



# Porta Hidráulico Alta Prestación



**PHC-H**



# Porta Hidráulico “Omega” PHC-H High Pressure Hydro Chuck

**“NON PLUS ULTRA”**

**Tecnología Apriete Hidráulico**

- \* Fresado Trocoidal
- \* Increible fuerza de apriete  
[Ø32: 2000 Nm]
- \* Perfecto run out y exactitud
- \* Amplio rango de sujeción
- \* Efecto antivibratorio

**The NON PLUS ULTRA in  
Hydro clamping Technology**

- \* Trochoidal milling
- \* Incredible high clamping forces  
[Ø32: 2000 Nm]
- \* Perfect run out accuracy
- \* Maximum stability
- \* Large clamping range
- \* Anti-vibrations effect



**HSK - A (63-100)**

**SK (40-50)**

**BT (40-50)**

# 抜けない！ビビらない！曲がらない！ ワンランク上の高能率加工を実現！

No more pullout, chatter or deflection! Step on up to high-efficiency machining!



誰でもできる簡単な締め付け操作  
Easy! Quick! Simple clamping!!

六角レンチで操作ネジを回すだけで、誰でも簡単に安定したチャッキングを行う事が出来ます。

Simple one hand clamping operation with a hex wrench.

BT ..... p.4  
AHO ..... p.5  
HSK-A ..... p.6  
UTS ..... p.7



## 高精度 High precision



4d先端 Projection length : 4d

芯ズレ精度 : 3μm以下  
繰り返し精度 : 1μm以下

Accuracy : 3μm or less  
Repeat accuracy: 1μm or less

2点支持だけでなくスリーブ  
全体が収縮することにより、  
振れ精度が安定。

"Dual clamping points system"  
for stable and high precision clamping.

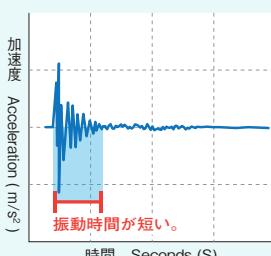
## 防振性と高把握力 Anti-vibration effect & High clamping force

独自の油圧室構造により、高い振動吸収効果を実現。  
更に従来のハイドロチャックを超える把握力を発揮。  
Special oil chamber around the chucking sleeve absorbs cutting vibrations.  
Utilizes stronger gripping force than a conventional hydro chuck.

### 高い振動吸収効果

High vibration dampening

ハンマリング試験結果  
Vibration test



### 把握力比較(Φ20mm)

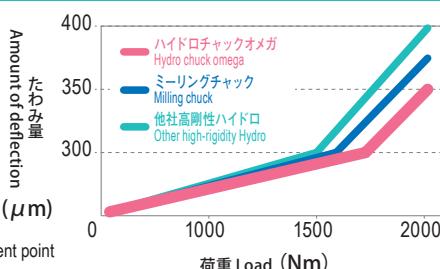
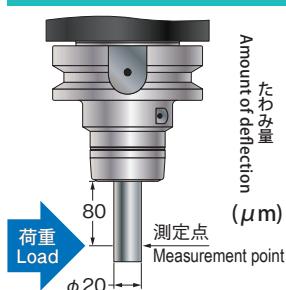
Gripping force comparison (Φ20mm)

把握力  
Gripping force

ハイドロチャックオメガ  
Hydro chuck omega

他社高剛性ハイドロ  
Other high-rigidity hydro

## 高剛性 High rigidity



## 高バランス High balance

プリバランス設計と、全数1点1点バランス取りにより、高速回転を実現。  
Pre-balanced design and individual balancing for each product allows for high rotational speeds.

許容回転数 : Max. 20,000min<sup>-1</sup>  
Max. rotational speed

※BT40-PHC16H-45, HSK63-PHC16H-80の場合。チャックごとの許容回転数はディメンションをご覗ください。

※BT40-PHC16H-45, HSK63-PHC16H-80. Max rotational speed for other holders can be found on the dimensions page.

スリップ防止ピン付コレット併用でΦ6.0からチャッキング可能 (PHC20H, PHC32H専用)  
Ø6.0 shank cutting tool can be clamped using a collet with stopper pin. (For PHC20H & PHC32H)

- NT独自のピン付きコレットで、刃物の切損や欠損の発生によるチャックの損傷を防ぐことが出来ます。
- チャックとコレットの▲型のマーキングを合わせる事で、高精度チャッキングを行うことができます。
- Using PHS collets, a variety of shank sizes can be clamped, and the inner shank can be protected from damage/scratches.
- For higher precision chucking, align ▲ markings on a PHC-A chuck and collet.



穴付き刃物用  
Tool with oil hole  
コレットスルー用  
For collet through coolant



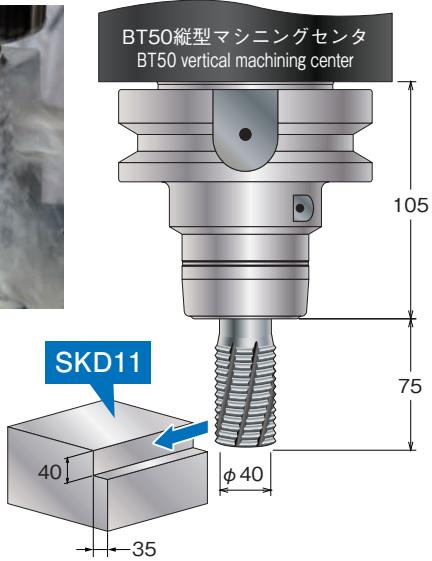
スリップ防止ピン付コレット  
Collet with stopper pin

センタースルーカラント対応  
Internal coolant feeding enabled.

## 加工例 Machining example

φ40 6枚刃 ラフィングエンドミルでの加工例  
φ40mm 6 flute end mill machining

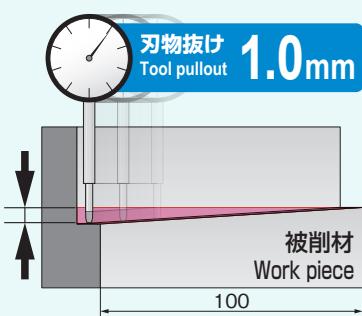
高把握力のため刃物が抜けない！  
High gripping force prevents tool pullout!



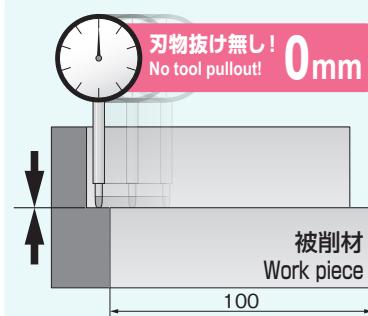
回転数 Rotational speed 212 min<sup>-1</sup>  
送り Feed 106 mm/min  
周速 Peripheral speed 21.3 m/min

送り量 Feed rate 0.5 mm/rev  
クーラント Coolant  
外部給油 External Oil Supply

他社高剛性ハイドロ  
Other high-rigidity Hydro



ハイドロチャックオメガ  
Hydro Chuck Omega



φ20 4枚刃 超硬スクエアエンドミルでの加工例  
φ20mm carbide 4 flute square end mill machining

高剛性、高精度により加工面の傾きを低減！  
High rigidity and accuracy reduce inclination of machining surface!

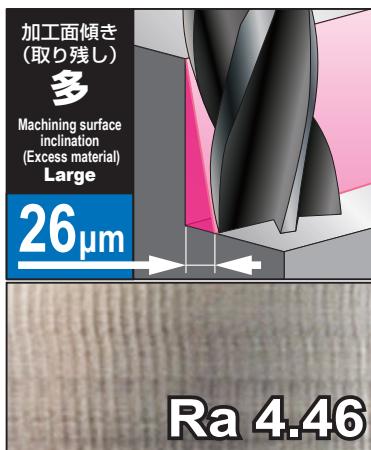


回転数 Rotational speed 6,350 min<sup>-1</sup>  
送り Feed 3,570 mm/min  
周速 Peripheral speed 398.7 m/min

送り量 Feed rate 0.56 mm/rev  
クーラント Coolant  
外部給油 External Oil Supply

\*推奨条件は送り F=2,100 mm/min

他社高剛性ハイドロ  
Other high-rigidity Hydro



ハイドロチャックオメガ  
Hydro Chuck Omega



取り残しを少なくする事で

加工後のゼロカット低減 や次工程の負荷低減 ができます。

Eliminating excess material after milling reduces the need to zero cut and reduces machining in later steps.

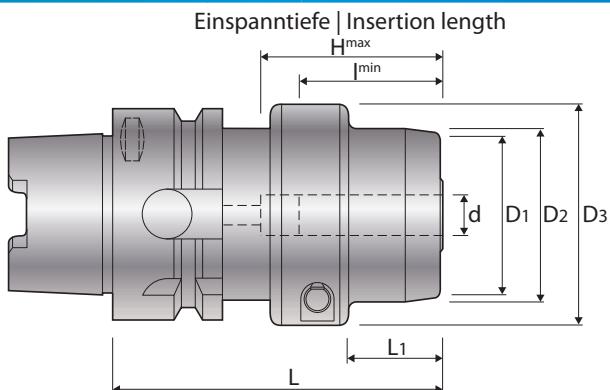
サイクルタイムの低減に繋がります！  
This all leads to reduced cycle times!



# PHC-H

Hochdruck-Dehnspannfutter  
High Pressure Hydro Chuck

Power Series



**HSK63A**

6.0  
32.0

0.003  
50

20.000  
min<sup>-1</sup>



Tol.  
h6



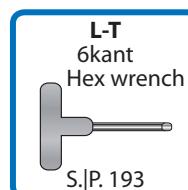
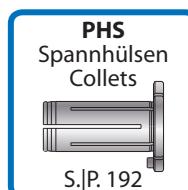
**mit erhöhter Spannkraft**  
with enhanced clamping force

DIN 69893 | ISO 12164

Halter   Holder	d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sup>max</sup>		
<b>HSK63A</b>	-PHC16H -75	16	-	44	56	75	21	45	51	-
	-PHC20H -105	20	48	50	60	105	32	50	75	PHS20H-d
	-PHC25H -105	25	58	60	69	105	35	55	75	-
	-PHC32H -105	32	63	65	75	105	37	65	78	PHS32H-d
	-135	32	63	65	75	135	47	65	105	PHS32H-d
L-4T										
L-5T										

HSK-Kühlmittelrohr im Lieferumfang enthalten.  
HSK mit Bohrung für Handspannung.

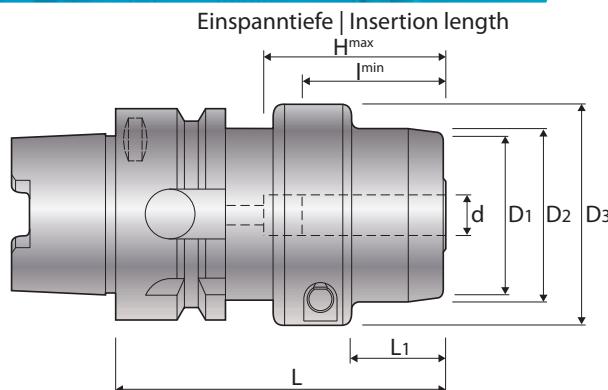
HSK-Coolant pipe included in delivery.  
HSK with holes for manual clamping.



# PHC-H

## Hochdruck-Dehnspannfutter High Pressure Hydro Chuck

Power Series



### HSK100A

6.0  
32.0

0.003  
50

max  
20.000  
min<sup>-1</sup>



Tol.  
h6

HA  
HB

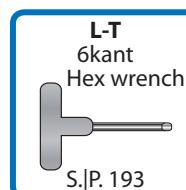
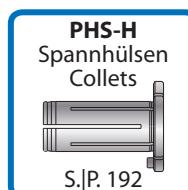
**mit erhöhter Spannkraft**  
with enhanced clamping force

DIN 69893 | ISO 12164

Halter   Holder	d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sup>max</sup>		
HSK100A	-PHC16H -75	16	-	44	56	75	21	45	51	-
	-PHC20H -105	20	48	50	60	105	32	50	70	PHS20H-d L-4T
	-105	25	58	60	69	105	35	55	70	-
	-PHC25H -135	25	58	60	69	135	35	55	100	-
	-PHC32H -115	32	63	65	75	115	47	65	78	PHS32H-d L-5T
	-135	32	63	65	75	135	47	65	100	PHS32H-d L-5T

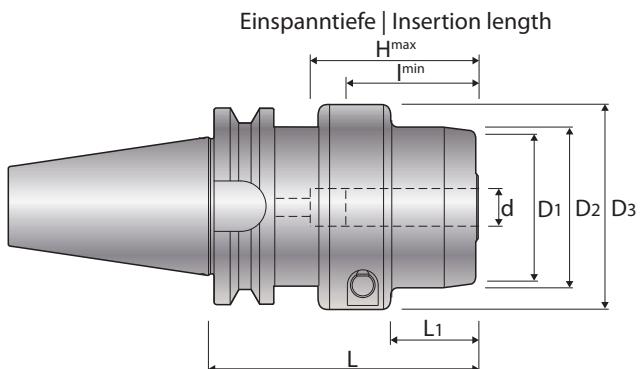
HSK-Kühlmittelrohr im Lieferumfang enthalten.  
HSK mit Bohrung für Handspannung.

HSK-Coolant pipe included in delivery.  
HSK with holes for manual clamping.



# PHC-H

Hochdruck-Dehnspannfutter  
High Pressure Hydro Chuck  
Power Series



**SK40**

**6.0**  
**32.0**

**0.003**  
**50**

**max 20.000**  
**min<sup>-1</sup>**

**Form**  
**AD**

**Tol.**  
**h6**

**HA**  
**HB**

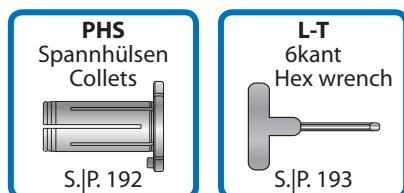
**mit erhöhter Spannkraft**  
with enhanced clamping force

DIN 69871 | ISO 7388-1

	Halter   Holder	d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sup>max</sup>			
SK40	-PHC16H	-45	16	42	-	56	45	-	45	70	-	
		-75	16	-	44	56	75	20	45	85	-	
	-PHC20H	-75	20	-	50	60	75	16	50	80	PHS20H-d	
		-105	20	48	50	60	105	32	50	110	PHS20H-d	
	-PHC25H	-75	25	-	60	69	75	17	55	80	-	
		-105	25	58	60	69	105	35	55	110	-	
	-PHC32H	-105	32	63	65	75	105	47	65	105	PHS32H-d	
		-135	32	63	65	75	135	47	65	120	PHS32H-d	
Bei Verwendung mit innerer Kühlmittelzufuhr die Luftaustrittsbohrungen mit zwei Schrauben M4x5 verschließen (im Lieferumfang enthalten).												
Hex-head screws M4x5 are necessary to plug air hole for center through coolant feed (incl. in delivery).												

Bei Verwendung mit innerer Kühlmittelzufuhr die Luftaustrittsbohrungen mit zwei Schrauben M4x5 verschließen (im Lieferumfang enthalten).

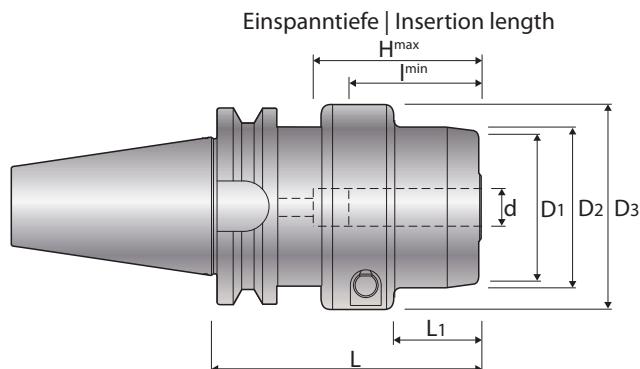
Hex-head screws M4x5 are necessary to plug air hole for center through coolant feed (incl. in delivery).



# PHC-H Hochdruck-Dehnspannfutter

## High Pressure Hydro Chuck

Power Series



**SK50**

6.0  
32.0

0.003  
50

max  
15.000  
min<sup>-1</sup>

Form  
AD

Tol.  
h6

HA  
HB

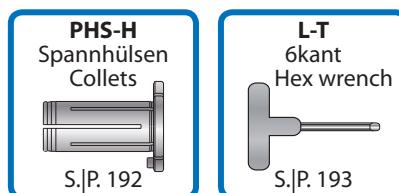
mit erhöhter Spannkraft  
with enhanced clamping force

DIN 69871 | ISO 7388-1

Halter   Holder	d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sub>max</sub>		
SK50	-PHC16H -75	16	42	44	56	75	27	45	75	- L-4T
	-105	16	42	44	56	105	27	45	105	- L-4T
	-PHC20H	-75	20	48	50	60	75	32	50	80 PHS20H-d L-4T
		-105	20	48	50	60	105	32	50	110 PHS20H-d L-4T
	-PHC25H	-75	25	58	60	69	75	35	55	80 - L-5T
		-105	25	58	60	69	105	35	55	110 - L-5T
		-135	25	58	60	69	135	35	55	110 - L-5T
	-PHC32H	-75	32	63	65	75	75	23	65	90 PHS32H-d L-5T
		-105	32	63	65	75	105	47	65	120 PHS32H-d L-5T
		-135	32	63	65	75	135	47	65	120 PHS32H-d L-5T

Bei Verwendung mit innerer Kühlmittelzufuhr die Luftaustrittsbohrungen mit zwei Schrauben M4x5 verschließen (im Lieferumfang enthalten).

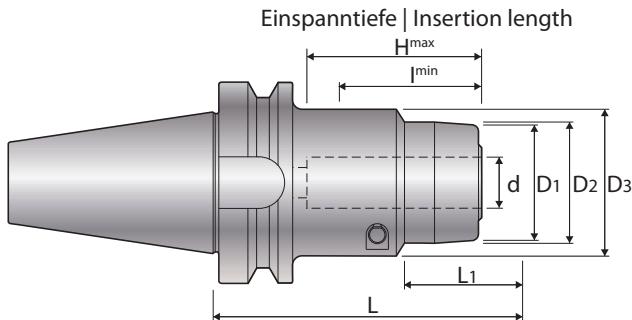
Hex-head screws M4x5 are necessary to plug air hole for center through coolant feed (incl. in delivery).



# PHC-H

## Hochdruck-Dehnspannfutter High Pressure Hydro Chuck

Power Series



**BT40**

**6.0  
32.0**

**0.003  
50**

**max  
20.000  
min<sup>-1</sup>**

**Form  
AD**

**Tol.  
h6**

**HA  
HB**

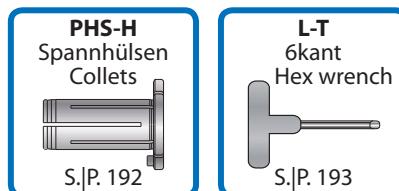
**mit erhöhter Spannkraft  
with enhanced clamping force**

JIS B6339

Halter   Holder		d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sub>max</sub>		
<b>BT40</b>	-PHC16H	-45	16	42	-	56	45	18	45	60	-
		-75	16	42	44	56	75	27	45	85	-
	-PHC20H	-75	20	48	50	60	75	32	50	80	PHS20H-d
		-105	20	48	50	60	105	32	50	95	PHS20H-d
	-PHC25H	-75	25	58	60	69	75	25	55	80	-
		-105	25	58	60	69	105	35	55	110	-
		-PHC32H	-105	32	63	65	75	105	40	65	90
			-135	32	63	65	75	135	47	65	120
											PHS32H-d
											L-5T

Bei Verwendung mit innerer Kühlmittelzufuhr die Luftaustrittsbohrungen mit zwei Schrauben M4x5 verschließen (im Lieferumfang enthalten).

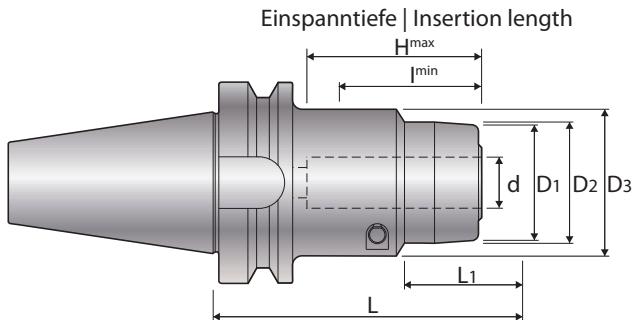
Hex-head screws M4x5 are necessary to plug air hole for center through coolant feed (incl. in delivery).



# PHC-H Hochdruck-Dehnspannfutter

## High Pressure Hydro Chuck

Power Series



**BT50**

6.0  
32.0

0.003  
50

15.000  
 $\text{min}^{-1}$

Form  
AD

Tol.  
h6

HA  
HB

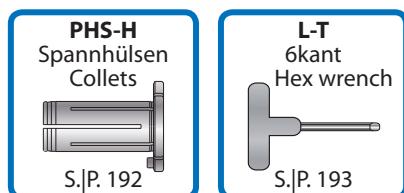
mit erhöhter Spannkraft  
with enhanced clamping force

JIS B6339

Halter   Holder	d	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	min	H <sub>max</sub>		
BT50	-PHC16H -75	16	-	44	56	75	17	45	75	- L-4T
	-105	16	42	44	56	105	27	45	105	- L-4T
	-PHC20H -75	20	-	50	60	75	17	50	80	PHS20H-d L-4T
		20	48	50	60	105	32	50	110	PHS20H-d L-4T
	-PHC25H -75	25	-	60	69	75	17	55	80	- L-5T
		25	58	60	69	105	35	55	110	- L-5T
		25	58	60	69	135	35	55	110	- L-5T
	-PHC32H -75	32	-	65	75	75	17	65	90	- L-5T
		32	63	65	75	105	47	65	120	PHS32H-d L-5T
		32	63	65	75	135	47	65	120	PHS32H-d L-5T

Bei Verwendung mit innerer Kühlmittelzufuhr die Luftaustrittsbohrungen mit zwei Schrauben M4x5 verschließen (im Lieferumfang enthalten).

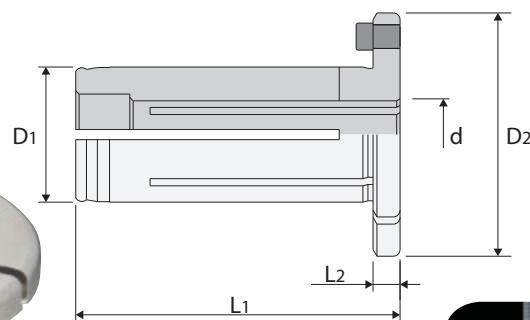
Hex-head screws M4x5 are necessary to plug air hole for center through coolant feed (incl. in delivery).





# Spannhülsen für Dehnspannfutter

## Collets for Hydro Chucks



### PHS-OH

**PHS-OH Spannhülsen | für innere Kühlmittelzufuhr**  
 PHS-OH Straight Collets | for inner coolant supply

Hülse   Collet	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	d
PHS -12-d-OH	12	26	49	4	3, 4, 5, 6, 7, 8, 9, 10
PHS -20-d-OH	20	36	49	4	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18



### PHS-C

**PHS-C Spannhülsen | für Peripheriekühlung**  
 PHS-C Straight Collets | for side-through coolant supply

Hülse   Collet	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	d
PHS -12-d-C	12	26	49	4	3, 4, 5, 6, 7, 8, 9
PHS -20-d-C	20	36	49	4	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

### PHS-H-OH

**PHS-OH Spannhülsen | für PHC-H Dehnspannfutter**  
 PHS-OH Straight Collets | for PHC-H Collet Chucks

Hülse   Collet	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	d
PHS -20H-d-OH	20	41	60	4	6, 8, 10, 12, 16
PHS -32H-d-OH	32	55	72	4	6, 8, 10, 12, 16, 20, 25

### PHS-H-C

**PHS-C Spannhülsen | für PHC-H Dehnspannfutter**  
 PHS-C Straight Collets | for PHC-H Collet Chucks

Hülse   Collet	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	d
PHS -20H-d-C	20	41	60	4	6, 8, 10, 12, 16
PHS -32H-d-C	32	55	72	4	6, 8, 10, 12, 16, 20, 25