



PULL STUDS  
TIRANTES  
ANZUGSBOLZEN

PULL STUDS

COLLETS

R-8 STRAIGHT  
DIN 6327/1835

FINE  
MACHINING

MODULAR

MORSE  
QUICKCHANGE

DIN 2080

POLYGONAL  
TAPER\_LC6

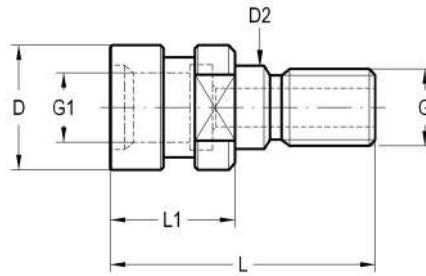
BT\_DUAL  
CONTACT

BT

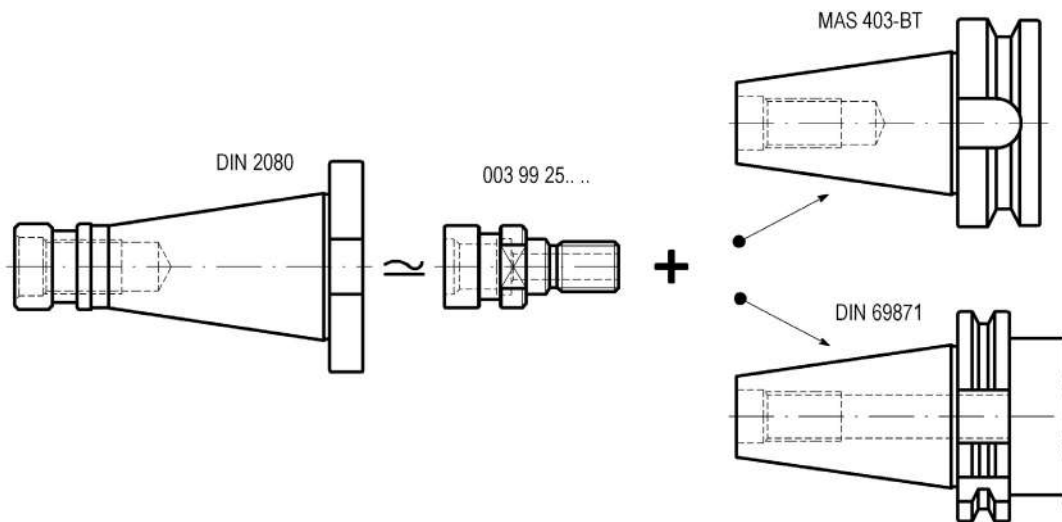
DIN  
69871

HSK

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G	G1	L	L1	D	D1	COD.	Availability Disponibilidad Verfügbarkeit
M-16	M-16	52	25,15	25	17	003 99 25 02 00	<input type="checkbox"/>
M-16	M-16	117	25,15	25	17	003 99 25 02 50	<input type="checkbox"/>
M-24	M-24	65	25,2	39,3	25	003 99 25 04 00	<input type="checkbox"/>

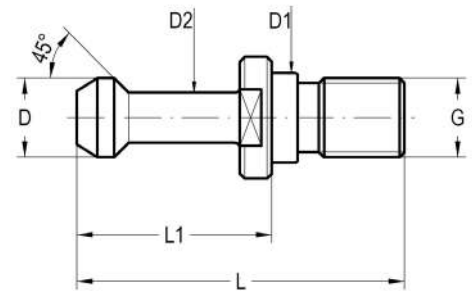


**MAS 403 BT PULL STUDS ( 45°)**  
**TIRANTES MAS 403 BT ( 45°)**  
**ANZUGSBOLZEN MAS 403 BT ( 45°)**

003 99 14/94 ...



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
11	M-12	43	23	12,5	7	003 99 14 01 00	■
15	M-16	60	35	17	10	003 99 14 02 00	■
23	M-24	85	45	25	17	003 99 14 04 00	■
* 15	M-16	57	32,15	17	10	003 99 94 02 00	■
15	M-16	124	35	17	10	003 99 14 02 50	□



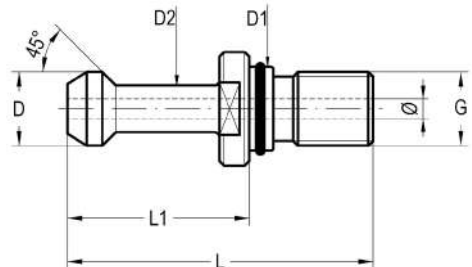
\* These pull studs are not according to MAS 403-BT. Use with DIN 69871-40  
 \* Estos tirantes no cumplen la norma MAS 403-BT. Para utilizar en DIN 69871-40  
 \* Diese Positionen entsprechen nicht der MAS 403-BT. Für DIN 69871-40

**MAS 403 BT PULL STUDS ( 45°)**  
**TIRANTES MAS 403 BT ( 45°)**  
**ANZUGSBOLZEN MAS 403 BT ( 45°)**

003 99 44/84 ...



D	G	L	L1	D1	D2	Ø	COD.	Availability Disponibilidad Verfügbarkeit
15	M-16	60	35	17	10	4	003 99 44 02 00	■
* 15	M-16	57	32,15	17	10	4	003 99 84 02 00	■
23	M-24	85	45	25	17	6	003 99 44 04 00	■



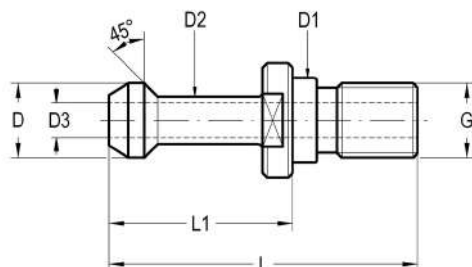
**MAS 403 BT PULL STUDS ( 45°)**  
**TIRANTES MAS 403 BT ( 45°)**  
**ANZUGSBOLZEN MAS 403 BT ( 45°)**

003 99 34 ...



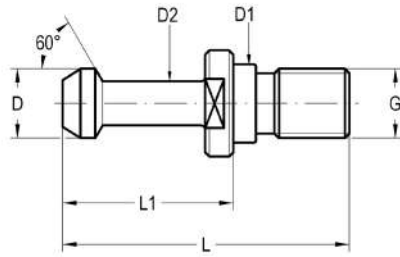
With through coolant channel.  
 Con paso refrigerante.  
 Mit innerer Kühlmittelzufuhr.

D	G	L	L1	D1	D2	D3	COD.	Availability Disponibilidad Verfügbarkeit
11	M-12	43	23	12,5	7	2,5	003 99 34 01 00	□
15	M-16	60	35	17	10	4	003 99 34 02 00	□
23	M-24	85	45	25	17	8	003 99 34 04 00	□



**MAS 403 BT PULL STUDS ( 60° )**  
**TIRANTES MAS 403 BT ( 60° )**  
**ANZUGSBOLZEN MAS 403 BT ( 60° )**

003 99 15/95 ...

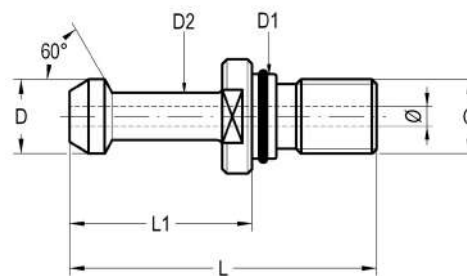


\* These pull studs are not according to MAS 403-BT.  
 \* Estos tirantes no cumplen la norma MAS 403-BT.  
 \* Diese Positionen entsprechen nicht der MAS 403-BT.

D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
11	M-12	43	23	12,5	7	003 99 15 01 00	■
11	M-12	143	23	12,5	7	003 99 15 01 41	■
15	M-12	100	35	17	10	003 99 15 02 01	■
15	M-12	118	35	17	10	003 99 15 02 40	■
15	M-12	178	35	17	10	003 99 15 02 41	■
* 15	M-16	57	32,15	17	10	003 99 95 02 00	■
15	M-16	60	35	17	10	003 99 15 02 00	■
15	M-16	124	35	17	10	003 99 15 02 50	■
15	M-16	100	35	17	10	003 99 15 02 02	■
15	M-16	194	35	17	10	003 99 15 02 51	■
19	M-20	70	40	21	14	003 99 15 03 00	□
23	M-20	165	45	25	17	003 99 15 04 60	□
23	M-24	85	45	25	17	003 99 15 04 00	■

**MAS 403 BT PULL STUDS ( 60° )**  
**TIRANTES MAS 403 BT ( 60° )**  
**ANZUGSBOLZEN MAS 403 BT ( 60° )**

003 99 45/85 ...

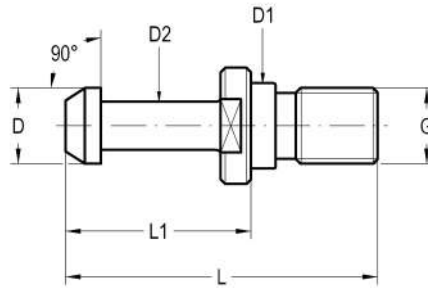


D	G	L	L1	D1	D2	Ø	COD.	Availability Disponibilidad Verfügbarkeit
15	M-16	60	35	17	10	4	003 99 45 02 00	■
* 15	M-16	57	32,15	17	10	4	003 99 85 02 00	■
23	M-24	85	45	25	17	6	003 99 45 04 00	■

HSK  
 DIN 69871  
 BT  
 BT\_DUAL CONTACT  
 POLYGONAL TAPER\_LC6  
 DIN 2080  
 MORSE QUICKCHANGE  
 MODULAR  
 FINE MACHINING  
 R-8 STRAIGHT DIN 6327/1835  
 COLLETS  
 PULL STUDS

**MAS 403 BT PULL STUDS ( 90°)**  
**TIRANTES MAS 403 BT ( 90°)**  
**ANZUGSBOLZEN MAS 403 BT ( 90°)**

003 99 11/18/23 ...



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
15	M-16	50	25	17	10	003 99 18 02 00	■
*24	M-24	71	31	25	18	003 99 18 04 00	■
15	M-16	60	35	17	10	003 99 23 02 00	■
23	M-24	85	45	25	17	003 99 23 04 00	■
15	M-16	116	26,75	17	10	003 99 11 02 50	□
15	M-12	118	35	17	10	003 99 23 02 40	□
15	M-16	124	35	17	10	003 99 23 02 50	□
23	M-20	165	45	25	17	003 99 23 04 60	□

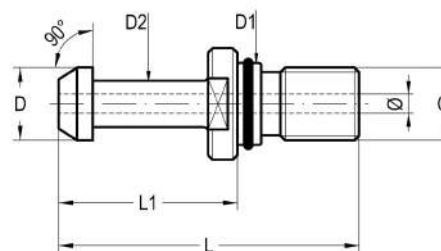
\* Pull stud with through coolant hole.

\* Tirante con orificio de paso refrigerante.

\* Mit Kühlmittelzufuhr.

**MAS 403 BT PULL STUDS ( 90°)**  
**TIRANTES MAS 403 BT ( 90°)**  
**ANZUGSBOLZEN MAS 403 BT ( 90°)**

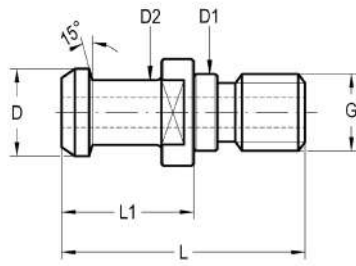
003 99 43 ...



D	G	L	L1	D1	D2	Ø	COD.	Availability Disponibilidad Verfügbarkeit
15	M-16	60	35	17	10	4	003 99 43 02 00	■
23	M-24	85	45	25	17	6	003 99 43 04 00	■

**JIS B 6339 PULL STUDS ( 15° )**  
**TIRANTES JIS B 6339 ( 15° )**  
**ANZUGSBOLZEN JIS B 6339 (15°)**

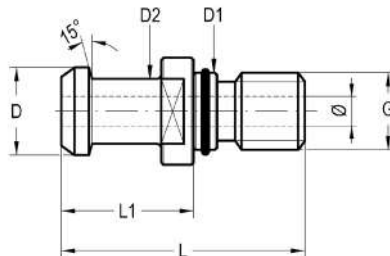
003 99 31...



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
12	M-12	43	23,4	12,5	8	003 99 31 01 00	■
12	M-10	90	23,4	12,5	8	003 99 31 01 30	□
12	M-12	94	23,4	12,5	8	003 99 31 01 40	□
19	M-16	54	29	17	14	003 99 31 02 00	■
19	M-16	94	29	17	14	003 99 31 02 02	□
19	M-16	118	29	17	14	003 99 31 02 50	□
19	M-16	188	29	17	14	003 99 31 02 51	□
28	M-20	154	34	25	21	003 99 31 04 60	□
28	M-24	74	34	25	21	003 99 31 04 00	■

**JIS B 6339 PULL STUDS ( 15° )**  
**TIRANTES JIS B 6339 ( 15° )**  
**ANZUGSBOLZEN JIS B 6339 (15°)**

003 99 41...



D	G	L	L1	D1	D2	Ø	COD.	Availability Disponibilidad Verfügbarkeit
19	M-16	54	29	17	14	4	003 99 41 02 00	■
19	M-16	54	29	17	14	7	003 99 41 02 10	■
28	M-24	74	34	25	21	10	003 99 41 04 00	■

HSK  
 DIN 69871  
 BT  
 BT\_DUAL CONTACT  
 POLYGONAL TAPER\_LC6  
 DIN 2080  
 MORSE QUICKCHANGE  
 MODULAR  
 FINE MACHINING  
 R-8 STRAIGHT DIN 6327/1835  
 COLLETS  
 PULL STUDS

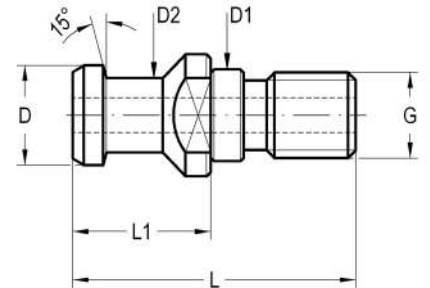
**DIN 69872 - ISO 7388/2 PULL STUDS ( 15° )**  
**TIRANTES DIN 69872 - ISO 7388/2 ( 15° )**  
**ANZUGSBOLZEN DIN 69872-ISO 7388/2 ( 15° )**

003 99 16 ...



**FORM A**

D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
*13	M-12	44	24	13	9	003 99 16 01 00	■
19	M-16	54	26	17	14	003 99 16 02 00	■
19	M-16	118	26	17	14	003 99 16 02 50	□
19	M-16	183	26	17	14	003 99 16 02 51	□
23	M-16	100	30	21	17	003 99 16 03 02	□
23	M-16	135	30	21	17	003 99 16 03 50	□
28	M-24	74	34	25	21	003 99 16 04 00	■



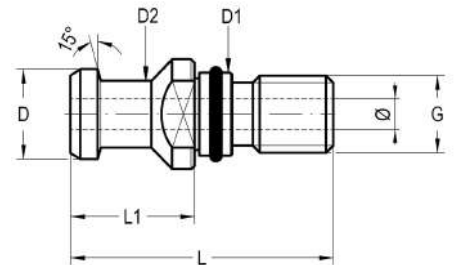
\* Without through hole.  
 \* Sin orificio de paso refrigerante.  
 \* Ohne Kühlmittelzufuhr.

**DIN 69872 - ISO 7388/2 PULL STUDS ( 15° )**  
**TIRANTES DIN 69872 - ISO 7388/2 ( 15° )**  
**ANZUGSBOLZEN DIN 69872-ISO 7388/2 ( 15° )**

003 99 36 ...




D	G	L	L1	D1	D2	Ø	COD.	Availability Disponibilidad Verfügbarkeit
19	M-16	54	26	17	14	7	003 99 36 02 00	■
28	M-24	74	34	25	21	11,5	003 99 36 04 00	■

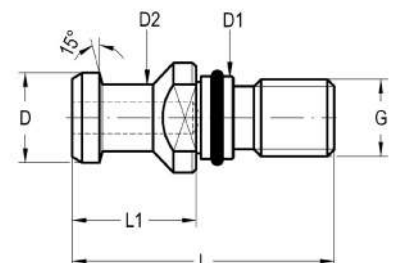


**DIN 69872 FORM B PULL STUDS ( 15° )**  
**TIRANTES DIN 69872 FORMA B ( 15° )**  
**ANZUGSBOLZEN DIN 69872 FORM B ( 15° )**

003 99 26 ...



D	G	L	L1	D1	D2	COD.		Availability Disponibilidad Verfügbarkeit
13	M-12	44	24	13	9	003 99 26 01 00	305 04 01 11 00	■
19	M-12	112	26	17	14	003 99 26 02 40	305 04 01 41 50	■
19	M-16	54	26	17	14	003 99 26 02 00	305 04 01 41 50	■
28	M-24	74	34	25	21	003 99 26 04 00	305 04 02 02 50	■



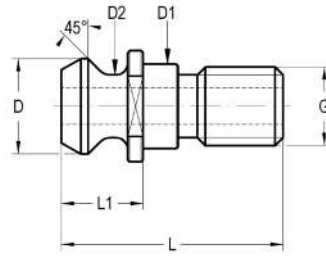


**ISO 7388/2 PULL STUDS ( 45°)**  
**TIRANTES ISO 7388/2 ( 45°)**  
**ANZUGSBOLZEN ISO 7388/2 ( 45°)**

003 99 17/32 ...



With through coolant channel.  
 Con paso refrigerante.  
 Mit Kühlmittelzufuhr.



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
13,20	M-12	34	11,65	13	9,15	003 99 17 01 00	■
13,20	M-12	80	11,65	13	9,15	003 99 17 01 30	□
18,80	M-12	161	16,25	17	12,45	003 99 17 02 41	□
18,80	M-16	44,5	16,25	17	12,45	003 99 17 02 00	■
*18,80	M-16	44,5	19,10	17	12,45	003 99 32 02 00	■
23,90	M-16	90	20,80	21	16,15	003 99 17 03 02	□
23,90	M-16	125	20,80	21	16,15	003 99 17 03 50	□
*29	M-24	65,5	25,20	25	19,45	003 99 32 04 00	■
29	M-24	65,5	25,40	25	19,45	003 99 17 04 00	■
**28,956	M-24	65,4	25,40	25	20,828	E003 99 17 04 00 00	■

\* These pull studs are not according to ISO 7388/2 Form B.      \*\* CAT ANSI (YME CAT #50)  
 \* Estos tirantes no cumplen la norma ISO 7388/2 Forma B.  
 \* Diese Positionen entsprechen nicht der ISO 7388/ Form B.

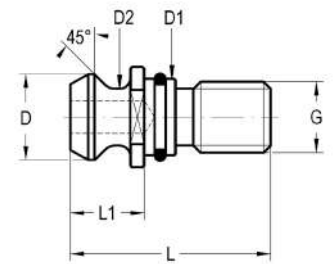
**ISO 7388/2 PULL STUDS ( 45°)**  
**TIRANTES ISO 7388/2 ( 45°)**  
**ANZUGSBOLZEN ISO 7388/2 ( 45°)**

003 99 27 ...



Without through coolant channel.  
 Sin paso refrigerante.  
 Ohne Kühlmittelzufuhr.

D	G	L	L1	D1	D2		COD.	Availability Disponibilidad Verfügbarkeit
18,8	M-16	44,5	16,25	17	12,80	305 04 01 41 50	003 99 27 02 00	■
29	M-24	65,5	25,4	25	19,45	305 04 02 02 50	003 99 27 04 00	■



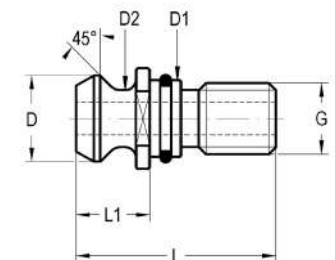
**ISO 7388/2 PULL STUDS ( 45°)**  
**TIRANTES ISO 7388/2 ( 45°)**  
**ANZUGSBOLZEN ISO 7388/2 ( 45°)**

003 99 37 ...



With through coolant channel and OR.  
 Con paso refrigerante y junta.  
 Mit Kühlmittelzufuhr.

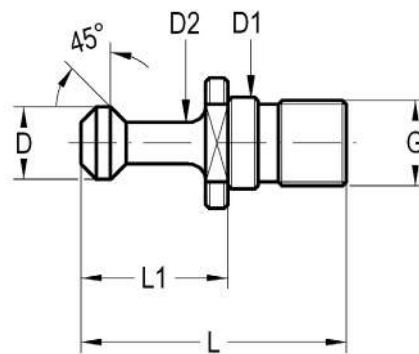
D	G	L	L1	D1	D2	HOLE	COD.	Availability Disponibilidad Verfügbarkeit
18,8	M-16	44,5	16,25	17	12,80	7,3	003 99 27 02 00	■
29	M-24	65,5	25,4	25	19,45	11,5	003 99 27 04 00	■



HSK  
 DIN 69871  
 BT  
 BT\_DUAL CONTACT  
 POLYGONAL TAPER\_LC6  
 DIN 2080  
 MORSE QUICKCHANGE  
 MODULAR  
 FINE MACHINING  
 R-8 STRAIGHT DIN 6327/1835  
 COLLETS  
 PULL STUDS

**SHORT CHIRON ISO 30 PULL STUDS ( 45°)***TIRANTES CORTOS PARA REDUCTORES CHIRON A MORSE ISO 30 ( 45°)**ANZUGSBOLZEN FÜR CHIRON ISO 30 ( 45°)*

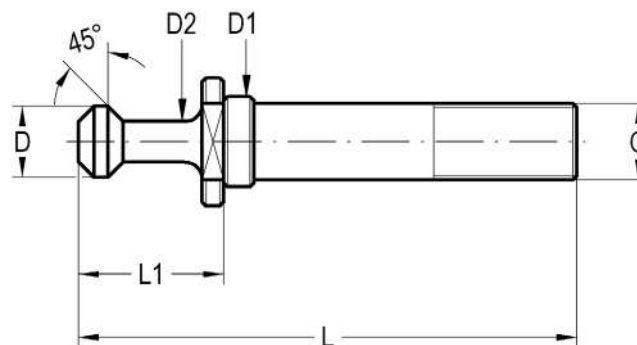
003 99 30 01 00



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
10	M-12	36	20	13	6	003 99 30 01 00	<input type="checkbox"/>

**LONG CHIRON ISO 30 PULL STUDS FOR REDUCERS ADAPTADERS ( 45°)***TIRANTES LARGOS PARA REDUCTORES CHIRON A MORSE ISO 30 ( 45°)**LANGE ANZUGSBOLZEN FÜR CHIRON ISO 30° ( 45°)*

003 99 30 ...



D	G	L	L1	D1	D2	COD.	Availability Disponibilidad Verfügbarkeit
10	M-6	74	20	13	6	003 99 30 01 20	<input type="checkbox"/>
10	M-12	89	20	13	6	003 99 30 01 40	<input type="checkbox"/>