
 Schnellwechsellmutter Pibomulti
 Pibomulti quick change nut**

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	46	38.5



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

**40'000
rpm**



Option 310

Pression | 20 Bars
Druck |
Pressure |

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

Type	Caractéristiques / Angaben Features		n max.	kW	Nm	Pince Zange Collet	d1	Dimensions				adaptation VDI					Entrainement selon machine Antrieb gem. Maschine Drive as per machine
	1+5	1+10						D	D1	D2	L	L1	20	25	30	40	
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				▲	

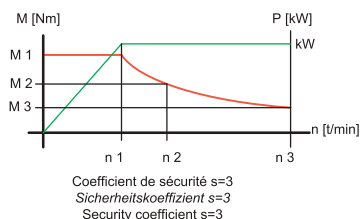
Sur demande, exécution flasqué et/ou avec arrosage par le centre.
Ausführung mit Flansch und/oder mit Innenkühlung auf Anfrage.
Upon request, flange execution and/or with coolant thru.



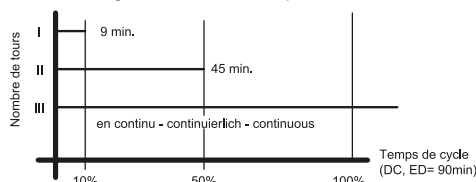
INFORMATIONS TECHNIQUES TECHNISCHE INFORMATIONEN
TECHNICAL INFORMATION

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

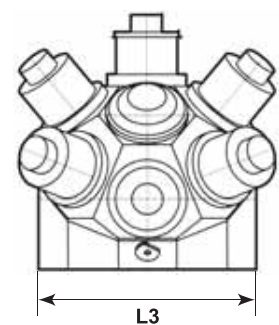
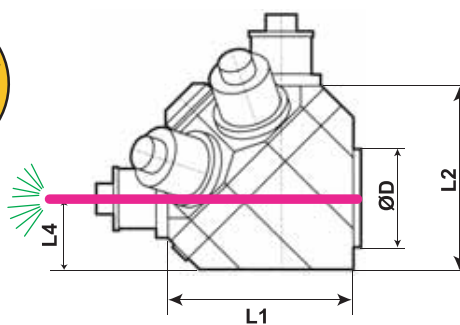
Technical data

↔ : 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

	TRI 150	TRH 150	TRI 200	TRH 200	TRH 250	TRI 300	TRH 350	TRI 400	TRH 450	TRH 500	TRI 600	TRH 700	TRI 800	TRH 1000						
NOMBRE DE POSITIONS ANZAHL STATIONEN NUMBER OF STATIONS	4-6		4-6	4-6-8	4-6-8	4-6	4-6-8	4-6	3-4-6 8-12	4-6	4-6	4-6-8	4-6	4-6-8						
PUISSANCE TRANSMISSIBLE ÜBERTRAGBARE LEISTUNG TRANSMITTING POWER	kW max. 5.0		10		12	15	15	26	26	40	45		45							
COUPLE TRANSMISSIBLE DREHMOMENT TRANSMITTING TORQUE	Nm 30		80		140	250	250	700	700	1'700	1'900		2'500							
VITESSE DE ROTATION MAX. MAX SPINDELDREHZAH MAX ROTATION SPEED	15 000	19 000	12 000	15 000	13'000	9'000	12'000	8'000	10'000	6'000	6'000		4'500							
REPETABILITE DE LA POSITION WIEDERHOLBARKEIT DER SPINDELPOS. REPEAT OF SPINDLE POSITION	" +/- 2		+/- 2		+/- 2	+/- 2	+/- 2	+/- 2	+/- 2	+/- 2	+/- 2		+/- 2							
PRECISION DE POSITIONNEMENT POSITIONIERGENAUIGKEIT PRECISION OF POSITIONNING	+/- 10	+/- 6	+/- 10	+/- 6	+/- 6	+/- 10	+/- 6	+/- 10	+/- 6	+/- 6	+/- 5		+/- 5							
TEMPS D'INDEXION 1/6 DE TOUR INDEXIERUNGSZEIT 1/6 DER DREHUNG INDEXING TIME 1/6 OF ROTATION	s. 1.2		1.5		1.8	1.8	1.8	2.0	2.0	2.5	2.8	3.0	3.0	3.5						
ENCOMBREMENT PLATZBEDARF DIMENSION	L1 (mm) 160	L2 (mm) 160	L3 (mm) 175	L4 (mm) 75	ØD (mm) 85	210	210	252	280	107	261	270	285	390	385	505	630	735	770	900
POIDS SANS OUTILLAGE GEWICHT OHNE WERKZEUGE WEIGHT WITHOUT TOOL	kg 30 38		45 55		80	100	120	300	350	600	700	1100	1700	2500						
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 (option 100)	50 (option 100)	50 (option 100)		50 (option 100)							
PRESSION D'HUILE POUR INDEXION OELDRUCK FÜR REVOLVERINDEXIERUNG OIL PRESSURE FOR TURRET INDEX	bars 20 à 35		20 à 35		20 à 35	20 à 35	20 à 35	20 à 35	20 à 35	20 à 35	20 à 35		20 à 35							



*Un partenaire complet
Une solution globale* *Ein kompletter Partner
Eine globale Lösung* *A complete partner
A global solution*



TRH 806



TRH 404

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

Coulisses 3 axes - 3 Achs-Kulissen - 3 axis Modules

TRIAX 100




X = 120 mm
Y = 130 mm
Z = 150 mm

TRIAX 500




X = 500 mm
Y = 520 mm
Z = 520 mm

TRIAX 300




X = 320 mm
Y = 350 mm
Z = 320 mm

TRIAX 600




X = 700 mm
Y = 700 mm
Z = 620 mm

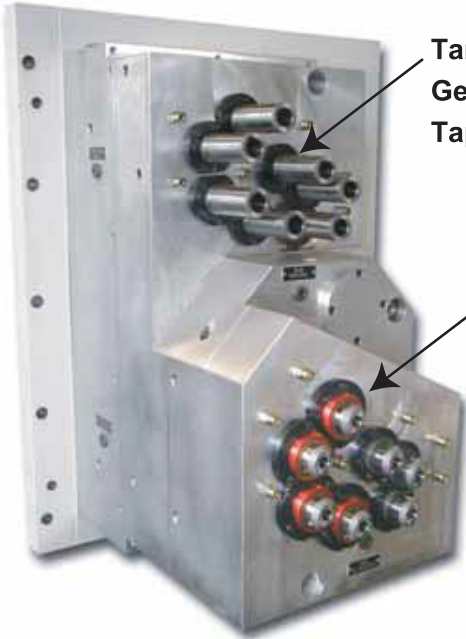
Maîtrise global de l'usinage par l'apport d'accessoires PIBOMULTI
Durch PIBOMULTI-Zubehör beherrschen Sie alle Bearbeitungsaufgaben
PIBOMULTI accessories allow total control of the design and manufacture process



Un savoir-faire incomparable

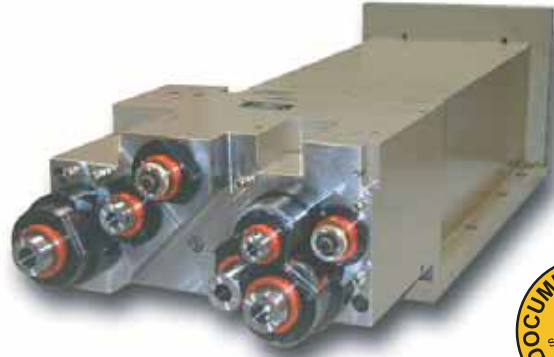
Unvergleichbares know-how

Matchless know-how



Taraudage
Gewindeschneiden
Tapping

Perçage
Bohren
Drilling



Fraisage, perçage et taraudage sans changer d'outil

Fräsen, Bohren und Gewindeschneiden 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
From watchmaking to shipbuilding

Une solution à chaque problème

Zu jedem Problem eine Lösung

A solution to each problem

Tête de taraudage à patronne
Gewindeschneidkopf mit Leitpatrone
Tapping head with lead screw

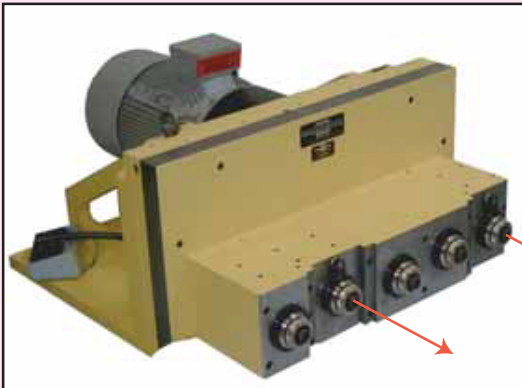


Différents pas dans la même opération
Verschiedene Steigung in der gleichen Operation
With different pitches in the same operation

Avec contrôle électrique
Mit elektrischer Kontrolle
With electrical control



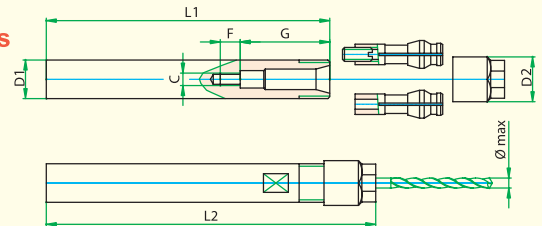
Têtes à broches alternées **Köpfe mit abwechselnden Spindeln**
Multi heads with alternating spindles



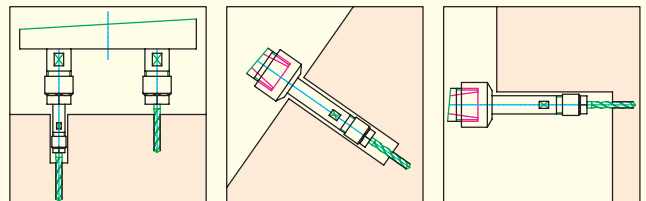
3 broches fixes / 2 mobiles
3 fixe Spindeln, 2 Vorschübe Spindeln
3 fixed spindles, 2 stroke spindles



Rallonges de broches miniatures
Miniaturspindelverlängerungen
Minispindle extensions



Type	D1	D2	L1	L2	G	F	C	Ø max	Pince Spannzange Collet	Ecrou Nutmutter	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 machine

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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