



**ISO/IEC 17025
CERTIFIED REFERENCE TOOLS
FOR HARDNESS TESTERS**

CATALOGUE **2025**

**HARDNESS
REFERENCE BLOCKS
& INDENTERS**

INTRODUCTION

© UPI Laboratories Europe BV

Changes in products and/or product specifications can emerge due to new technologies and/or continuous development.

We reserve the right to change or modify specifications of products without prior notice.

We recommend you to contact our sales office for up-to-date information.

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C25CATPRI/03/EN

UPI Laboratories Europe BV, ISO/IEC 17025 RvA accredited laboratory providing DIN EN ISO / ASTM dual certified test blocks and indenters.

The RvA, like UKAS, Dakks, COFRAC, NVLAP, A2LA are ILAC (International Laboratory Accreditation Cooperation) members. Certificates issued by UPI Laboratories for test blocks and indenters meet or exceed the relevant ISO/ASTM requirements for hardness testing and comply with the requirements for NADCAP accredited/certified organizations.

Hardness test blocks or hardness reference plates are comparison plates most commonly made of Steel or Aluminum but could also be made of Brass or custom materials. They are used for the day to day Indirect Verification and Calibration of hardness testing machines and instruments. There are hardness test blocks for almost all hardness testing methods and scales.

Verifying the display reading of a hardness tester against ISO/ASTM certified hardness test block values part of a normal quality assurance process. Adjusting your hardness tester according to the value engraved in a hardness test block, as long as the adjustments are minor, can be done after assurance that a correct and undamaged indenter/penetrator is installed and the tester operates normally. Indenters are available for almost all scales with viability of micro and macro diamond indenters and carbide or available in the different sizes by the different methods.

ISO & ASTM HARDNESS TEST BLOCKS and INDENTERS (RvA)

Hardness test blocks UPI Laboratories Europe BV branded are manufactured according to standards ISO (International) and ASTM (American).

Such standards apply to the physical requirements as well to the method & the way the final value is found and confirmed." UPI Laboratories BV hardness test blocks and indenters are of excellent finish and have very low variation, excellent repeatability.

RAW MATERIALS USED

In order to manufacture good hardness test blocks, strict control over the quality of raw materials (Steel, Brass, Aluminum) is required. The entire block material needs to be homogenous, to assure low spread of readings and excellent repeatability. UPI Laboratories Europe BV performs supplier audits to assure this.

HEAT TREATMENT

Distribution of the blocks in the hardening furnaces is of utmost importance, time, temperature and quench are all carefully controlled processes, to assure a top class product. UPI Laboratories Europe BV performs supplier audits to assure this.

FINISHING

The next step in the process to ensure high quality 'blanks' is the grinding, polishing and lapping of the block surfaces. Any concerns on the surface quality are eliminated due to thorough selection after inspection. UPI Laboratories Europe BV performs supplier audits to assure this.

QUALITY CONTROL

Before proceeding with the ultimate verification and engraving of the block hardness, blocks are undergoing a full inspection to ensure that they meet the physical requirements of ISO and ASTM (thickness, flatness, parallelism, surface roughness, magnetism and uniformity).

UPI
LABORATORIES

TRACEABILITY

UPI hardness calibration blocks and indenters are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6506, ISO 6507, ISO 6508, ISO 4545, ASTM E18, ASTM E92 and ASTM E10.

www.rva.nl/alle-geaccrediteerden/k182



TEST BLOCKS

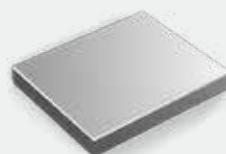
TEST BLOCKS RANGE

25mm

60mm

90mm

150mm



ROCKWELL REFERENCE BLOCKS

ROCKWELL DIAMOND SCALES

UPI Rockwell cone hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6508/3 & ASTM-E18 A4.

ROCKWELL CARBIDE BALL SCALES

UPI Rockwell ball hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6508/3 & ASTM-E18 A4.



ROUND (dia. 60mm X 10mm thickness)

All mentioned hardness values are nominal, the actual calibrated values may vary.
The blocks that are marked in **bold** are available in aluminium, while the rest are made of steel.

NAV ID	DESCRIPTION											
HRC	20	25	30	35	40	45	50	55	60	63	65	67
HRA Soft	22	26	31	35	40	45	47	50	53	55	59	62
HRA Hard	60	63	65	68	70	73	76	78	81	83	84	85
HRD		44	48	51	55	59	63	67	71	75		
HR15N		71	74	76	79	82	85	88	90	92		
HR30N		46	50	55	59	64	68	72	77	81		
HR45N		25	31	37	43	49	55	60	66	72		

Deviating scales or hardness can be ordered by custom request.
Blocks can be supplied with NADCAP compliant grid.

ROUND (dia. 60mm X 10mm thickness)

All mentioned hardness values are nominal, the actual calibrated values may vary.
The blocks that are marked in **bold** are available in aluminium, while the rest are made of steel.

NAV ID	DESCRIPTION													
HRB	10	20	30	40	50	60	65	70	75	80	85	90	95	
HRE (alu)			75	81	87	93	97	100						
HRF (alu)			74	80	86	91	94	97						
HRG									33	41	49	58	66	74
HRK			47	56	65	73	77	81	86	91	95	99		
HRM*	85	110												
HRR*	105			125										
HR15T			70	73	77	80	83	85	86	88	90	91		
HR30T			36	43	49	56	60	63	66	69	73	76	80	
HR45T				12	22	32	37	43	48	53	58	63	68	

Deviating scales or hardness can be ordered by custom request.
Blocks can be supplied with NADCAP compliant grid.

* The scales of the 1/4" and 1/2" ball indenter are only ASTM E18, not ISO 6508.

MACRO VICKERS SCALES

UPI Macro Vickers hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6507/3 & ASTM-E92 A4.

Standard high grade polishing



ROUND (dia. 60mm X 10mm thickness)

All mentioned hardness values are nominal, the actual calibrated values may vary.
The blocks that are marked in **bold** are available in aluminium, while the rest are made of steel.

NAV ID	DESCRIPTION																
HV0.1	40	70	100	150	200	250	300	350	400	450	500*	550*	600*	650*	700*	750*	800*
HV0.2	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV0.3	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV0.5	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV1	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV2	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV3	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV5	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV10	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV20	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV30	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV50	40*	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV60	40*	70**	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV100	40*	70*	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV120	40*	70*	100*	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HV150	40*	70*	100*	150	200	250	300	350	400	450	500	550	600	650	700	750	800

* Hardness value is outside the scope of the ISO/ASTM standards due to indentations smaller than 0,020mm.
Deviating scales or hardness can be ordered on custom request.

** Scale is outside the scope of accreditation.



MICRO VICKERS SCALES

UPI Micro Vickers hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6507/3 & ASTM-E92 A4.

Extreme mirror polishing



ROUND (dia. 25mm X 6mm thickness)

All mentioned hardness values are nominal, the actual calibrated values may vary.
The blocks that are marked in **bold** are available in aluminium, while the rest are made of steel.

NAV ID	DESCRIPTION																
HMV2	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HMV1	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HMV0.5	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HMV0.3	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HMV0.2	40	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HMV0.1	40	70	100	150	200	250	300	350	400	450	500*	550*	600*	650*	700*	750*	800*
HMV0.05	40	70	100	150	200	250*	300*	350*	400*	450*	500*	550*	600*	650*	700*	750*	800*
HMV0.025	40	70	100	150*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*	700*	750*	800*
HMV0.02	40	70	100*	150*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*	700*	750*	800*
HMV0.015	40	70	100*	150*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*	700*	750*	800*
HMV0.010	40	70*	100*	150*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*	700*	750*	800*

* Hardness value is outside the scope of the ISO/ASTM standards due to indentations smaller than 0,020mm.
Deviating scales or hardness can be ordered on custom request.



KNOOP SCALES

UPI Knoop hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 4545/3 & ASTM-E92 A4.



BRINELL SCALES

UPI Brinell hardness calibration blocks are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6506/3 & ASTM-E10 A4.



ROUND (dia. 25mm X 6mm thickness)																	
NAV ID	DESCRIPTION																
HK0.01**	40**	70**	100**	150**	200**	250**	300**	350**	400*	450*	500*	550*	600*	650*	700*	750*	800*
HK0.015**	40**	70**	100**	150**	200**	250**	300**	350**	400**	450**	500**	550*	600*	650*	700*	750*	800*
HK0.02	40**	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750*	800*
HK0.025	40**	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HK0.05	40**	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HK0.1	40**	70	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HK0.2	40**	70**	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HK0.3	40**	70**	100**	150	200	250	300	350	400	450	500	550	600	650	700	750	800
HK0.5	40**	70**	100**	150**	200	250	300	350	400	450	500	550	600	650	700	750	800
HK1	40**	70**	100**	150**	200**	250**	300**	350	400	450	500	550	600	650	700	750	800
HK2	40**	70**	100**	150**	200**	250**	300**	350**	400**	450**	500**	550**	600**	650**	700**	750	800
Deviating scales or hardness can be ordered on custom request.																	

* Hardness value is outside the scope of the ISO/ASTM standards due to indentations smaller than 0,020mm
 ** Scales are outside the scope of accreditation.

RECTANGULAR (150 x 125 x 19mm)																	
NAV ID	DESCRIPTION																
HBW 10/3000					150	170	200	250	300	350	400	450	500	550	600	650	
HBW 10/1500		70	100	150	170	200	250	300	350*	400*	450*	500*	550*	600*	650*		
HBW 10/1000		70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 10/500	40	70	100	150*	170*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 5/750					150	170	200	250	300	350	400	450	500	550	600	650	
HBW 5/250		70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
Deviating scales or hardness can be ordered on custom request. Blocks can be supplied with NADCAP compliant grid.																	

* Hardness value is outside the scope of the ISO/ASTM standards

ROUND (dia. 90mm X 16mm thickness)																	
NAV ID	DESCRIPTION																
HBW 10/3000		70*	100	150	170	200	250	300	350	400	450	500	550	600	650		
HBW 10/1500		70	100	150	170	200	250	300	350*	400*	450*	500*	550*	600*	650*		
HBW 10/1000		70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 10/500	40	70	100	150*	170*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 5/750		70*	100	150	170	200	250	300	350	400	450	500	550	600	650		
HBW 5/250		70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 5/125	40	70	100	150*	170*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*		
Deviating scales or hardness can be ordered on custom request. Blocks can be supplied with NADCAP compliant grid.																	

* Hardness value is outside the scope of the ISO/ASTM standards

ROUND (dia. 60mm X 10mm thickness)																	
NAV ID	DESCRIPTION																
HBW 2.5/187.5	40*	70*	100	150	170	200	250	300	350	400	450	500	550	600	650		
HBW 2.5/62.5	40	70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 2.5/31.25	40	70	100	150*	170*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 1/30	40*	70*	100	150	170	200	250	300	350	400	450	500	550	600	650		
HBW 1/10	40	70	100	150	170	200	250*	300*	350*	400*	450*	500*	550*	600*	650*		
HBW 1/5	40	70	100	150*	170*	200*	250*	300*	350*	400*	450*	500*	550*	600*	650*		
Deviating scales or hardness can be ordered on custom request. Blocks can be supplied with NADCAP compliant grid.																	

* Hardness value is outside the scope of the ISO/ASTM standards

LARGE

BRINELL BLOCKS

AVAILABLE




















INDENTERS

ROCKWELL INDENTERS

ROCKWELL DIAMOND & BALL INDENTERS

UPI Rockwell Indenters are calibrated & DUAL-certified by UPI Laboratories traceable to National/International standards according to ISO 6508/2 & ASTM-E18 A3.



NAV ID		DESCRIPTION
UPI/6003		Rockwell diamond indenter ø3mm, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/6004		Rockwell diamond indenter ø3mm, L=12mm, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/6005		Rockwell diamond indenter ø6.35mm, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/7503		1/16" Embedded carbide ball indenter ø3mm, with 1 ball, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/7603		1/8" Embedded carbide ball indenter ø3mm, with 1 ball, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/7703		1/4" Embedded carbide ball indenter ø3mm, with 1 ball, acc. to ASTM-E18 A3
UPI/7506		1/16" Carbide ball indenter ø6.35mm, with 1 ball, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/7606		1/8" Carbide ball indenter ø6.35mm, with 1 ball, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/7706		1/4" Carbide ball indenter ø6.35mm, with 1 ball, acc. to ASTM-E18 A3
UPI/7806		1/2" Carbide ball indenter ø6.35mm, with 1 ball, acc. to ASTM-E18 A3
UPI/7808		1/2" Embedded carbide ball indenter ø3mm, with 1 ball, acc. to ASTM-E18 A3
UPI/2507		1/16" Carbide ball, for Rockwell ball indenter, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/2509		1/8" Carbide ball, for Rockwell ball indenter, acc. to ISO 6508/2 & ASTM-E18 A3
UPI/2514		1/4" Carbide ball, for Rockwell ball indenter, acc. to ASTM-E18 A3
UPI/2519		1/2" Carbide ball, for Rockwell ball indenter, acc. to ASTM-E18 A3



MACRO & MICRO VICKERS INDENTERS




INNOVATEST (Micro) Vickers Indenters are calibrated & DUAL-certified by UPI Laboratories Europe traceable to National/International standards according to ISO 6507/2 & ASTM-E92 A3.

KNOOP INDENTERS

INNOVATEST Knoop Indenters are calibrated & DUAL-certified by UPI Laboratories Europe traceable to National/International standards according to ISO 4545/2 & ASTM-E92 A3.



NAV ID		DESCRIPTION
UPI/8010		Vickers indenter ø6.35mm, acc. to ISO 6507/2 & ASTM-E92 A3
UPI/8105		Vickers indenter ø3mm, acc. to ISO 6507/2 & ASTM-E92 A3

NAV ID		DESCRIPTION
UPI/8205		Knoop indenter ø3mm, acc. to ISO 4545/2 & ASTM-E92 A3
UPI/8220		Knoop indenter ø6.35mm, acc. to ISO 4545/2 & ASTM-E92 A3
UPI/8221		Knoop indenter ø6.35mm, acc. to ISO 4545/2 & ASTM-E92 A3 Indenter is rotated 90°


Ø = shaft diameter for machine mounting.



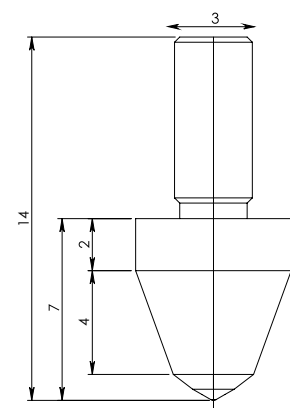
BRINELL BALL INDENTERS

INNOVATEST Brinell Indenters are calibrated & DUAL-certified by UPI Laboratories Europe BV traceable to National/International standards according to ISO 6506/2 & ASTM-E10 A3.

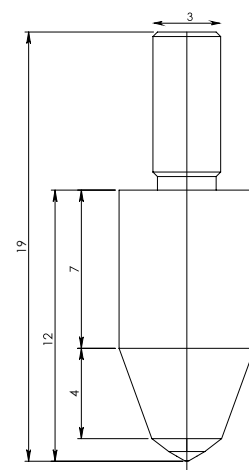


NAV ID		DESCRIPTION
UPI/7001		1mm Embedded carbide ball indenter ø3mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7006		2.5mm Embedded carbide ball indenter ø3mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7011		5mm Embedded carbide ball indenter ø3mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7000		1mm Carbide ball indenter ø6.35mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7005		2.5mm Carbide ball indenter ø6.35mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7010		5mm Carbide ball indenter ø6.35mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/7015		10mm Carbide ball indenter ø6.35mm, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/2005		1.0mm Carbide ball, for ø6.35mm indenters, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/2010		2.5mm Carbide ball, for ø6.35mm indenters, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/2015		5.0mm Carbide ball, for ø6.35mm indenters, acc. to ISO 6506/2 & ASTM-E10 A3
UPI/2020		10.0mm Carbide ball, for ø6.35mm indenters, acc. to ISO 6506/2 & ASTM-E10 A3

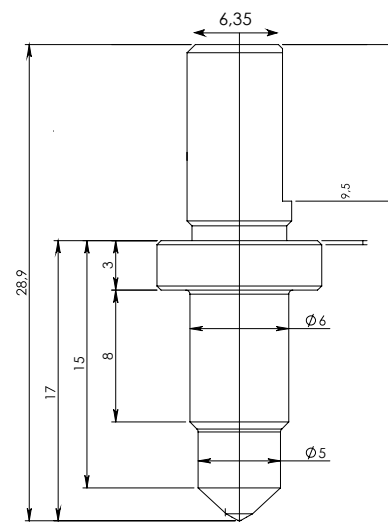
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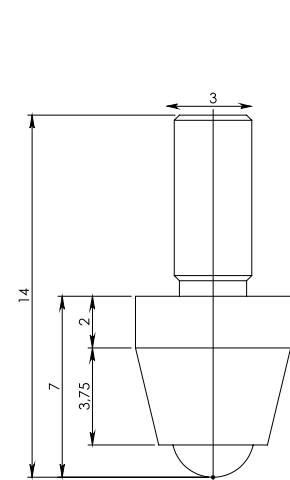
UPI/6003



UPI/6004



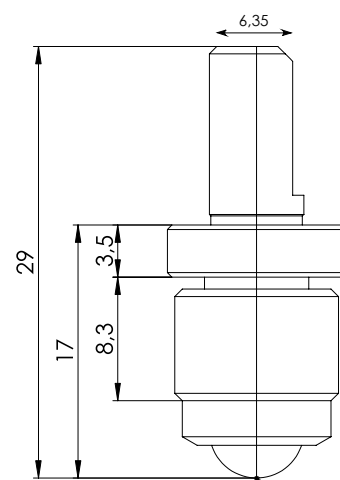
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UPI/7503

UPI/7603

UPI/7703

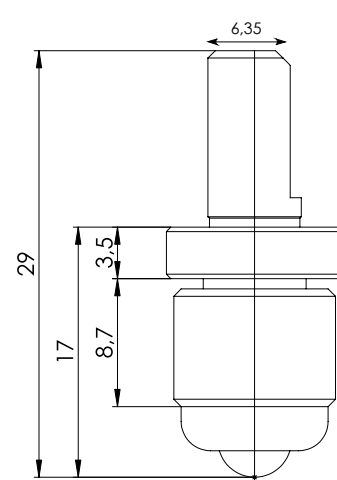


UPI/7506

UPI/7606

UPI/7706

UPI/7806

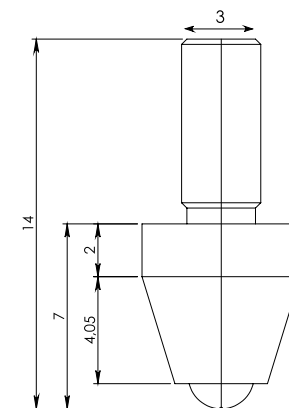


UPI/7005

UPI/7010

UPI/7015

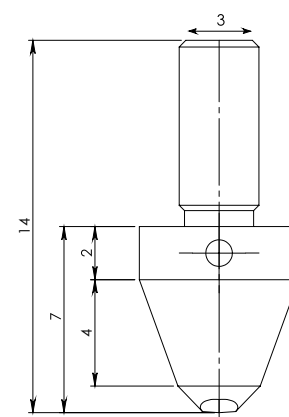
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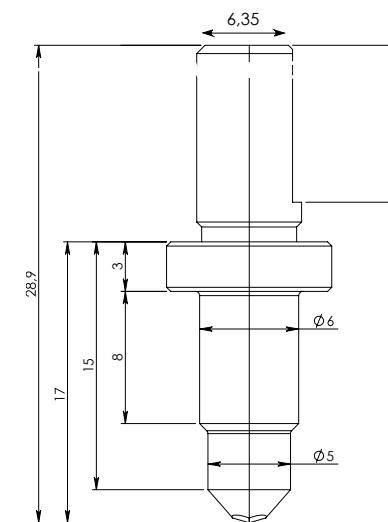
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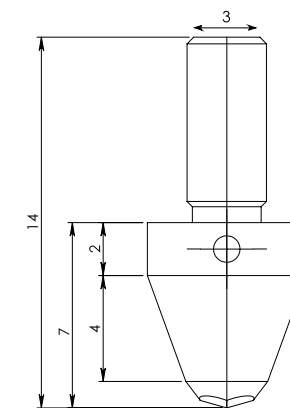
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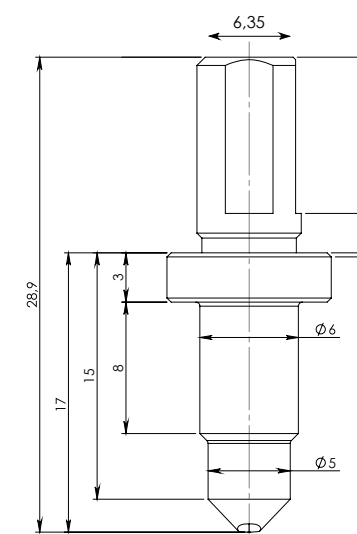
UPI/8205



UPI/8010



UPI/8105



UPI/8221

GENERAL SALES & SUPPLY CONDITIONS

PRICES

Are in EURO, excluding VAT, EX WORKS Maastricht, The Netherlands.
Subject to changes without prior notice.
Check our order confirmation for actual prices.

Our order confirmations are binding.
Quotes for transportation or transportation charges on account or invoice are for administration purpose only,
the delivery condition remains EX WORKS.

ORDERS

Confirmed orders can only be cancelled after our written consent.

DELIVERY TIME

All deliveries are from stock Maastricht. In those cases where a delivery time is indicated, these indications are for reference only and can
change without prior notice.
It is explicitly stated that UPI Laboratories Europe BV accepts no liability nor penalties in case of late deliveries.

DELIVERY

Special instructions are only accepted if stated in writing on your order and are subject to the approval of UPI Laboratories Europe BV and
reconfirmed in writing. All shipments travel for the full risk of Buyer regardless of the party that has instructed the forwarder.
UPI Laboratories Europe BV is explicitly not liable for loss or damage of any goods.

ADDITIONAL CHARGES

The following charges apply for orders less than net:
Euro 250,- costs Euro 25,-
Euro 100,- costs Euro 30,-
Euro 50,- costs Euro 35,-

SHIPMENTS

We reserve the right to send partial or combined shipments for each individual order.

PAYMENTS

Unless otherwise agreed, payments to be made in advance.
A discount of 2% applies for advance payments. In case of an agreed open account, payments within 30 days of invoice date unless
agreed otherwise in writing.
Late payments are subjected to an interest rate 3% a month. Goods delivered remain the unconditional property of UPI Laboratories
Europe BV until they are fully paid for.

**In addition to the general terms of sales & supply conditions applicable to commercial transactions, concerning the
delivery of certified indenters and reference hardness blocks, as per the scope of UPI Laboratories the following applies:**

When determining the approval of certified indenters, no consideration is given to measurement uncertainty. Regarding the
recalibration period, a recommendation is provided by the respective indenters, as advised by the relevant standards for indenters.
Concerning the validity of the calibrated reference hardness block, a recommendation is provided in the calibration certificate,
as advised by the applicable standards for reference hardness blocks. When determining the approval of reference hardness
blocks, no consideration is given to measurement uncertainty regarding the general requirements. The standards applied in the
certificates are recorded, including the year. If there is a change in standards, it is implemented within six months of publication.

CONFIDENTIALITY:

Unless otherwise provided by law, the Contractor is obligated to maintain confidentiality regarding information obtained during
the execution of the contract or of which they know or reasonably suspect that confidentiality is necessary. If, in the Contractor's
opinion, misunderstandings among third parties are imminent or there is a risk to persons or public health based on the results of
an investigation, this releases the Contractor from their obligation of confidentiality towards the involved individuals or relevant
authorities. The Contractor shall inform the Client of such disclosure.

This image shows a full page of a worksheet designed for handwriting practice. It consists of multiple horizontal rows, each defined by two parallel dotted lines. The rows are evenly spaced and extend across the entire width of the page, providing a guide for letter height and placement. There is no text or other markings on the page.This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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