

1st edition

2nd edition 23-8-2012

4th edition 23-9-2024

HB1p-DB1p added 12-2024

DOA 1916 T, 20 heller part C, die catalogue

3rd edition 17-3-2017

23-8-2011

Kees Uitenbroek

latest update 10-4-2025

part B, D & E have been omitted from 4th edition

Part C shows die-combinations in semi-alphabetical order, thus making it easier to search once you determined the subcategory of the H-side. HA3-DA are shown mostly in alphabetical order of the D side.



HB4a-DB3a coin alignment [73141](#)

Subcategories are bookmarked in pdf format.

Pictures are better seen if you enlarge the percentage in the toolbar of Acrobat Reader

Attention should be given that HA4d-DB3b starts life as a HA3 and that HA2d may show complete left L

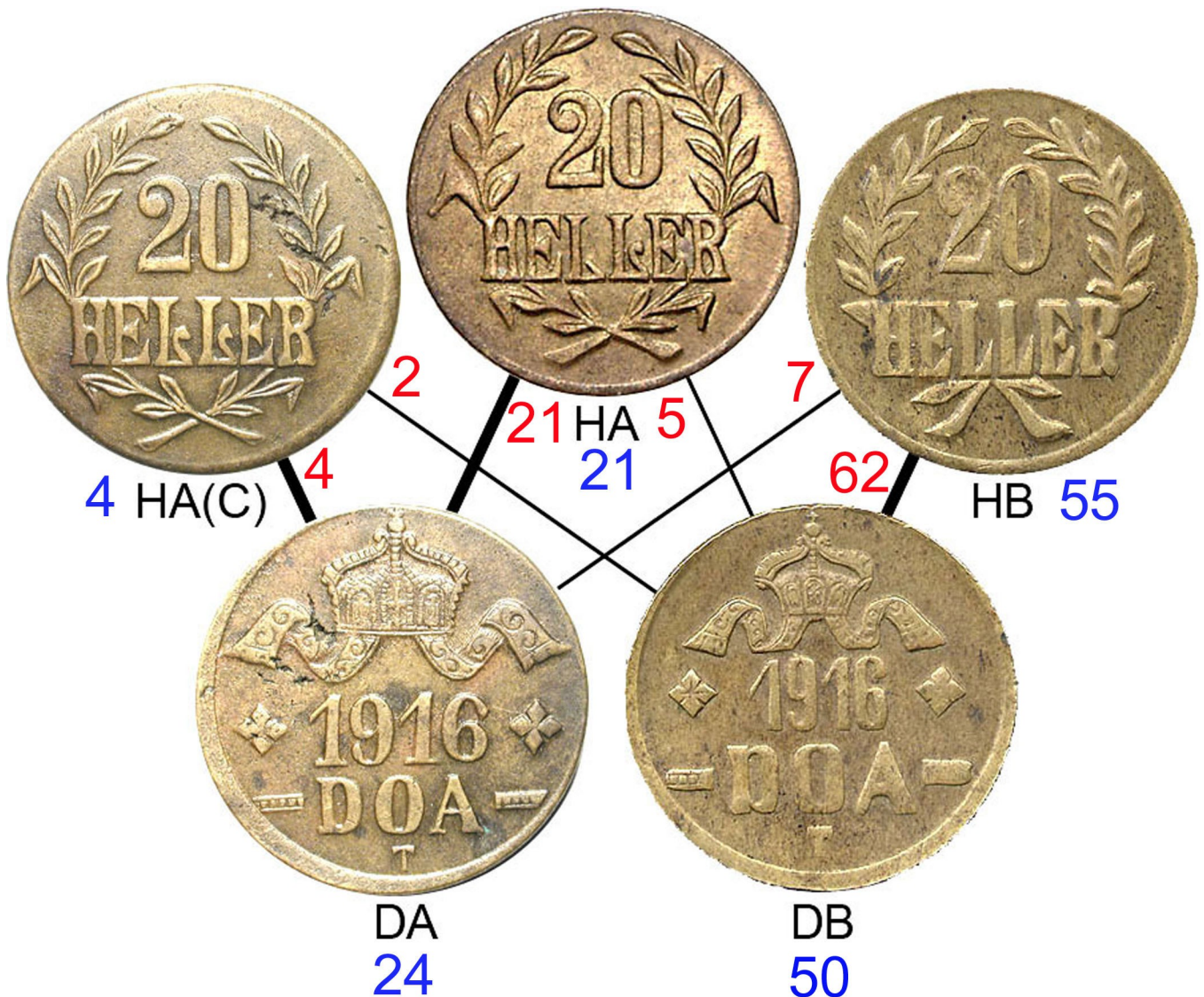
Blue numbers link in pdf-format direct to pictures on www.zeno.ru

From paper the number may be entered in search top left on that site.

Legend

C	tested copper coins known.
x of z	x copper coins found among a total of z coins of a die combination in my own original lot
>lb	strike-out direction top left
>lo	strike-out direction bottom left
>ro	strike-out direction bottom right
>--	no strike-out direction
cc	circle lines
vs	filing lines
hs	haircrack
br	piece broken off
ds	double struck die
zs	self-strike
HBA	die was used in combination with more then one die
HBA	die used in a single combination ends damaged, may or may not be replaced by an other die.
HBA	die used in a single combination, later replaced by an other die

die combinations



HA(C), curled tips on L, 4 inner leaves above H, 4 dies, 6 combinations
 HA, curled tips on L, 3 inner leaves above H, 21 dies, 26 combinations
 HB, pointed tips on L, 55 dies, 69 combinations

DA, large crown, 24 dies, 32 combinations
 DB, small crown, 50 dies, 69 combinations

Total 154 dies, 101 combinations, mintage 1634700

HA(C)-DA, 4 combinations, mintage 47331 +/- 5719, 2.9 % of total
 HA(C)-DB, 2 combinations, mintage 11032 +/- 2793, 0.7 % of total
 HA-DA, 21 combinations, mintage 303381 +/- 13261, 18.6 % of total
 HA-DB, 5 combinations, mintage 92349 +/- 7875, 5.6 % of total
 HB-DA, 7 combinations, mintage 125089 +/- 9067, 7.7 % of total
 HB-DB, 62 combinations, mintage 1055518 +/- 16315, 64.6 % of total

HA(C)1 >> HA4

25 dies



HA(C)1, 4 dies, leaf left of top of 2, LL complete



HA2, 3 dies, no leaf left of top of 2, left L incomplete, top of bottom triangle of right E sharp



HA2d, special case, upper part of foot of left L visible at lower level when die is young



HA3, 14 dies, top of bottom triangle of right E blunt



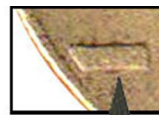
HA4, 4 dies, upper triangle of right E affected



HA4d, special case, upper triangle of right E not affected when die is young

DA1 >> DA11

24 dies



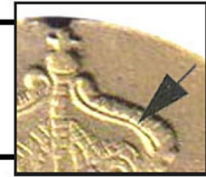
DA1, 2 dies

lower left ornament
complete, DA1



DA2, 1 die

lower left ornament
incomplete, DA2 > 11



line in top of crown right
complete, DA1 & 2



line in top of crown right
incomplete, cross complete,
DA3, 1 die



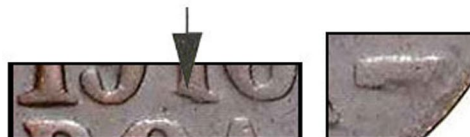
left sidebar of cross shifted
upwards, DA4, 1 die



DA1 > 4 & DA5a



left part of bottom of right 1 seems to
protrud from trousers, right lower
ornament (semi-) complete, DA5b



left part of bottom of right 1 missing,
right lower ornament, right lower ornament
near complete, DA6, 4 dies



left sidebar of cross
missing or vissible at a
lower level, DA5 > 11



left part of bottom of right 1 seems to
protrud from trousers, right lower
ornament "gun-turret", DA7, 1 die



left part of bottom of right 1 missing,
right lower ornament "gun-turret",
DA8, 6 dies

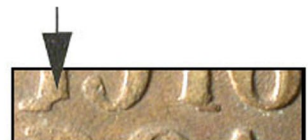
right lower ornament
"gun turret", DA7 > 11



right part of bottom of left 1 seems to
protrud from trousers, DA9, 2 dies



right part of bottom of left 1 drops,
HA10, 1 die



right part of bottom of left 1
missing, DA11, 3 dies

HB0 >> HB5

55 dies



HB0, 2 dies, big leaves



HB1, 12 dies, small top outer leaf left sharp



HB2, 11 dies, as HB1 but top outer leaf left blunt



HB3, 6 dies, as HB2 but 2nd from top outer leaf right blunt



HB4, 3 dies, as HB3 but at left side 3rd outer leaf from top misses part and left side of upper outer leaf may be at a lower level



HB5, 21 dies, as HB4 but upper outer leaf left thin

DB0 >> DB3

50 dies



DB0, 2 dies, bottom of crown protrudes beyond ribbon



DB1, 8 dies, bottom of crown doesn't protrude, right side of upgrowing part of right ribbon at same level as rest of ribbon



DB2, 21 dies, middle of right side of upgrowing part of right ribbon at slightly lower level than rest of ribbon



DB3, 19 dies, bulb at upgrowing part of right ribbon



HA(C)1a.cc.vs

Die +/- 27,6 mm

LL complete, inner leaf left of top of 2 fully attached to twig.

Low relief but all details clear and very fine.

Edges of hole in R round.

Right side of top end of feet of both L straight.

Circle lines in 20 and Heller.

Filing-lines to left of H and leaf below, near R and crossing of twigs.

DA1a.cc

Die +/- 27,0 mm

Lower left ornament complete, lower line in top of right side of crown complete

Low relief but lots of details.

Cross and left lower ornament touch rim. T and right lower ornament don't, although on later specimens this changes.

Circle lines in crown and between crown and right ribbon.

Mintage 25623 +/- 4237 – 12,0, 11,9, 11,8 (3x), 11,7, 11,5 (3x), 11,4 (2x) grams

689 # [89497](#) 689b # [76801](#) 689c # [96932](#) 689e # [112255](#) 690 # [62377](#) 691k? # [62386](#) 692 # [119593](#) 692a # [279074](#) c690c # [73152](#) c690d # [76798](#) c690e # [76799](#) c690f # [76802](#) 2014 # [149125](#) 2015 # [162535](#) 2016 # [176499](#) 2016x # [176264](#) 2017a # [199097](#) 2017b # [199096](#) 2018 # [215989](#) 2019a # [242576](#) 2019b # [242575](#) 2020a # [265271](#) 2020b # [265272](#) 2021 # [287524](#) 2022 # [306183](#) 2023 # [326988](#)

HA(C)1a must have been the first struck die in the HA series, since all other HA dies show square edges at the left side of the hole in R.

Copper/bronze HA(C)1a-DA1a are not to be expected

Krause's picture obverse C shows a HA(C)1a

700

HA(C)1b-DA3a (ex HB(C)1b-DA3b)

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DA3a was afterwards used in combination with HB3c

HA(C)1b Die +/- 28,0 mm? LL complete, inner leaf left of top of 2 fully attached to twig. Edges of left side of hole in R square. Top of foot of left L looks like rugby ball. First inner leaf above R short, which is very strange as many coins with incomplete LL still have this leaf semi-complete.	DA3a (ex DA3b) Die larger than 27,5 mm. Full cross on crown doesn't touch rim, lower line in top of right side of crown incomplete Right lower ornament misses small part of top, left one part of bott
	HA(C)1b.br.zs Very soon, in 2stages, a piece gets broken of at top of H-die, coin seems to wear toupee. Later self-strike of 6 occurs atop of H and additional cracks appear at the bottom.

Mintage 11744 +/- 2881 – 11,8, 11,7, 11,4 (4x), 11,2, 10,4 grams

698 # [62484](#) 698b # [112257](#) 699 # [62336](#) 700 # [62335](#) 701 # [70365](#) 702 # [175970](#) c699 # [86363](#) c700 # [76800](#)
2014 # [149126](#) 2015 # [162536](#) 2016 # [176500](#) 2016x # [176265](#) 2017 # [199098](#) 2018 # [215990](#) 2019 # [242577](#)
2020 # [265273](#) 2021 # [287525](#) 2022 # [306184](#) 2023 # [326989](#)

coin alignment



coin alignment: 817 # [134728](#) Mintage ? (1 known)
medal alignment see below

HA(C)1c was used before in combination with DB3u and afterwards with DB3v.
DA6a was used before in combination with HA3h, HB4d and HB3d

Coin alignment is extremely rare among 20 hellers. The mistake must have been noticed rather quickly and one of the dies must have been realigned to bring dies in usual medal alignment position.

820+

medal alignment



Shown is HA(C)1c.zs1c-DA6a

HA(C)1c.zs1a,b&c Self-strike of 19 of DA6a in 3 different positions. One of the dies shifted along vertical axis. Last remnants of filing lines between leaves of twig right. Line below R.	DA6a Left part of foot of right 1 missing. Bottom right always weak in medal alignment. Crown never better than this. In older versions of this catalogue this combination was named HA(C)1c-DA6d
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Mintage 9075 +/- 2534 – 11,8, 11,7, 11,5, 11,4, 11,3, 11,2, 10,1 grams.

Medal alignment: 818 # [70665](#) 819 # [73947](#) 819b # [62480](#) 819f # [134781](#) 820 # [62293](#) 820 LHH # [158881](#) 820 TB # [158882](#) 821 # [76046](#) c820 # [76797](#) 2014 # [149127](#) 2015 # [162537](#) 2016 # [176501](#) 2017 # [199093](#) 2018 # [215991](#) 2019 # [215991](#) 2020 # [265274](#) 2021 # [287526](#) 2022 # [306185](#) 2023 # [326990](#)



730

HA(C)1c-DB3u

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DB3u was used before in combination with HA2b. HA(C)1c was afterwards reused first in combination with DA6a and then with DB3v

HA(C)1c.vs

Double struck die, leaves visible in ER
 LL complete, inner leaf left of top of 2 fully attached to twig.
 Edges of left side of hole in R square.
 Top of foot of left L looks like rugby ball.
 First inner leaf above R long.
 Circle lines in 20 and Heller
 Filing lines in twig above R.
 Line of leaf below R and in right E still visible in combination with DA6d

DB3u

In combination with HA(C)1c there is (of course) no self-strike of 19 of DA6d above ER
 Horizontal and vertical filing lines on a fair part of the die.
 T and lower ornaments far from the rim.

Mintage 3737 +/- 1629 – 11,6, 11,4, 11,2 (2x), 11,1

729 # [205351](#) 730 # [89498](#) 730c # [104008](#) 730g # [62299](#) 2014 # [149156](#) 2015 # [162580](#) 2016 # [177289](#) 2016x # [176279](#) 2017 # [199094](#) 2018 # [215992](#) 2019 # [242537](#) 2020 # [265357](#) 2021 # [287517](#) 2023 # [327065](#)



Leaves in ER, under middle triangle of E and Bottom ER.

825

HA(C)1c-DB3v

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HA(C)1c was before used in combination with DB3u and DB6a, DB3v was used afterwards with HA3w

HA(C)1c.zs3

Combined self-strikes of DA6d and DB3v.
Zs2 is self-strike of DB3v in a slightly higher position

DB3v.vs.hs

Plenty of filing lines.
Haircracks between rim and right lower ornament and from this ornament over A and T

Mintage 7259 +/- 2274 – 11,6 (2x), 11,5 (2x), 11,4, 11,2, 10,8, 10,7 grams,

823 # [125025](#) 824 # [62270](#) 824 LHH # [159104](#) 824TB # [159105](#) 825 # [62067](#) 826 # [62272](#) 826c # [76795](#) 826k # [102447](#) 827 # [62503](#) c826c # [76796](#) 2014 # [149157](#) 2015 # [162572](#) 2016 # [177290](#) 2016x # [176298](#) 2017 # [199090](#) 2018 # [215993](#) 2019 # [242538](#) 2020 # [265358](#) 2021 # [287518](#) 2022 # [30602](#) 2023 # [327066](#)



Bottom right side of die has imploded.



DA2a was afterwards used in combination with HA2b

HA(C)1d.cc.vs

(half-) complete LL, upper part visible at a lower level.

Inner leaf left of top of 2 at the brink of breaking off. Leaf-stalk is torn.

Long leaf above R, top affected and visible at a lower level.

Plenty off circle lines, vertical filing lines at bottom between twigs.

DA2a.cc

Cross and lower line in top of right side of crown complete.

Lower ornaments incomplete.

Plenty of circle lines, with a hole in the middle

Mintage **890 +/- 796 (8 known)** – 11,3, 11,2 grams

714k # [88178](#) 715 # [63305](#) 715b # [158883](#) 2014 # [149128](#) 2015 # [162538](#) 2016x # [176266](#) 2017 # [199095](#) 2023 # [326991](#)

HA(C)1d is extremely rare in comparison with the other three HA(C)1 dies

September 2010 I had seen only two specimens, in comparison to 39 HA(C)1a, 12 HA(C)1b and 34 HA(C)1c (the last spread over 5 HA(C)1c-DB3u, 14 HA(C)1c-DA6d and 15 HA(C)1c-DB3v)

350

HA2a-DA1b

>lb



HA2a

Die diameter +/- 27,4 mm

Outer leaf above H and lower end of twigs nearly touch rim.

Long leaf above R, top affected and visible at a lower level.

DA1b.

Complete lower ornaments, left one doesn't touch rim.

Lower line in top of right side of crown complete

Mintage 15480 +/- 3304 - 11,8, 11,7 (2x), 11,5 (2x), 1,2 grams.

348ma # [112428](#) 348mb # [112429](#) 348y # [257617](#) 349 # [76788](#) 350 # [63246](#) 351 # [76789](#) 351DS # [153481](#) 352 # [85599](#) 20PM 350 # [112644](#) 20M1var 350M [158572](#) 2014 # [149129](#) 2015 # [162539](#) 2016 # [176503](#) 2016x # [176267](#) 2017 # [199099](#) 2018 # [216000](#) 2019 # [242580](#) 2020 # [265276](#) 2021 # [287528](#) 2022 # [306195](#) 2023 # [326992](#)



Dies fade

720

HA2b-DA2a

>lb



DA2a was used before in combination with HA(C)1d. HA2b was used afterwards with DB3u

HA2b.hs

Double struck die, right side and below heller.

Die diameter larger than 27,5 mm.

Lots of filing lines top right and bottom.

Haircrack between rim and leaf right.

DA2a

See HA(C)1d-DA2a

Die diameter +/- 27,5 mm ?

Some circle lines still clear.

Mintage 12811 +/- 3008 – 11,8, 11,7 (2x), 11,4, 11,3, 11,2 (3x) grams

719 # [77849](#) 720 # [62093](#) 721 # [76791](#) c720 # [62094](#) 720M1 HA2b-DA2aM # [175227](#) 2014 # [149130](#) 2015 # [162540](#) 2016 # [176504](#) 2016x # [176302](#) 2017 # [199100](#) 2018 # [216001](#) 2019 # [242581](#) 2020 [265277](#) # 2021 # [287529](#) 2022 # [306196](#) 2023 # [326993](#)



Shadow lines because of double striking of die

725

HA2b-DB3u

>lb



HA2b was used before in combination with DA2a. DB3u was used afterwards with HA(C)1c

HA2b.hs.hs
Additional haircrack bottom right.

DB3u see 730 HA(C)1c-DB3u

Mintage **356 +/- 503 (2 known)** – 11,4, 11,3 grams.

725 # [208540](#) 2018 # [216002](#) 2020 # [265359](#)



375

HA2d-DA4c (DA4c = DA4/5c? ?)

>lb



HA2d was used before in combination with DB3w. If DA4c = DA4/5c? it was used afterwards in combination with HA3a. Shown is HA2d.zs-DA4c, as yet no coins of this combination known without self-strike.

HA2d.zs

See also 370 HA2d-DB3w

Last remnants of top of foot of left L visible on some coins.

Self-strike of 19 above LE.

DA4c

Die diameter +/- 27,8 mm.

Plenty of filing lines. Similar lines between ribbon and left upper ornament make it difficult to accept DA4c is not DA4/5c?. See below.

Cross and left lower ornament free from rim. Left sidebar of cross higher than right one.

Lower line in top of right side of crown partly at a lower level.

Mintage 9431 +/- 2583 - 11,5, 11,4, 11,3, 10,6 grams.

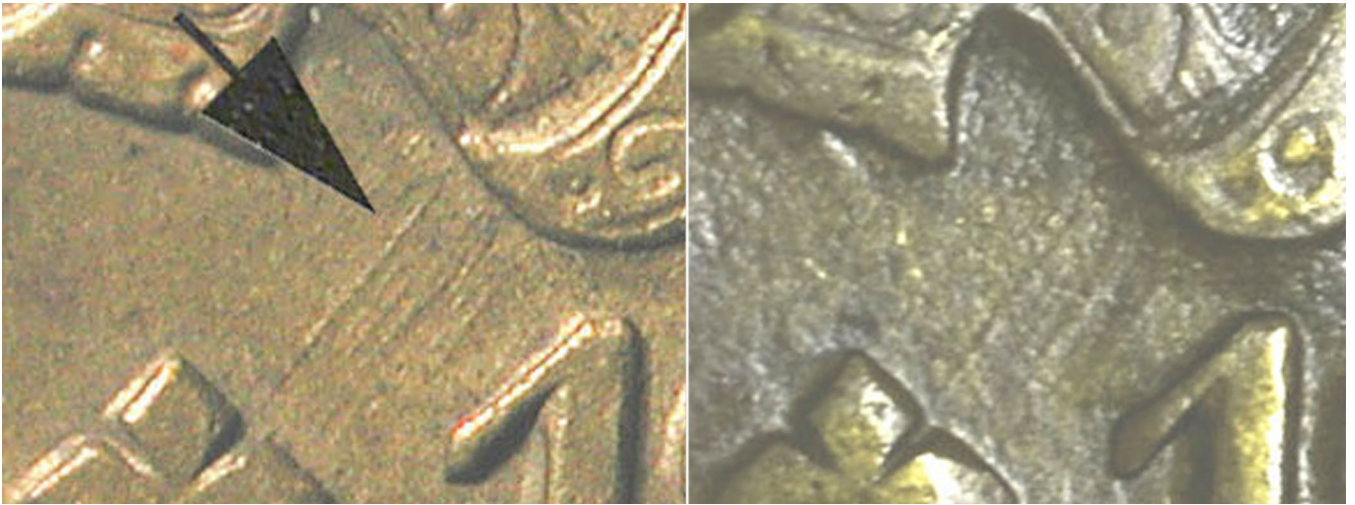
373k # [344484](#) 374 # [63200](#) 374p # [83922](#) 375 # [63158](#) 375c # [76784](#) 375d # [331253](#) 375DS # [112646](#) 376 # [331254](#) 2014 # [149131](#) 2015 # [162541](#) 2016 # [176567](#) 2016x # [176268](#) 2017 # [199101](#) 2018 # [216003](#) 2019 # [242582](#) 2020 # [265280](#) 2021 # [287530](#) 2022 # [306197](#) 2023 # [326994](#)



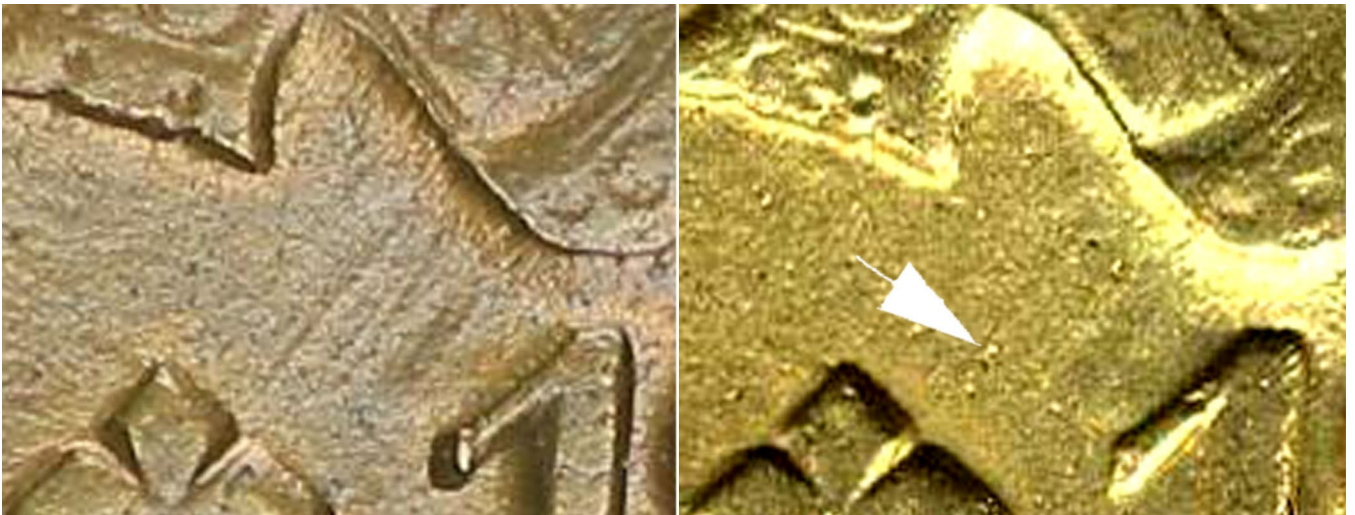
Dies fade away? Or are these coins just weakly struck? See below.

Coin 376 # [331254](#) is the only example that shows die deformation. Possibly H- and D-side don't do belong together though.

If the D-side dies used in combination with HA2d and HA3a are not one and the same, they are identical twins. For the time being it will be presumed they are one and the same.



Filing lines on DA4c in combination with HA2d.



Filing lines on DA4/5c? in combination with HA3a..



DA4c: Top of crown is always weak,
Lower line in right bow always visible.

DA4/5c?: Top of crown fully struck.
Only one coin shows lower line in right bow.

370

HA2d-DB3w

>lb



HA2d was afterwards used in combination with DA4c.

HA2d

Top of foot left L at lower level. Long leaf above R, top affected and visible at a lower level.

No inner leaf left of top of 2

Sharp point of lower triangle of right E visible at lower level.

Vertical filing lines, 2 circle lines bottom right.

DB3w

Large die

Mintage 16192 +/- 3378 - 11,6, 11,3, 11,2, 11,0 grams.

367g # [73353](#) 368 # [63201](#) 369 # [63202](#) 369m # [112427](#) 370 # [64076](#) 371 # [72737](#) c370c # [76783](#) 2014 #

[149158](#) 2015 # [162573](#) 2016 # [177291](#) 2016x # [176296](#) 2017 # [199091](#) 2018 # [216004](#) 2019 # [216004](#) 2020 #

[265360](#) 2021 # [287520](#) 2022 # [306023](#) 2023 # [327064](#)



Top of foot of left L nearly disappears.

Self-strike of R and leaf below left ornaments.

380

HA3a-DA4c (DA4/5c? = DA4c ?)

>lb



If DA4/5c? = DA4c, it was used before in combination with HA2d. HA3a was used afterwards in combination with DA6c.

HA3a.cc

Die diameter +/-27,7mm

Double struck die, shadow lines in and below HELLER. Plenty of circle lines.

Incomplete left L, no remnants of its tip. Long leaf above R, top affected and visible at a lower level.

DA4/5c? presumably = DA4c, see above.

Die diameter +/-27,8

Filing lines below left ribbon.

"Slope" above left part of crown.

Self-strike of 19 would not show above heller..

Lower line of right bow of crown as a rule not visible.

Mintage 11566 +/- 2859 - 11,4, 11,2 (2x), 10,9, 10,1

379 # [88120](#) 380 # [83923](#) 380b # [112647](#) 381 # [88121](#) 381e [158884](#) 2014 # [149133](#) 2015 # [162544](#) 2016 # [176568](#) 2016x # [176269](#) 2017 # [199103](#) 2018 # [216008](#) 2019 # [242584](#) 2020 # [265281](#) 2021 # [287531](#) 2022 # [306199](#) 2023 # [326995](#)



Self strike right of R and above ribbon.

750

HA3b-DA5a

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HA3b

Die larger then 27,7 mm.

Long leaf above R, top affected and visible at a lower level.

DA5a.zs

Double struck die, see double lines DOA.

Die diameter +/- 28mm ?

On some coins lower part of line in top of crown right is not visible.

Large haircrack over left ribbon.

Mintage 27402 +/- 4379 – 11,8, 11,2, 11,1 (3x), 11,0, 10,7, 10,5 grams.

748x # [257619](#) 749 # [62300](#) 750 # [62084](#) 750b # [85211](#) 750c # [69032](#) # 750MS # [86361](#) 751 # [63205](#) 751DS # [118979](#) c750 # [76780](#) 2014 # [149136](#) 2015a # [162545](#) 2015b # [162569](#) 2015c # [162568](#) 2016 # [176569](#) 2016x # [176270](#) 2017 # [199104](#) 2018 # [216010](#) 2019a # [242586](#) 2019b # [242587](#) 2020 # [265283](#) 2021 # [287533](#) 2022 # [306201](#) 2023 # [326997](#)



Self-strike both sides

425

HA3e-DA5b

>lb



HA3e was used before in combination with DA7a, DA5b afterwards with HA3k
 Dies shifted during striking, coin above = position 1, HELLER lower than 1916

HA3e

Double struck die, double lines in Heller, see 420 HA3e-DA7a.
 2 splash lines besides 2nd outer leaf above R confirm connection with HA3e-DA7a.

DA5b.vs

Die diameter ?
 Right lower ornament a combination of gun turret and complete form.
 Left part of bottom of right 1 lower (compare DA7a)
 Filing line between crown and 9

Mintage 17972 +/- 3557 - 11,7, 11,2 (2x), 11,1, 11,0, 10,4, 10,2 grams,

423c # [72514](#) 424 # [62979](#) 425 LHH # [62934](#) 425a # [73943](#) 425b # [73946](#) 425c # [112651](#) 426 # [70455](#) 426b [62936](#) c425 # [199726](#) 2014 # [149139](#) 2015a # [162548](#) 2015b # [162549](#) 2016 # [176572](#) 2017 # [199110](#) 2018 # [216014](#) 2019 # [242589](#) 2020 # [265285](#) 2021 [287535](#) # 2022 # [306203](#) 2023 # [326999](#)



Some coins show left filing line, some haircrack right.
 Rarely both are seen on one coin.

430

HA3k-DA5b

>lb



DA5b was used before in combination with HA3e

HA3k.cc.zs
 Circle lines in 20 and below LL.
 Plenty of filing lines
 Double line right side of R and leaf below.
 Self-strike of ornament right of R.

DA5b.hs
 Haircrack at left ribbon.
 Lines between bottom of crown and 91.
 Die damage, line through crown to top of right 1.
 Double rim top left.

Mintage 1601 +/- 1067 - 12,2, 11,8 (2x), 11,3, 10,7, 10,5, 10,3 grams

429 # [102420](#) 429DD # [257784](#) 429k # [191045](#) 430 # [105694](#) 2014 # [149147](#) 2015 # [162557](#) 2016 # [176580](#)
 2018 # [216022](#) 2020 # [265291](#)



Die crack bottom right.

760

HA3h-DA6a

>-- (lo)



DA6a was afterwards first used in combination with HB4d and then later with HB3d and HA(C)1c

HA3h.cc.vs
Short leaf above R.
Lots of filing and circle lines.
Short life span.

DA6a.cc.vs.hs
Cross almost touches rim. Ornaments and T have plenty space.
Haircrack between ribbon and middle ornament right.
Lots of filing and circle lines.

Mintage 2491 +/- 1331 – 11,1 grams.

760 # [73928](#) 760c # [72553](#) 760g [179938](#) 2015 # [162554](#) 2016 # [176576](#) 2017 # [199112](#) 2018 # [216019](#) 2019 # [242594](#) 2021 # [287541](#)



Haircrack H-side

390

HA3c-DA6b

>lb



Easy to confuse with HA3a-DA6c and HA3m-DA6e.

HA3c.cc

Die diameter +/- 27,4 mm

Plenty of circle lines, no hole in centre.

Shorter leaf above R.

outer top leaf left sharp and near rim.

DA6b.cc.vs

Die diameter ?

Part of bottom of right 1 missing, last remnant still visible.

Right lower ornament complete.

Plenty of circle lines, filing lines around

Mintage 10498 +/- 2725 - 12,1, 11,1 (2x), 10,3

389c # [97818](#) 390 # [63117](#) 390c # [77848](#) 390DS # [126620](#) 390e # [70165](#) 390g # [110721](#) 390gLL # [167454](#) 391 # [112309](#) 2014 # [149137](#) 2015 # [162546](#) 2016 # [176570](#) 2016x # [176271](#) 2017 # [199108](#) 2018 # [216013](#) 2019 # [242588](#) 2020 # [265284](#) 2021 # [287534](#) 2022 # [306202](#) 2023 # [326998](#)



die position reconstructed

Radically changed die position, almost identical to that of HA3a-DA6c

Strike-out direction >lb: raking of 2, H and first outer leaf above H, splash at leaves and top of crown.

385

HA3a-DA6c (ex 400 HA3d-DA6c)

>lb



HA3a was used before in combination with DA4c. Easy to confuse with HA3c-DA6b and HA3m-DA6e, Direction of die-axis would makes things easy if later HA3c-DA6b would not have nearly same direction.

HA3a

Long leaf above R, top affected and visible at a lower level. Leaves at right somewhat further from rim than on HA3c.

DA6c

Die larger than 27,8 mm.
Part broken off second 1. Full lower right ornament. Plenty of filing lines,

Mintage 11922 +/- 2902 - 11,7, 11,3, 10,9. 10,8, 10,2 grams.

384 # [79763](#) 385 # [63113](#) 386 # [70453](#) 386d # [112271](#) 386f # [215523](#) 2014 # [149138](#) 2015 # [162547](#) 2016 # [176571](#) 2017 # [199109](#) 2018 # [216009](#) 2019 # [242585](#) 2020 # [265282](#) 2021 # [287532](#) 2022 # [306200](#) 2023 # [326996](#)



Self-strike next to R disappears, a similar looking damage appears above the left square ornament.
Splash at leaf bottom right.

Harking of H and ER somewhat different from that on HA3m-DA6e. Harking at top of middle triangle of second E most helpful.

385+



410

HA3m-DA6e

>lb



Easy to confuse with HA3c-DA6b, which has at first same die position and with HA3a-DA6c, but direction of die-axis and shorter leaf above R makes things easy there.

HA3m
Short leaf above R

DA6e.cc
Strike out lines at cross
Left side of left lower ornament fades.

Mintage 14581 +/- 3208 - 11,9, 11,7, 11,4, 11,2 (2x), 10,9, 10,8, 10,6 grams.

410 TB # [63118](#) 410 LHH # [158887](#) 410 PB # [158888](#) 410g # [76777](#) 411 # [112590](#) 411a # [76778](#) 411DS # [113946](#) 20M1-410M # [70451](#) 2014 # [149148](#) 2015 # [162558](#) 2016 # [176581](#) 2017 # [199116](#) 2018 # [216023](#) 2019 # [242598](#) 2020 # [265292](#) 2021 # [287544](#) 2022 # [306211](#) 2023 # [327008](#)



Typical raking of H and R. Two lines at second outer leaf above R, quite similar to those found on HA3e.

420

HA3e-DA7a

>lb



HA3e was afterwards used in combination with DA5b.

HA3e.cc

Die diameter +/-27,5 mm

Double struck die.

Short leaf above R.

Circle lines at bottom.

DA7a.vs.bu

Die diameter ?

Filing lines in 91 and left of crown.

Bulb near lower left ornament.

"gun turret" lower ornament right

Mintage 15303 +/- 3285 - 11,7, 11,5, 11,2 grams.

419 # [62978](#) 420 # [62930](#) 420DS # [112652](#) 420g # [83083](#) 421 # [76743](#) 421c # [331830](#) 2014 # [180961](#) 2015 # [162550](#) 2016 # [176573](#) 2016x # [176272](#) 2017 # [199105](#) 2018 # [216016](#) 2019 # [242591](#) 2020 # [265286](#) 2021 # [287537](#) 2022 # [306204](#) 2023 # [327000](#)



Splash lines confirm connection with HA3e-DA5b
Similar splash lines HA3m

445

HA3f-DA8d

>lo



HA3f was afterwards used in combination with DA8c.

HA3f.cc

Die diameter +/-27,8 mm

Ample space between leaves and rim.

Short leaf above R.

Plenty of circle lines with hole in the middle.

Some filing lines.

DA8d.cc.vs

Die diameter ?

Left lower ornament and T touch rim.

Plenty of circle lines, some filing lines.

Right side looks like die has corroded heavily, possibly impression of positive die?

Haircracks below right ribbon over ornaments.

Mintage **356 +/- 503 (5 known)** - 11,3 grams.

446 # [87981](#) 2014 # [149141](#)



After the rains.

450

HA3f-DA8c

>lo



HA3f was before used in combination with DA8d, DA8c was used afterwards with HA3n

HA3f
See 445 HA3f-DA8d.
Hole disappears

DA8c.cc
Die diameter ?
Left lower ornament and T touch rim.
Plenty of circle lines, some filing lines.

Mintage 10392** +/- 2700 – 11,5 (2x), 11,4, 11,3, 10,6, 10,3, 10,0 grams ** (51/62)x12633 based on coins seen after 2014

449 # [62749](#) 449k # [84622](#) 450 LHH # [62808](#) 450DS # [160481](#) 451 # [62809](#) 2014 # [149140](#) 2015 # [162551](#) 2016 # [176574](#) 2016x # [176273](#) 2017 # [199106](#) 2018 # [216015](#) 2019 # [242592](#) 2020 # [265287](#) 2021 # [287538](#) 2022 # [306205](#) 2023 # [327001](#)



Strike-out direction bottom left

453

HA3n-DA8c

>lo



DA8c was before used in combination HA3f

HA3n

Die diameter +/- 27,5 mm

Plenty of circle lines, no central hole

Very similar to HA3f

Bottom of twigs weak

DA8c

See 450 HA3f-DB8c

Bulb below A

Mintage 2242** +/- 1250 – 11,0, 10,7 grams.

** (11/62)x12633 based on coins seen after 2014

452k # [317432](#) 453 # [77900](#) 453 PB # [158924](#) 2014 # [149149](#) 2015 # [162559](#) 2016x # [176277](#) 2017 # [199117](#)
2018 # [216024](#) 2019 # [242599](#) 2020 # [265293](#) 2023 # [327009](#)



Very similar to HA3i, but linking coins not yet found

435

HA3j-DA8e (ex HA3j-DA9e) >lb



As bottom of HELLER is not straight, line along bottom of E and bottom of right leg of R.
Dies get heavily deformed with rolling coin surfaces.

HA3j.cc.vs

Small die for a HA, 26,9 mm. Outer leaves left and lower end of twigs near rim.
Irregular circle lines over a fair part of the coin. Filing lines near rim to right of R.
HELLER deformed, LL bigger than H.

DA8e.cc.vs.hs (ex DA9e)

Die diameter ?
Some circle and filing lines.
2 heavy cracks top right.

Mintage 6762 +/- 2189 - 11,7, 11,5 (2x), 10,9, 10,5 grams.

435 # [62835](#) 436 # [73932](#) 435M1 HA3j-DA9eM # [175226](#) 436b # [180914](#) 2014 # [149146](#) 2015 # [162556](#) 2016 # [176578](#) 2016x # [176276](#) 2017 # [199114](#) 2018 # [216021](#) 2019 # [242596](#) 2020 # [265290](#) 2021 # [287543](#) 2022 # [306210](#) 2023 # [327006](#)



Lower part of H-die got somehow dubble struck. How ? Hairline below H between rim and leaf.

800

HA3i-DA8f (ex HA3i-DA9f) >lo



HA3i

Die diameter ?

Top outer leaf left near rim.

DA8f.cc.vs

This must be a small die, hardly big enough to accommodate the design.

Plenty of circle lines

Mintage 9964 +/- 2655 – 11,5, 10,7, **9,9, 9,8, 9,7, 9,3, 9,2, 8,8, 8,6, 8,3, 8,0, 7,8, 7,7, 7,3 (2x)** grams.

798# [70399](#) 798m # [112436](#) 798p # [112671](#) 799 # [70059](#) 800 # [61439](#) 800 LHH # [158885](#) 800c # [84896](#) 800e # [102992](#) 801DS # [118972](#) 2014 # [149145](#) 2015 # [162555](#) 2016 # [176577](#) 2016x # [176275](#) 2017 # [199113](#) 2018 # [216020](#) 2019 # [242595](#) 2020 # [265289](#) 2021 # [287542](#) 2022 # [306209](#) 2023 # [327005](#)



800+



Self-strike of leaves left side of crown

460

HA3g-DA9b

>lo



HA3g.cc

Die diameter +/- 27,5 mm

Short leaf above R.

Fine circle lines

DA9b.cc

Die diameter ?

Right side of bottom of left 1 cracked, Later this part seems to disappear, see below.

Fine circle lines, small hole in middle.

Haircrack below right upper ornament.

Mintage 23666 +/- 4047 - 11,6, 11,5, 11,4, 11,2, 11,1 (3x), 11,0 (2x), 10,8 (2x), 10,5, 10,4 grams.

460 # [62735](#) 460b # [216267](#) 460k # [76719](#) 460DS # [112270](#) 460DS # [344784](#) 461 # [62741](#) 461b # [70364](#) 461c # [62738](#) 461d # [346190](#) 20fM-461 # [72753](#) 2014 # [149143](#) 2015 # [162553](#) 2016 # [176575](#) 2016x [176274](#) 2017 # [199111](#) 2018 # [216018](#) 2019 # [242593](#) 2020 # [265288](#) 2021 # [287540](#) 2022 # [06207](#) 2023 # [327003](#)



Strike-out direction bottom left, see top of left 1. Left foot of A mutilated.
Bottom of left 1 disguising as DA10 found only on one coin.

830

HA3w-DB3v

>-- (lb?)



DB3v was used before in combination with HA(C)1c

HA3w.zs

Die diameter +/- 27,3 mm.

Starts with circle lines all over die.

Long leaf above R, top affected.

Incomplete left L.

HA3w.zs, early stage, self-strike of D below R and of ornament and ribbon besides leaves.

DB3v.hs

Die diameter ?

Some deformation of rim bottom right.

Very light signs of strike-out direction top left, incomparable with real >lb on other coins.

Mintage 28470 +/- 4462 – **12,5**, 12,3, 12,0, 11,6, 11,5 (2x), 11,2 (4x), 11,0 (4x), 10,7, 10,6, 10,5, 10,2 (2x), 10,4, **8,8** grams.

829 # [76697](#) 830 # [61396](#) 830k # [73945](#) 831 # [62505](#) 832 # [62743](#) 832b # [224494](#) c830c # [76698](#) 20PM-830 # [72757](#) 830M1
HA3w-DB3vM [175228](#) 2014 # [149159](#) 2015a # [162574](#) 2015 [162575](#) 2016 [176592](#) 2016x # [176297](#) 2017 # [199092](#) 2018 #
[216025](#) 2019a # [242540](#) 2019b # [242541](#) 2020a # [265362](#) 2020b # [265361](#) 2021 # [287521](#) 2022 # [306024](#) 2023 # [327067](#)



495

HA3x-DB3b

>lo



DB3b was used before in combination with HB4c and afterwards in combination with HA4d.

HA3x.vs.hs Filing lines all over. Haircrack top right. No double line at bottom of heller. Leaves nearer to rim as on HA4d. Outer leaves right double	DB3b See HB4c-DB3b
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Mintage 2135 +/- 1232 - 11,7, 11,3 grams.

495 # [84584](#) 495a # [257593](#) 2014 # [149160](#) 2015 # [162576](#) 2016 # [176593](#) 2016x # [176303](#) 2017 # [199087](#) 2018 # [216026](#) 2019 # [242542](#) 2020 # [265363](#) 2021 # [287522](#) 2023 # [327068](#)



850

HA4a-DA8a

>--



HA4a.cc

Die diameter ?

Top right of right E affected.

Circle and filing lines.

Bulb at bottom not seen on earliest coin.

Circle line seen between legs of R very similar to one in same place on HA4c.

DA8a.cc

Die diameter +/-27,6

Left 1 complete, right 1 misses part. Gun-turret right lower ornament.

Plenty of circle and filing lines.

Later coins self-strike of leaves above crown in different positions.

Mintage 19573 +/- 3710 – 12,2, 11,5, 11,4, 11,3, 11,1 (2x), 10,9, 10,8, 10,4, **9,6 (2x), 9,1, 8,8, 7,7, 7,5, 7,3** grams
 850 # [61412](#) 850 L# [158920](#) 850 L LHH # [158919](#) 850a # [73948](#) 850BR # [112437](#) 850c # [70469](#) 850d # [102993](#)
 850h # [73145](#) 851 # [70502](#) 851h # [113947](#) 20M1-851 # [72755](#) 2014 # <http://www.zeno.ru/showphoto.php?photo=149150> 2015 # [162560](#) 2016 # [176582](#) 2016x # [176278](#) 2017 # [199118](#) 2018 # [216027](#) 2019 # [242600](#)
 2020 # [265294](#) 2021 # [287545](#) 2022 # [306213](#) 2023 # [327010](#)

position 1
position 2

Die position shifting, actual coin position 1

850 +



Self-strike in position 1 disappears and new self-strikes in different positions occur.



Dies fade. Flaw at bottom of H-die gets stronger, self-strike of upper ornament at top of H.
On D-side self-strike of H between 6 and upper ornament

620

C 3 of 3

HA4b-DA10a

>lo



HA4b

Top right of right E affected. Looks like a sharp thorn.

HA10a.cc

Right side of bottom of left 1 points downwards,
right 1 misses part. Circle lines.

Mintage 56406 +/- 6226 – **13,2 (2x)**, 12,6, 12,4, 12,3, 12,2, 12,1 (2x), 12,0, 11,9 (4x) 11,8, 11,7 (4x), 11,6 (3x), 11,5, 11,4, 11,3 (2x), 11,1, (3x), 10,7 (2x), 10,1 (2x), 10,0 grams

618k # [191056](#) 619 # [62406](#) 619a # [150078](#) 619d # [141776](#) 620 # [62395](#) 621an # [112962](#) 620BRDS # [112435](#) 620c # [69058](#) 620DS # [86340](#)
620EC # [191061](#) 620ECa # [224360](#) 620f # [76517](#) 620g # [76550](#) 620k # [76575](#) 620p # [77888](#) 620q # [150077](#) 620r # [160081](#) 620ra # [191070](#)
620rb # [223427](#) 620s # [79765](#) 621 # [62403](#) c620b # [191805](#) c620c # [76516](#) c620d # [84630](#) c620f # [76551](#) 20M1-621 # [89866](#)
20M2-620 # [72751](#) 20PM-620 # [72756](#) 20P M 620P-M # [158573](#) SWHALL # [327934](#) 2014a # [149151](#) 2014b # [149152](#) 2015a # [162561](#) 2015b
[162562](#) 2015c # [162570](#) 2015d # [162571](#) 2016a # [176589](#) 2016b # [176590](#) 2016x # [176280](#) 2017a # [199121](#) 2017b # [199120](#) 2018a #
[216028](#) 2018b # [216029](#) 2019a # [242601](#) 2019b # [242602](#) 2019c # [242604](#) 2020a # [265297](#) 2020b # [265296](#) 2020c # [265298](#) 2021a #
[287546](#) 2021b # [287547](#) 2022a # [306215](#) 2022b # [306216](#) 2023a # [327011](#) 2023b # [327012](#)



Bottom of 2 blows up like an overstuffed sausage, while D-die fades.

All (known to me) positive tested copper HA-DA are HA4b-DB10a, no brass HA4b-DA10a are attested.

Nearly all copper HA-DA, offered as such in auctions, are HA4b-D10a

Whoever has an attested copper HA-DA that is not HA4b-DA10a, please inform me.

470

HA4c-DA11a

>lo



HA4c.cc

Die diameter +/- 27 mm is small for a HA-die.

Piece missing from top right of right E.

Plenty of circle lines still visible as raking starts bottom left.

DA11a.cc

Die diameter ?

Pieces missing of bottoms of both 1

Plenty of circle lines still visible as splash starts bottom right.

T and left lower ornament touch rim. .

Mintage 20996 +/- 3841 - 11,7, 11,5, 11,4 (2x), 11,3 (3x), 11,2 (2x), 11,0, 10,9, 10,5 (2x), **9,8** grams.

469 # [69164](#) 469c # [112687](#) 469e # [112688](#) 470 # [62717](#) 471 # [63517](#) 472 # [62718](#) 472c # [112689](#) 472e # [158320](#) c471c # [76619](#) 2014 # [149155](#) 2015a # [162563](#) 2015b # [162564](#) 2016 # [176591](#) 2016x # [176281](#) 2017 # [199119](#) 2018 # [216030](#) 2019 # [242605](#) 2020 # [265295](#) 2021 # [287548](#) 2022 # [306214](#) 2023 # [327013](#)



Self-strike of leaves above crown



DB3b was used before in combination with **HB4c** and HA3x.

Shifting dies, shown is not actual die position of this coin, but position for self-strike 3.

HA4d starts life as a HA3.

HA4d.vs Double lines at bottom of HELL. Leaves further away from rim than on HA3x. Lots of filing lines.	DB3b See HB4c-DB3b Fat T will lose weight as die grows older.
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Mintage 45196 +/- 5593 – **12,7, 12,5**, 12,4, 12,3 (2x), 12,2, 12,1, 11,9, 11,8 (3x), 11,7, 11,5, 11,4, 11,2 (3x), 11,1 (2x), 11,0 (2x), 10,8 (3x), 10,6 (2x), 10,5, 10,4 grams.

499 # [62980](#) 499c # [69075](#) 499k# [62499](#) 499ka # [86364](#) 499kb # [112695](#) 499kc # [62529](#) 499z # [191085](#) 500 # [63522](#) 500 LTC # [159100](#) 500 LTC2 # [159087](#) 500AS # [159086](#) 500DS # [114810](#) 501 # [62432](#) 502 # [89508](#) c499 # [86362](#) c499k # [76312](#) c499ka # [76316](#) c499kab # [337737](#) c501d # [76314](#) 20M1-499 # [72754](#) 2014 # [149161](#) 2015a # [162577](#) 2015b # [162578](#) 2015c # [162579](#) 2016a # [176594](#) 2016b # [176595](#) 2016x # [176304](#) 2017a # [199089](#) 2017b # [199088](#) 2017c # [198931](#) 2018a # [216031](#) 2018b # [216032](#) 2019a # [242543](#) 2019b # [242544](#) 2020a # [265365](#) 2020b # [265364](#) 2021 # [287523](#) 2022a # [306026](#) 2022b # [306027](#) 2023 # [327069](#)



500+

HA4d-DB3b.zs1 & zs2



Self-strike 1: self-strike of leaves at right side and to right of T
Most of self-strike 1 will disappear before next self-strike, only lines at right side stays visible.
Self-strikes of 2 and a leaf appear right and left of 1916 (zs1a).
Right E gets affected and starts to look more like HA4.
Raking of lefts side of H and left bottom of 2 starts.



Self-strike 2: self-strike in die position 1 of L between O and A

500++

HA4d-DB3b.zs3



Self-strike of L will disappear before next self-strike, self-strike of 2 and leaf left of 1 stay visible. Raking of H and 2 continues, punky splash appears atop O .



Self-strike 3: self-strike in die position 2 of L between O and A, just a little bit higher and more to the left than zs2

HA die fades away to look a real HA4.

All (known to me) positive tested copper HA-DB are HA4d-DB3b.zs3.

As yet no copper coins with electrical conductivity over 46 MS/m known.

Nearly all copper HA-DB, offered as such in auctions, are HA4d-DB3b.zs3

Whoever has an attested copper HA-DB that is not HA4d-DB3b.zs3, please inform me.

info@ptbvhrokerspartij.nl

020

HB0a-DB0a.zs2

>lb (?)



HB0a

0-series

Die diameter +/-26,5 mm (coins 28,8-29,1)

Large leaves.

Double lines left side of table and of triangles of L. Probably double struck die.

2 has water in its brain.

DB0a.vs

0-series

Die diameter +/- 26,8 mm

Oval base of crown.

T against hill caused by multiple self-strike.

Filing lines below crown and right of A.

Mintage **175 +/- 356 (5 known)** - 12,2, 12,1, 11,5, 10,7 grams020 # [60579](#) 020b # [309769](#) 021 # [89409](#)

030

HB0b-DB0b

>lb



HB0b.cc.vs

0-series

Die diameter +/- 26,5 mm

Plenty of circle lines. Line below R.

Large leaves.

Table below HELLER.

DB0b.cc

0-series

Die diameter +/- 26,8 mm

Oval base of crown. Right middle ornament unfinished. Plenty of circle lines.

Self-strike of leaves right of 6

Raking of left ornaments.

Mintage 0 +/- 356 (1 known) – 10,8 grams

030 # [60580](#)

040

HB1a-DB1a

>lb



Rotating die positions

HB1a

Die diameter +/-26,5 mm

Double line bottom of right twig/ribbon

Both upper outer leaves sharp.

Rim deformation at bottom.

DB1a.vs

Die diameter +/- 26,5 mm

Filing lines between crown and 91 and left of 19.

Small triangle between 1 and 6.

Mintage 6940 +/- 2218 - 12,1, 12,0, 11,7, 11,6 (2x), 11,3, 11,2 grams

040 # [72177](#) 040c # [72178](#) 040f # [189100](#) 2014 # [149169](#) 2015 # [162631](#) 2016 # [176799](#) 2016x # [176305](#) 2017 # [199123](#) 2018 # [16059](#) 2019 # [242608](#) 2020 # [265556](#) 2021 # [287494](#) 2022 # [306469](#) 2023 # [326835](#)

Strike-out direction >lb = top left, raking of bottoms of holes of O and R and of leaf above R.



Triangle between 1 and 6, not seen on all coins.

050

HB1b-DB1b

>lb



DB1b was used afterwards in combination with HB1w

HB1b

Die diameter +/- 26,5 mm.

Double line bottom of HELL and leaves below.

Both upper outer leaves sharp.

No rim deformation at bottom.

DB1b.vs

Die diameter +/- 26,5 mm.

Horizontal of cross touches rim.

Filing lines left of 1

Mintage 28862 +/- 4489 – 12,6, 11,9, 11,5, 11,4 (2x), 11,2, 11,1 (2x) grams

050 # [72179](#) 050d # [85436](#) 050h # [84894](#) 050k # [85434](#) 050m # [72182](#) 2014 # [149172](#) 2015a # [162633](#) 2015b # [162632](#) 2016 # [176800](#) 2016x [176306](#) 2017 # [199124](#) 2018 # [216060](#) 2019a # [242609](#) 2019b # [242610](#) 2020 # [265557](#) 2021 # [287495](#) 2022 # [306470](#) 2023 # [326837](#)



Raking of ELLER

Splash at top of 1916

060

HB1c-DB1c

>lb



Tentative die combination sequence HB1c-DB1c > HB1c-DB1v > HB1c-DB1y

HB1c.vs Die diameter +/-27,0 mm. Shadow lines bottom of LLER, twigs/ribbons and at R and outer leaves right. Left outer top leaf sharp, right one blunt. Irregular lines in 20 Filing lines right, between ER and twig/ribbon and directly left of left twig/ribbon.	DB1c Die diameter +/- 26,5 mm. Horizontal of cross visible, nearly touching rim. Filing line right of T. Double line bottom left lower ornament. Early coins no haircrack.
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Mintage 3559 +/- 1590 – 11,6, 11,4, 11,2 grams.

060 # [72183](#) 061 # [85577](#) 061c # [72184](#) 2014 # [149173](#) 2015 # <http://www.zeno.ru/showphoto.php?photo=149173> 2016 # [176801](#) 2017 # [199125](#) 2018 # [216061](#) 2019 # [242611](#) 2020 # [265560](#) 2021 # [287496](#) 2022 # [306471](#) 2023 # [326838](#)

062

HB1c-DB1v

>lb



Tentative die combination sequence HB1c-DB1c > HB1c-DB1v > HB1c-DB1y

HB1c.vs

See also 060 HB1c-DB1c and 065 HB1c-DB1y.
Filing line between ER and twig/ribbon.

DB1v

Full cross visible.
Filing lines left of crown.

Mintage 3381 +/- 1550 – 11,6, 11,2 grams

062 # [72185](#) 062b # [227109](#) 2014 # [149176](#) 2015 # [162635](#) 2017 # [199126](#) 2018 # [216066](#) 2019 # [242612](#) 2020 # [265561](#) 2022 # [306472](#) 2023 [326839](#)

065

HB1c-DB1y

>lb



Tentative die combination sequence **HB1c-DB1c** > **HB1c-DB1v** > **HB1c-DB1y**
 Considerable shifting of die position, shown is somewhere in the middle, see 064c # [72187](#).

HB1c.vs

See also 060 HB1c-DB1c and 062 HB1c-DB1v.

DB1y.vs.br

No cross visible.

Circle lines between D and O.

Piece broken off die at left lower ornament.

Mintage 26512 +/- 4309 – 11,7, 11,5 (2x), 11,4, 11,3 (2x), 11,2 (2x), 11,1, 10,8, 10,7, 10,6 grams
 064 # [72186](#) 064b # [77882](#) 064c # [72187](#) 064k # [72109](#) 064p # [62731](#) 065 # [72110](#) c065c # [72111](#) 20DE-065 # [119030](#) 20MZ-065 [84616](#) 2014 # [149177](#) 2015a # [162636](#) 2015b # [162637](#) 2016 # [176802](#) 2016x # [176307](#) 2017 # [199127](#) 2018 # [216067](#) 2019a # [242613](#) 2019b # [242614](#) 2020 # [265562](#) 2021 # [287498](#) 2022 # [306473](#) 2023 # [326840](#)



100

HB1d-DB1d

> ?



Some shifting in die position observed

HB1d.cc

Die diameter +/- 26,5 mm.

Left outer top leaf sharp, right one blunt.

Plenty of circle lines.

DB1d.cc

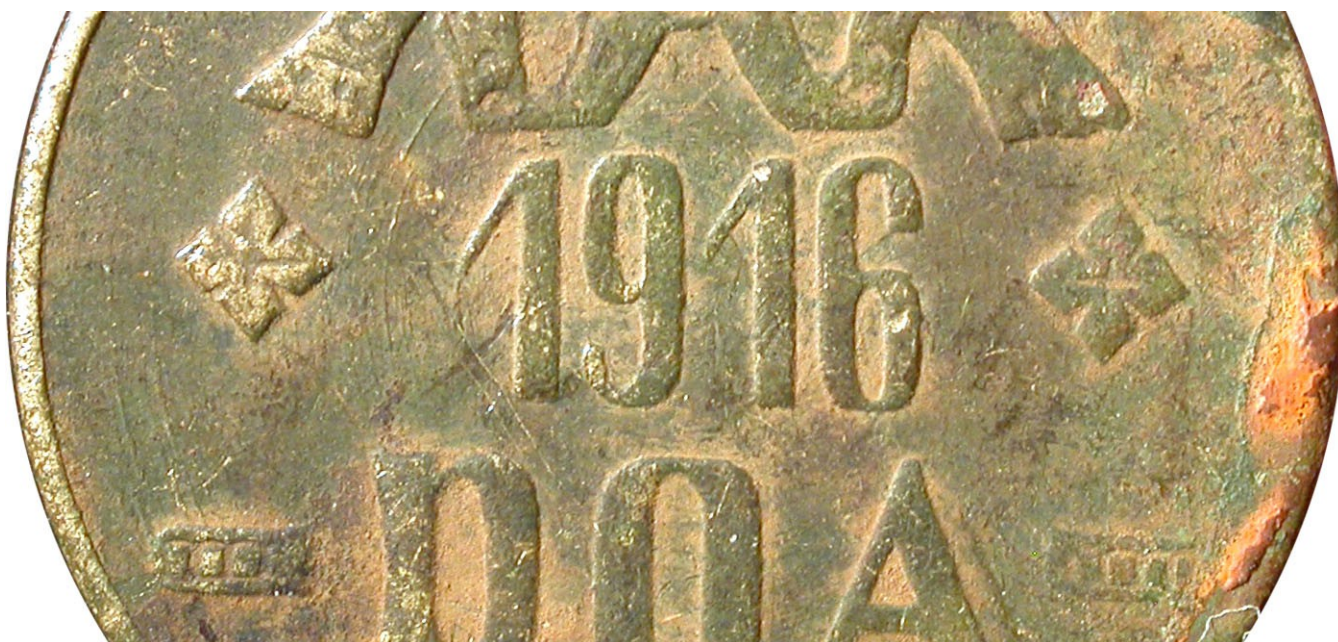
Die diameter +/- 27,0 mm.

Ample space between left lower ornament and rim. Full cross touches rim.

Plenty of circle lines.

Mintage 1957 +/- 1180 - **12,7**, 11,7, 11,5, 11,3, 11,2, 11,1 grams

099 # [88122](#) 099a # [279023](#) 100 # [72061](#) 101 # [72062](#) 102 # [83924](#) 2015 # [162638](#) 2016 # [176803](#) 2016x # [176308](#) 2018 # [216068](#) 2019 # [242615](#) 2020 # [265559](#) 2022 # [306474](#) 2023 # [326841](#)





HB1e was afterwards used in combination with DB2a

HB1e.cc
Die diameter +/- 26,0 mm.
Left outer top leaf sharp, right one blunt.
Twigs/ribbons nearly touch rim.
Circle lines in 20 and HELLER

DB1x
Die diameter +/- 26,3 mm.
Sidebars of cross off die. On earliest coins stem of cross visible.
Cracks not visible on earliest coins.

Mintage 8363 +/- 2433 – 11,7 (2x), 11,6, 11,5 (3x), 11,3, 11,1, 10,8 grams

114k # [123008](#) 114p # [190617](#) 115 # [72056](#) 116 # [88689](#) 116a # [279457](#) 117 # [215687](#) 2014 # [149179](#) 2015 # [162639](#) 2016 # [176804](#) 2017 # [199129](#) 2018 # [216069](#) 2019 # [242616](#) 2020 # [265564](#) 2021 # [287500](#) 2022 # [306475](#) 2023 # [326842](#)



Piece broken off D-die top right.
Later also piece broken off bollom left



HB1e was used before in combination with DB1x. Shifting die position.

HB1e.cc

See 115 HB1e-DB1x

Left outer top leaf sharp, right one blunt.

Twigs/ribbons nearly touch rim.

Circle lines in 20 and HEL

DB2a.vs

Die diameter +/- 27,0 mm.

Filing lines left of 19 and circle lines left of O and below 1916.

Undamaged die very rare

Mintage 51602 +/- 5964 – 12,3, 11,9 (2x), 11,7, 11,6, 11,5 (2x), 11,4 (2x), 11,3 (2x), 11,2 (3x), 11,1 (2x), 11,0 (4x), 10,9, 10,8, 10,7 (3x), 10,4, 10,0 grams.

118 # [120649](#) 118b # [227174](#) 119 # [70503](#) 119b # [227175](#) 120 # [72034](#) 120k # [90076](#) 121 # [90077](#) 121 DS # [210021](#) c120 # [90078](#) c120c # [72030](#) c120f # [72031](#) c120h # [72029](#) 20M1-120 # [89867](#) 20MZ-120 # [84616](#) 20P M 120P-M # [173923](#) 2014a # [149180](#) 2014 b # [149181](#) 2015a # [162640](#) 2015b # [162641](#) 2015c # [162650](#) 2015d # [162651](#) 2016a # [176805](#) 2016b # [176806](#) 2016x # [176309](#) 2017a # [199131](#) 2017b # [199130](#) 2018a # [216070](#) 2018b # [216071](#) 2019a # [242619](#) 2019b # [242620](#) 2019c # [242621](#) 2020 # [265565](#) 2021a # [287501](#) 2021b # [287506](#) 2022a # [306476](#) 2022b # [306477](#) 2023a # [326843](#) 2023b # [326844](#)



Piece broken off die at left side



HB1f was afterwards used in combination with DB2c.

HB1f.vs

Die diameter +/- 26,5 mm.

Left outer top leaf sharp, right one blunt.

Space between twigs/ribbons and rim.

Filing line ? above right E. Horizontal filing line

above 0, haircrack right of R.

DB2b.hs

Die diameter +/- 27,0mm.

Sidebar of cross free from rim.

Left lower ornament near rim.

Circle lines in 1916 and D.

Mintage 1246 +/- 941 (12 known) – 12,2, 11,3, 11,2 grams.

129k # [90074](#) 130 # [72027](#) 2015 # [162642](#) 2017 # [199132](#) 2018 # [216072](#) 2020 # [265563](#) 2021 # [287502](#) 2022 # [306478](#)



Secondary haircrack top right.

130+



Piece broken off

135

HB1f-DB2c

>lb (light)



HB1f was used before in combination with Db2b, DB2c was afterwards used in combination with HB1g and HB2a.

HB1f.vs.hs

Horizontal filing line above 0

Haircrack along 2nd and 3rd outer leaf above R.

Haircrack right of R

DB2c.vs

Die diameter +/- 26,8 mm.

Sidebars of cross touch rim.

Rough filing lines in 1916

Mintage 3915 +/- 1667 - 11,5, 10,8 grams

135 # [97817](#) 135b # [189099](#) 135d # [342607](#) 20M2 135M # [141920](#) 2014 # [149186](#) 2015 # [162643](#) 2016 # [176807](#)

2016x # [176310](#) 2017 # [199133](#) 2018 # [216073](#) 2019 # [242618](#) 2020 # [265566](#) 2023 # [326845](#)



140

HB1g-DB2c

>lb (light)



DB2c was used before in combination with HB1f and afterwards with HB2a

HB1g.cc

Die diameter +/- 27,0 mm.

Left outer top leaf sharp, right one blunt, tip wide.

Double lines at outside of twig right.

Some circle lines in 20 and left twig.

DB2c.vs

Die diameter +/- 26,8 mm.

Sidebars of cross touch rim.

Rough filing lines in 1916

Mintage 20819 +/- 3825 - 12,0, 11,9 (2x), 11,8 (2x), 11,7 (2x), 11,6, 11,5, 11,4 (2x), 11,3, 11,1, 10,9, 10,8, 10,6 grams.

140 # [71971](#) 140b # [72025](#) 140c # [71972](#) 140k # [72024](#) 141 # [72020](#) 141c # [72021](#) 142 # [72022](#) c141c # [72023](#)
 2014 # [149187](#) 2015a # [162644](#) 2015b # [162645](#) 2016 # [176808](#) 2016x # [176311](#) 2017 # [199134](#) 2018 # [216074](#)
 2019 # 2020 # 2021 # 2022 # 2023 #



Piece broken off H-die.

Haircracks in D-die.

080

HB1p-DB1p

>ro



First seen 2024

HB1p.cc.hc
Die diameter +/-26,5 mm.
Double line bottom of LLER
Both upper outer leaves sharp.
Plenty of circle lines
Outer top leaf left less sharp then HB1a & 1b
Raking of 2nd inner leaf above H
Haircrack along outer leaves right ?

DB1p.cc
Plenty of circle lines

Mintage **175 +/- 356 (1 known)** – 11,6 grams
080 # [348253](#)

105

HB1s-DB2t

>lb



DB2t was used afterwards in combination with HB1t.

HB1s

Double lines bottom right.

Twigs at bottom near rim.

Smallish die.

DB2t.vs

Die diameter +/- 27,5 mm.

Cross does not touch rim.

Rough filing lines in 1916 and line between left middle ornament and 1.

Dot in hole of A.

Mintage **356 +/- 503 (4 known)** - 11,4 grams

105 # [119188](#) 2014 # [149188](#) 2016x # [176312](#)



DB2t was used before in combination with HB1s.

HB1t.cc.vs.br

Die diameter +/- 26,7 mm.

Left outer top leaf sharp, right one blunt, tip wide.

Double lines at outside of twig right, tip of outer leaf above R split.

Some circle lines in left twig and left of 20.

DB2t.vs.br

Haircracks left and right. Later piece broken off bottom left.

Mintage **890 +/- 796 (7 known)** - 11,5, 10,9 grams

107k # [158301](#) 107s # [300405](#) 108 # [78200](#) 108a # [337644](#) 2015 # [162647](#) 2018 # [216079](#) 2019 # 2020 # 2021 # 2022 # 2023 #



Piece broken off at bottom, haircrack proceeds to left.

Piece broken off bottom left.

016

HB1u-DB1u



Mirrored images of HB1u & DB1u, these dies were probably never used to strike coins

HB1u

Pointed tip of leaf top right

Almost similar to H1b-D1b, but different circle lines.

DB1u

Lower left ornament some distance from rim

Mintage **0 (0 known)**

016a # [112594](#) 016b # [112593](#)



Possibly kept in reserve in case the positive die would break.

053

HB1w-DB1b

>lb



DB1b was used before in combination with HB1b. Later coins show slightly shifted die position

HB1w.ds, double struck die
 Die diameter +/-26,5
 Upper right outer leaf blunt. Double lines at bottom of ELLER and leaf & twig bottom right.
 Also lighter line below left leaf.
 Small pits in lower ends of twigs/ribbons

DB1b
 Splash above 1's, right of 6 and between left ribbon and crown fades

Mintage 11922 +/- 2902 – 12,4, 12,3, 11,9 (2x), 11,7, 11,5 (2x), 11,4 (2x), 10,5 grams

052q # [102295](#) 053 # [72217](#) 053c # [72214](#) 053f # [72216](#) 053k # [79819](#) 053q # [102299](#) c053c # [72215](#) 20M1-053
[75324](#) 2014 # [149191](#) 2015 # [162648](#) 2016 # [176809](#) 2016x # [176313](#) 2017 # [199137](#) 2018 # [216080](#) 2019 #
[242625](#) 2020 # [265558](#) 2021 # [287508](#) 2022 # [306483](#) 2023 # [326850](#)



Nice slope for skiing below LLER

090

HB1z-DB1z

>lb



Some shifting and rotation.

HB1z.vs

Die diameter +/-26,5

Upper left outer leaf sharp, upper right outer leaf blunt (but looking sharp sometimes).

Plenty of filing lines bottom left

DB1z.vs

Die diameter +/-26,3

Horizontal of cross outside die.

Plenty of filing lines left side.

Mintage 9253 +/- 2559 - 13,0, 12,8, 12,6, 12,3, 12,1, 12,0 grams

090 # [83818](#) 090b # [190610](#) 090M1 # [72226](#) 090p # [76877](#) 2014 # [149192](#) 2015 # [162649](#) 2016 # [176810](#) 2016x # [176314](#) 2017 # [199138](#) 2018 # [16081](#) 2019 # [242626](#) 2020 # [265570](#) 2021 # [287509](#) 2022 # [306484](#) 2023 # [326851](#)



145

HB2a-DB2c

>lb (light)



DB2c was used before in combination with HB1f and HB1g

HB2a.hs

Die diameter +/- 26,7 mm.

Left outer top leaf blunt..

Haircracks from rim along outer leafs left and from outer leaf above R over R to leaf below, Some circle lines in left twig.

DB2c.hs

See 140 HB1g-DB2c

Mintage 11922 +/- 2902 - 12,7, 12,3, 12,0, 11,9, 11,6, 11,5, 11,2, 11,1, 10,8 grams

145 # [71958](#) 145c # [71959](#) 146 # [70505](#) 146c # [71960](#) 2014 # [149196](#) 2015 # [162688](#) 2016 # [177099](#) 2016x # [176319](#) 2017 # [199141](#) 2018 # [216090](#) 2019 # [242634](#) 2020 # [265616](#) 2021 # [286853](#) 2022 # [306502](#) 2023 # [326895](#)



Piece broken off H-die top left.

160

HB2b-DB2d

>lb (light)



Shifting die position, line on D-die later lower.

HB2b.ds.cc

Die diameter +/- 27,2 mm.

Left outer top leaves blunt.

Double lines at outside of twig right.

Lot of circle lines in 20, heller and below.

Some roughness in bottom of 0.

DB2d

Die diameter +/- 26,5-26,7 mm.

Cross doesn't touch rim.

Mintage 43239 +/- 5474 – 11,9, 11,8 (2x), 11,7, 11,6 (3x), 11,5, 11,4, 11,3, 11,2 (2x), 11,1 (3x), 10,8, 10,6, 10,5 grams.
 159 # [73132](#) 160 # [71878](#) 160k # [71885](#) 160m # [190664](#) 160xp # [101540](#) 161 # [71879](#) 162 # [71883](#) c160c # [71858](#) c161c # [99681](#) 0006ECCE # [158198](#) 2014 # [149197](#) 2015a # [162689](#) 2015b # [162687](#) 2015c # [162686](#) 2016a # [177102](#) 2016b # [177100](#) 2016x # [176320](#) 2017a # [199143](#) 2017b # [199143](#) 2018a # [216091](#) 2018b # [216092](#) 2019a # [242636](#) 2019b # [242637](#)
 2020a # [265617](#) 2020b # [242637](#) 2021a # [286854](#) 2021b # [286855](#) 2022 # [306503](#) 2023 # [326896](#)



Dies fade away.

170

HB2c-DB2e

>lo (light)



HB2c.cc.vs

Die diameter +/- 27,0 mm.

Left outer top leaf blunt, leaf below starts sharp with shadow line, but blunts fast.

Circle lines in 20, heller and twigs.

Filing lines between twig and rim top right.

DB2d.cc.vs.hs

Die diameter +/- 27,0 mm.

Cross does nearly touch rim.

Filing lines in 1916.

Circle lines in DOA and near crown.

Haircracks already visible.

Mintage 41103 +/- 5340 - 12,2, 11,8, 11,7 (2x), 11,6 (4x), 11,5 (4x), 11,4 (3x), 11,3 (2x) grams.

169 # [71854](#) 170 # [71855](#) 171 # [71856](#) 172 # [71857](#) 172DS # [125444](#) c170c # [71841](#) c171c [71842](#) 2014a # [149198](#) 2014b # [149199](#) 2014c # [149200](#) 2015a # [162691](#) 2015b # [162692](#) 2016 # [177103](#) 2016x # [176321](#) 2017a # [199146](#) 2017b # [199145](#) 2018a # [216093](#) 2018b # [216094](#) 2019a # [242639](#) 2019b # [242638](#) 2020 # [265619](#) 2021a # [286858](#) 2021b # [286857](#) 2022a # [306505](#) 2022b # [306504](#) 2023a # [326898](#) 2023b # [326897](#)



Haircracks split D-die in 3 parts.

180

HB2d-DB2f

>lb



HB2d was used afterwards in combination with DB2r and DB2g

HB2d.vs

Die diameter +/- 27,0 mm.

Left outer top leaf blunt, leaf below near sharp.

Filing lines bottom right.

DB2f.vs.hs?

Die diameter +/- 26,5 mm.

Sidebar of cross touches rim.

Mintage 9609 +/- 2607 - 11,5, 11,4, 11,3, 11,1 (2x), 10,9 (2x), 10,6, 10,5 grams.

179 # [190675](#) 180 # [71833](#) 180e # [158846](#) 180g # [158847](#) 181 # [98832](#) 182 # [112997](#) 20M2 180M # [159408](#)

20M3 180M [180439](#) 2014 # [149201](#) 2015 # [162690](#) 2016 # [177104](#) 2016x # [176322](#) 2017 # [199144](#) 2018 #

[216095](#) 2019 # [242640](#) 2020 # [265620](#) 2021 # [286856](#) 2022 # [306506](#) 2023 # [326899](#)



Haircracks on D-side

180+



Heavy crack appears at top of D-side, than large piece breaks off.



185

HB2d-DB2g

>lb



HB2d was used before in combination with DB2r and DB2f. Shifting and rotating observed, at least 6 positions.

HB2d.vs.zs, see also 180 HB2d-DB2f.
Die diameter +/- 27,0 mm.
Left outer top leaf blunt, leaf below near sharp.
Filing lines bottom right.
Self-strike of crown at top, in higher than actual position, cross visible. Self-strike will disappear.

DB2g.vs.zs
Die diameter +/- 27,2 mm.
Cross doesn't touch rim, later does.
Filing lines left.
Self-strike of leaves top left appears and disappears

Mintage 33986 +/- 4867 – 11,8, 11,7, 11,5, 11,4 (3x), 11,3 (3x), 11,2 (4x), 11,1 (3x), 11,0, 10,8, 10,2, 10,0 grams
184k # [86256](#) 185 # [71834](#) 186 # [71818](#) 187 # [71819](#) 189 # [71815](#) c187c # [71816](#) c187d # [76744](#) 2014 # [149202](#) 2015a # [162696](#) 2015b # [162697](#) 2016 # [177105](#) 2016x # [176323](#) 2017 # [199147](#) 2018a # [216096](#) 2018b [216097](#) 2019 # [242641](#) 2020 # [265621](#) 2021a # [286860](#) 2021b # [286859](#) 2022a # [306508](#) 2022b # [306507](#) 2023a # [326901](#) 2023b # [326900](#)



Haircrack in H-die, position 2.

Small rim deformation bottom right, disappearing.

183

HB2d-DB2r

>lb



HB2d was used before in combination with DB2f and afterwards with DB2g

HB2d.vs

Die diameter +/- 27,0 mm.

Left outer top leaf blunt, leaf below near sharp.

Filing lines bottom right.

DB2r

Cross fully visible.

Smaller die than DB2g, left ornaments nearer to border.

Heavy crack right

Mintage **175 +/- 356 (1 known)**

183x # [264720](#)

200

HB2e-DB2h

>lb



Some die rotation observed

HB2e.cc.vs

Die diameter +/- 27,0 mm.

Outer top leaves blunt.

Circle lines in 20, heller & twigs, roughness in 0.

Filing lines right and between right L and E.

2 indentations right of middle of right L.

DB2h

Die diameter +/- 27,0 mm.

Cross doesn't touch rim, later does.

Filing lines between left ribbon and ornament.

Mintage 20463 +/- 3792 - 11,7 (3x), 11,5 (5x), 11,4 (2x), 11,3 (3x), 11,1, 11,0, 10,9, 10,8 grams.

200 # [71787](#) 200b # [112258](#) 200d # [190680](#) 200DS # [86358](#) 201 # [71788](#) 201c # [71790](#) 202 # [71789](#) 202g # [73140](#) c201c # [71786](#) 20M1 HB2e-DB2hM [175254](#) 2014 # [149203](#) 2015 # [162698](#) 2016 # [177106](#) 2016xa # [176324](#) 2016xb # [176327](#) 2017 # [199148](#) 2018a # [216098](#) 2018b [216099](#) 2019 # [242642](#) 2020 # [265622](#) 2021 # [286862](#) 2022 # [306510](#) 2023 # [326903](#)



Right twig/ribbon snail-trails to rim.

210

HB2f-DB2i

>lb



DB2i was used afterwards in combination with HB2g

HB2f.cc.vs.hs

Die diameter +/- 27,6 ? mm.

Outer top leaf blunt, leaf below near sharp, getting blunt.

Circle lines in 20, heller & twigs, roughness in 0.

Filing line right.

Haircrack middle right.

DB2i.vs.br

Die diameter +/- 27,0 mm.

Piece broken off above right sidebar of cross.

Some filing lines.

Raking of rim top right.

Mintage 13701 +/- 3110 - 11,7, 11,6 (2x), 11,5, 11,4, 11,0, 10,8 grams.

210 # [71533](#) 210c # [70504](#) 211 # [71534](#) 211c # [71535](#) 2014 # [149204](#) 2015 # [162700](#) 2016 # [177107](#) 2016x # [176328](#) 2017 # [199149](#) 2018 # [216100](#) 2019 # [242643](#) 2020 # [265623](#) 2021 # [286863](#) 2022 # [306523](#) 2023 # [326904](#)



Crack widens.

215

HB2g-DB2i

>lb



DB2i was used before in combination with HB2f, HB2g afterwards with DB2j. Horizontal shifting.

HB2g.ds.cc.vs
 Die diameter +/- 26,8 mm.
 Left outer top leaves blunt.
 Circle lines in LER & twigs.
 Filing lines at bottom between twigs/ribbons.
 Trice struck die, highlighted in picture & double lines bottom of HELLE.

DB2i. br
 Die diameter +/- 27,0 mm.
 Piece broken off above right sidebar of cross.
 Raking of rim top right.

Mintage 13167 +/- 3049 - 11,8, 11,7 (3x), 11,5, 11,4, 11,3 (2x), 11,2 grams

215 # [71542](#) 215a # [333346](#) 216 # [71544](#) 216c # [112259](#) 217# [102121](#) 220 # [72738](#) 20M1-215 # [307846](#) 20M3-215 # [85364](#) 2014 # [149207](#) 2015 # [162702](#) 2016 # [177108](#) 2017 # [199150](#) 2018 # [216101](#) 2019 # [242644](#) 2020 # [265632](#) 2022 # [306511](#) 2023 # [326905](#)



225

HB2g-DB2j

>lb



HB2g was used before in combination with DB2i, DB2j afterwards with HB2h.

HB2g.ds

See 215 HB2g-DB2i.

Spur at left twig/ribbon.

Snail trails form at end of twig/ribbons.

Splash develops at right side.

DB2j.cc.vs

Die diameter +/- 27,0 mm.

Cross touches rim.

Circle lines in DOA and crown.

Filing lines left and between crown and right ribbon.

Mintage 9253 +/- 2559 - 11,9, 11,6 (2x), 11,5, 11,2, 10,8 grams.

223g # [112260](#) 224 # [83809](#) 224b # [227183](#) 224DS # [86359](#) 224k # [190710](#) 225 # [72319](#) 225M1 # [72739](#) 2014 # [149208](#) 2015 # [162703](#) 2016 # [177109](#) 2016x # [176329](#) 2017 # [199151](#) 2018 # [216102](#) 2019 # [242645](#) 2020 # [265633](#) 2021 # [286865](#) 2022 # [306512](#) 2023 # [326906](#)



230

HB2h-DB2j

>lb



DB2j was used before in combination with HB2g, HB2h afterwards with DB2k and DB2p.

HB2h.ds.vs

Die diameter +/- 27,0 mm.

Left upper outer leaves blunt.

Double lines at outer leaves right and below left E and leaf below.

Filing lines near horizontal left of H and above LER, near vertical above HEL.

DB2j.cc.vs

See 225 HB2g-DB2j.

In combination with HB2h double rim top left.

Mintage 7295 +/- 2274 - 11,8, 11,5 (4x), 11,3, 10,6 grams.

230 # [71499](#) 230k # [190712](#) 231 # [71500](#) c230 # [174757](#) 2014 # [149209](#) 2015 # [162704](#) 2016 # [177110](#) 2016x # [176330](#) 2017 # [199152](#) 2018 # [216103](#) 2019 # [242646](#) 2020 # [265634](#) 2021 # [286866](#) 2022 # [306513](#) 2023 # [326907](#)



Die fades away

235

HB2h-DB2k

>lb



HB2h was used before in combination with DB2j and afterwards with DB2p.

HB2h.ds.vs
See 230 HB2h-DB2j

DB2k.vs
Die diameter +/- 27,3 mm.
Left lower ornament near rim.
Filing line above D

Mintage 7117 +/- 2246 - 12,0 (2x), 11,9, 11,5, 11,3, 10,2

234 # [71504](#) 235 # [71505](#) 236 # [102448](#) 2014 # [149210](#) 2015 # [162705](#) 2016 # [177115](#) 2016x # [176331](#) 2017 # [199153](#) 2018 # [216104](#) 2019 # [216104](#) 2020 # [265635](#) 2021 # [286867](#) 2022 # [306514](#) 2023 # [326908](#)



Die fades away

240

HB2h-DB2p

>lb



HB2h was used before in combination with DB2j & DB2k, DB2p was used later in combination with HB2j

HB2h.ds.vs
See 230 HB2h-DB2j

DB2p
Cross fully visible, nearly touches rim
Left side of left lower ornament disappearing.
Filing lines left of 19
Double contour left side of left middle ornament

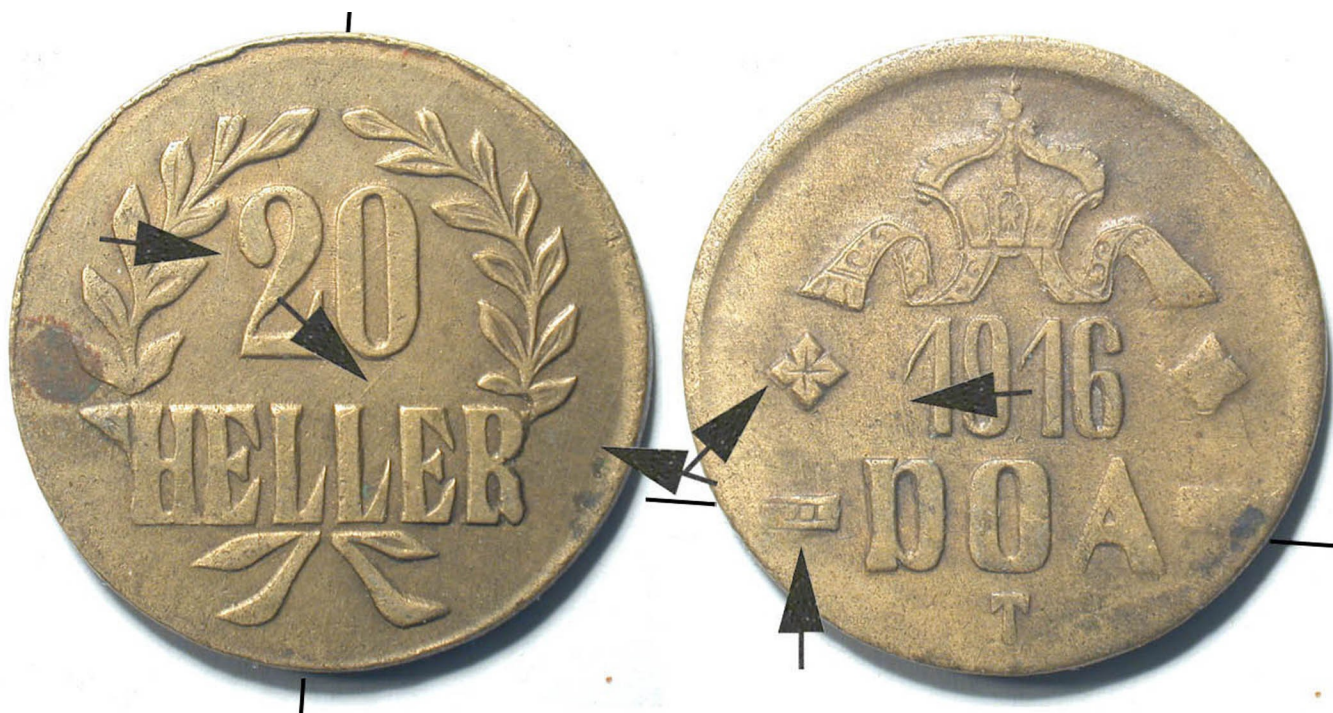
Mintage 3025 +/- 1466 - 12,3, 11,6, 11,5, 11,3 grams

240 # [174765](#) 240a # [279027](#) 241 # [190713](#) 2017 # [199154](#) 2018 # [216105](#) 2019 # [242648](#) 2020 # [265636](#) 2021
[286868](#) # 2022 # [306515](#) 2023 # [326909](#)

245 (ex 260)

HB2j-DB2p

>lb



DB2p was used before in combination with HB2h

HB2j

Large die

Filing lines

No double lines below HELLER

DB2p

Cross fully visible, almost touches rim

Left side of left lower ornament disappearing.

Filing lines left of 19

Double contour left side of left middle ornament

Mintage 9786 +/- 2631 – 12,0 (2x), 11,8, 11,6, 11,4, 11,3 grams.

244 # [155441](#) 245 # [73146](#) 246 # [146594](#) 246c # [208035](#) 20M2 245M # [158197](#) 2014 # [149212](#) 2015 # [162711](#)2016 # [177114](#) 2016x # [176335](#) 2017 # [199157](#) 2018 # [216109](#) 2019 # [242651](#) 2020 # [265639](#) 2021 # [286852](#)2022 # [306517](#) 2023 # [326912](#)

Self-strike of ornament between leaves above R.

245+



Crown expands on later coins, raking of 1916

250

HB2i-DB2o

> Ib



DB2o was also used in combination with HB2i?

HB2i.vs

Die diameter +/- 27,5 mm

Double lines below HELLER, leaves and twigs below.

Some roughness at right side with lines at 3rd outer leaf above R. Filing line atop E

DB2o.vs.br

Die diameter +/- 27,3 mm

Ample filing lines.

A small piece broken off above cross, which makes it look like there are 2 crossbars.

Mintage 3737 +/- 1629 - 11,8 (2x), 11,7, 11,4, 11,1

250 # [62303](#) 251 # [73148](#) 251b # [224431](#) 2014 # [149211](#) 2015 # [162708](#) 2016 # [177112](#) 2016x # [176332](#) 2018 # [216106](#) 2019 # [242649](#) 2020 # [265637](#) 2021 # [286850](#) 2023 # [326910](#)



250+



254

HB2i?-DB2o

>lb



Earlier DB2o known in combination with HB2i, HB2i? is possibly HB2i

HB2i?

But for disappearance of scrambled lines at right side this could be HB2i. Earlier HB2i? would be needed to show it is not HB2i

Double line below HE

Die position almost identical with HB2i-DB2o

DB2o see HB2i-DB2o

Mintage 3737 +/- 1629 - 11,4, 11,3, 11,2, 11,1, 11,0 grams.

254 # [73147](#) 20M2 254M # [158201](#) 255 # [180237](#) 2014 # [149214](#) 2015 # [162710](#) 2016 # [177113](#) 2016x # [176334](#)
2018 # [216108](#) 2019 # [242650](#) 2020 # [265638](#)



HB2i? misses the distinctive marks to declare it to be an HB2i.

290

HB3a-DB2I

>lb



HB3a was used before in combination with DB2n.

HB3a.vs

See 285 HA3a-DB2n

Outer leaves top right fade.

DB2I.cc.vs

Die diameter +/- 27,2 mm

Left lower ornament near rim.

Circle lines in crown, 1916 and DOA.

Filing lines between crown and sloping part of 1.

Mintage 11388 +/- 2837 - 11,7 (2x), 11,5 (2x), 11,3 (2x), 11,2, 11,1 (2x), 10,9, 10,6 grams.

289k # [71305](#) 290 # [71306](#) 290c # [71307](#) 291 # [71308](#) 291a # [77880](#) 291ab # [190724](#) 2014 # [149249](#) 2015 # [162718](#) 2016 # [177118](#) 2016x # [176336](#) 2017 # [199158](#) 2018 # [216119](#) 2019 # [242697](#) 2020 # [265659](#) 2021 # [287670](#) 2022 # [306567](#) 2023 # [326914](#)



290+



Left lower ornament touches (false?) rim.
Left side of horizontal of cross visible.



Dies fade away

Space between left lower ornament and rim.
Full cross visible.

If this is a new die it starts in a pretty bad shape.

285

HB3a-DB2n

>lb



HB3a was used afterwards in combination with DB2I.

HB3a.vs

Die diameter +/- 27,5 ? mm.

2nd upper outer leaves right misses top. 3rd left normal.

Double lines below ELLER and leaves below.

Filing lines in and to right of 20, below H and leaf below.

Snail trails below twigs/ribbons at bottom.

DB2n

Die diameter +/- ?

Double line above right side of crown

Ample space between left lower ornament and rim.

Mintage 1779 +/- 1125 - 11,8. 11.5 grams.

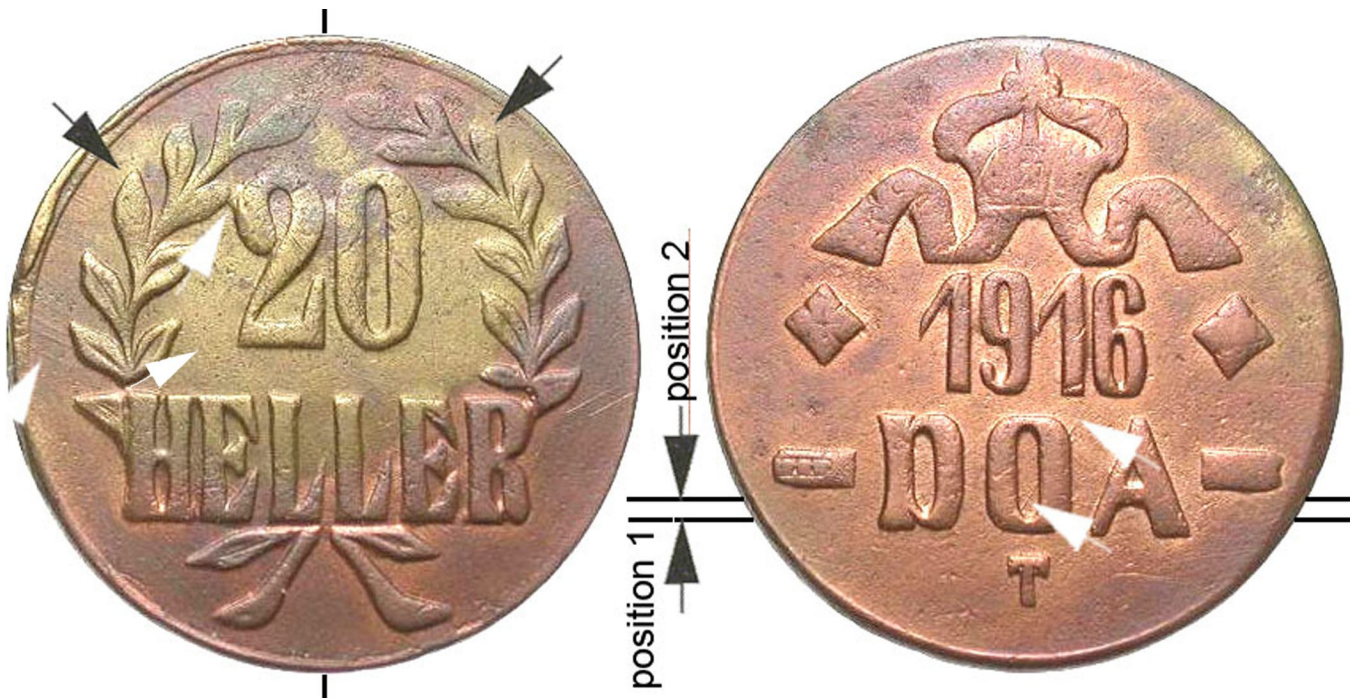
285 # [76944](#) 285c # [71538](#) 2014 # [149250](#) 2015 # [162719](#) 2016 # [177119](#) 2017 # [199159](#) 2021 # [287671](#) 2022 # [306568](#)



300

HB3b-DB2m

>--



HB3b.vs

Die diameter +/- 27,5 mm

3rd outer leaf left complete, 2nd from top right cut.

Filing lines left.

DB2m. vs

Die diameter +/- 27,3-27,5 ? mm

Distance T-rim = height of T.

Filing line through O to bottom of 6 .

Mintage 21886 +/- 3920 - 12,0, 11,5, 11,4 (2x), 11,3, 11,2 (3x) grams

299 # [70940](#) 300 # [71001](#) 300DS # [172876](#) 301 # [71002](#) 301b [71013](#) # 301c # [70941](#) 301f # [86257](#) 302 # [70942](#)
 c300c # [70956](#) 2014 # [149253](#) 2015a # [162720](#) 2015b # [162725](#) 2016 # [176337](#) 2016x # [176337](#) 2017 # [199160](#)
 2018 # [216121](#) 2019 # [242699](#) 2020 # [265661](#) 2021 # [287672](#) 2022 # [306569](#) 2023 # [326916](#)



"Wave" lines bottom left, right twig/ribbon snails away.

Lines between lower and middle ornament Left.

300+



On H-side twigs/ribbons reach for rim, the upper line gets accentuated. Upper outer leaves right fade, old contours seems to get engraved. Bottom left of H expands.



Self-strike of 1916 and ribbon on H-die.

705 (ex 730)

HB3c-DA3a

>--



DA3a was before used in combination with HA(C)1b

HB3c.hs

Haircrack from 3rd outer leaf above R to rim.

Haircrack at same place as filing line on

HB3a, see 285 # [76944](#)

Filing lines left

December 2012 only one known without self-strike, 4 September 2016

DA3a

Space between cross and rim.

Right 1 unaffected, complete right lower ornament.

Mintage 14947 +/- 3247 – 11,8, 11,7 (2x), 11,4, 11,3, 11,1 grams

704 # [121136](#) 704-704DS # [62569](#) 705 # [62568](#) 706 # [76849](#) 20M2 705M # [158973](#) 2014 # [149263](#) 2015a # [162616](#) 2015b # [162617](#) 2016 # [176719](#) 2016x # [176340](#) 2017 # [199196](#) 2018 # [216125](#) 2019 # [242707](#) 2020 # [265543](#) 2021 # [287510](#) 2022 # [306013](#) 2023 # [326980](#)



HB3c.hs.zs, self-strike of 6, upper ornament and A.

770

HB3d-DA6a

>--



DA6a was used before in combination with HA3h and HB4d and afterwards in combination with HA(C)1c

HB3d.vs.hs

An explosion of filing lines.

Haircrack from first outer leaf above R over twigs/ribbons

DA6a.cc.vs.hs

See 760 HA3h-DA6a

Some filing and circle lines still visible on early HB3d-DA6a coins.

Mintage 23666 +/- 4074 – 11,7, 11,6 (3x), 11,5 (2x), 11,3, 11,2 grams.

769 # [77884](#) 769d # [103608](#) 769k # [79820](#) 770 # [62302](#) 770c # [62301](#) 770DS # [112262](#) 770f # [76836](#) 2014 # [149264](#) 2015 # [162618](#) 2016 # [176720](#) 2016x # [176339](#) 2017 # [199197](#) 2018 # [216126](#) 2019a # [242708](#) 2019b # [242709](#) 2020 # [265544](#) 2021 # [287511](#) 2022 # [306017](#) 2023 # [326981](#)



310

HB3y-DB2x

> ro



Part of the series has unevenly struck sides

HB3y.vs

Die diameter +/- 27,3 mm

Filing lines left between leaves and in lower part of H.

Double lines below HEL and in hole of R.

DB2x.vs

Die diameter +/- 27,0 mm

Distance T-rim more than height of T.

Near vertical filing line below middle of A.

Mintage 10320 +/- 2702 – 11,8 (2x), 11,7 (2x), 11,6, 11,4, 11,3, 10,8, 10,6 grams.

309 # [207925](#) 310 # [83982](#) 310a # [190764](#) 310b # [112263](#) 311 # [69209](#) 312 # [71121](#) 2014 # [149254](#) 2015 # [162721](#) 2016 # [177122](#) 2016x # [176338](#) 2017 # [199161](#) 2018 # [216122](#) 2019 # [242700](#) 2020 # [265662](#) 2021 # [287673](#) 2022 # [306570](#) 2023 # [326917](#)



Later coins are better struck.

310+



Bottom fades, small haircrack top right.

320

HB3z-DB2z

> --



HB3z

No dubble line below HE.

Right E connected to leaf below.

Filing lines bottom right.

DB2z

Near identical to DB2x.

Distance T-rim more then height of T.

Baby face die, no useful lines

Mintage 7651 +/- 2328 - 11,8, 11,2 grams.

320 # [83824](#) 320c # [83825](#) 320MS # [113000](#) 20M1var-320M # [174079](#) 2014 # [149255](#) 2015 # [162722](#) 2016 # [177123](#) 2017 # [199163](#) 2018 # [216124](#) 2019 # [242701](#) 2020 # [265663](#) 2021 # [287675](#) 2022 # [306571](#) 2023 # [326918](#)



328 HB4a-DB3a coin alignment



later regraded NGC MS 62 5773754-001

Mintage ? (3 known)

328c # [121970](#) 328MS [73141](#)

NGC 4814286-099 genuine and 5773754-001 MS 62 are one and the same coin.

330 HB4a-DB3a medal alignment >ro



HB4a.ds
Large die.
Double struck die, top of 2 and lines of twigs visible.
Top of middle outer leaf left affected, but original tip on some coins visible at a lower level.

DB3a
DB3 type right ribbon.
Die diameter +/- 27,5 mm.
Similar to 490 DB3b but smaller die.
Distance T-rim less than height of T.
As yet no crown with details seen.

Mintage 11032 +/- 2793 - 11,5, 11,3 (2x), 11,2, 10,8, 10,5 grams.

330 # [63710](#) 330d # [76288](#) 330MS # [73141](#) 332M1 # [63711](#) 20M1-331 # [70509](#) 2014 # [162996](#) 2015 # [162693](#)
2016 # [177124](#) 2016x # [176345](#) 2017 # [199167](#) 2018 # [216136](#) 2019 # [242705](#) 2020 # [265700](#) 2021 # [287676](#)
2022 # [306575](#) 2023 # [326976](#)



480

HB4c-DA11b

>lo



HB4c was used afterwards in combination with DA11c and with DB3b.

Some shifting in die position, position shown here is not actual coin's, which is somewhat lower.

HB4c.cc
Die diameter 27,7 mm
Lots of circle lines.

HA11b.cc
Die diameter ?
Plenty of circle lines, no filing lines bottom right.

Mintage 5338 +/- 1946 - 11,5, 11,2 grams.

480 # [62730](#) 480b # [112264](#) 480c # [83882](#) 480DS # [113986](#) 2014 # [149265](#) 2015 # [162619](#) 2016x # [176342](#)
2017 # [199198](#) 2018 # [216127](#) 2019 # 242710 2020 # 265545 2021 # 287512 2022 # 306018 2023 # 326982



485

HB4c-DA11c

>lo



HB4c was used before in combination with DA11b and afterwards with DB3b.

HB4c.cc
Die diameter +/-26,8-27
See HB4c-DA11b

HA11c.cc.vs
Die diameter ?
Plenty of circle lines, filing lines bottom right.

Mintage 1957 +/- 1180 - 11,6, 11,4, 11,3 grams.

485 # [76283](#) 485c # [96933](#) 20M1-485M [112999](#) 2015 # [162620](#) 2016 # [176722](#) 2016x # [176343](#) 2021 # [287513](#)
2022 # [306019](#) 2023 # [326983](#)



490

HB4c-DB3b

>lo



HB4c was used before in combination with DA11b and DA11c
 DB3b was used afterwards in combination with HA3x and HA4d.

HB4c.cc
 Die diameter +/-26,8-27
 See HB4c-DA11b

DB3b.vs
 Die larger than 28,5 mm
 Lots of horizontal filing lines.
 No or shallow detail in crown.

Mintage 21174 +/- 3857 – 11,8. 11,4 (3x), 11,3 (4x), 11,2, 11,0, 10,8, 10,1 grams.

489m # [85639](#) 490 # [63697](#) 491 # [63698](#) 491c # [76284](#) 491d # [112268](#) 491DS # [72512](#) 491DS2 # [105701](#) c491c
 # [63699](#) 2014 # [162997](#) 2015 [162694](#) # 2016 # [177125](#) 2016x # [176346](#) 2017a # [199206](#) 2017b # [199205](#) 2018
 # [216137](#) 2019 # [242706](#) 2020 # [265701](#) 2021 # [287677](#) 2022 # [306576](#) 2023 # [326977](#)



Raking bottom left. Scratch top right

Dent at right side, self-strike of top of leaf ?

765

HB4d-DA6a

>--



DA6a was used before in combination with HA3h and afterwards in combination with HB3d and HA(C)1c

HB4d.vs
Double struck die, see shadow lines left of outer leaves left.
Deep filing line above right E.
HB4 see outer leafs left.

DA6a
See 760 HA3h-DA6a.
Filing lines and haircrack still visible.

Mintage 7829 +/- 2355 – 10,8, 10,7 (2x), 10,6 grams.

764k # [331351](#) 765 # [70550](#) 767 # [83810](#) 767a # [143108](#) 767DS # [72552](#) 2014 # [149268](#) 2015 # [162621](#) 2016 # [176723](#) 2016x # [176341](#) 2017 # [199200](#) 2018 # [216129](#) 2019 # [242712](#) 2020 [265547](#) # 2021 # [287514](#) 2022 # [306014](#) 2023 # [326985](#)



Die damaged bottom right.



HB5a was used afterwards in combination with DB3d.

Copper HB5a-DB3c are very rare.

HB5a.cc

Die diameter +/- 26,0 mm.

HB5 type leaves top left.

Chicken feet twig/ribbons touch rim.

Plenty of circle lines with pot for playing marbles.

Raking of bottom of 20.

DB3c

DB3 type right ribbon.

Die diameter +/- 27,0 mm.

Plenty of circle lines.

Small dragon below right 1

Mintage 17082 +/- 3469 - 12,0, 11,7, 11,6 (3x), 11,5, 11,4 (2x), 11,3 (2x), 11,2, 11,0, 10,8, 10,7, 10,6 grams.

519 # [63978](#) 520 # [63915](#) 521 # [63916](#) 522 # [76281](#) 522C # [157663](#) 523 # [86525](#) c520 # [199719](#) c521c # [63979](#)

c521d # [63980](#) 2014 # [149282](#) 2015a # [162772](#) 2015b # [162773](#) 2016 # [177129](#) 2016x # [176385](#) 2017 # [199169](#)

2018 # [216153](#) 2019 # [242740](#) 2020 # [265796](#) 2021 # [287700](#) 2022 # [306677](#) 2023 # [327086](#)



Piece broken of D-die bottom right.

520+



Self-strike of 1 above second E. Extra haircracks on DOA die.





HB5a was used before in combination with DB3c, DB3d afterwards with HB5b

HB5a.hs.zs
See 520+ HB5a-DB3c

DB3d.cc.vs.hs
Die diameter +/- 27,0 mm.
Circle lines in centre, filing lines all around. Filing line through sloping part of 1 along left ribbon still visible on some HB5b-DB3d.
Haircrack above right lower ornament disappears to reappear on HB5b-DB3d.

Mintage 5872 +/- 2041 – 12,5, 11,8, 11,7, 11,6, 11,5 (2x), 11,2, 10,8 (2x) grams. Copper HB5a-DB3d are rare
525 # [63899](#) 525C # [157664](#) 525k # [76282](#) 526 # [63903](#) c525c # [63900](#) c525d # [63901](#) 2014 # [149283](#) 2015 # [162774](#) 2016 # [177130](#) 2016x # [176386](#) 2017 # [199170](#) 2018 # [216154](#) 2019 # [242741](#) 2020 # [265797](#) 2021 # [287701](#) 2022 # [306678](#) 2023 # [327087](#)



"Scratches" right side of D-die.



DB3d was used before in combination with HB5a, HB5b afterwards with DB3e

HB5b.cc.hs
Die diameter +/- 26,7 mm.
Plenty of circle lines.
Haircrack over triangle left of H and leaves above

DB3d.hs
See 525 HB5a-DB3d.
"Scratches" besides right ribbon.
Haircrack above right lower ornament reappears.

Mintage 12456 +/- 2966 - **12,7, 12,5**, 11,9, 11,7, 11,5, 11,4, 11,2, 11,0, 10,7 grams.

530 # [63887](#) 530b # [160077](#) 530bb # [190845](#) 530c # [63888](#) 530d # [63889](#) 530DS # [101939](#) 531 # [76310](#) 2014 # [149284](#) 2015 # [162775](#) 2016 # [177135](#) 2016x # [176387](#) 2017 # [199171](#) 2018 # [216155](#) 2019 # [242742](#) 2020 # [265798](#) 2021 # [287702](#) 2022 # [306679](#) 2023 # [327088](#)

535

C 2 of 18

HB5b-DB3e

>lo



HB5b was used before in combination with DB3d.

HB5b.cc.hs
See 530 HB5b-DB3d.
Still plenty of circle lines.

DB3e.cc
Die diameter +/- 26,5 mm.
Plenty of circle lines.
Lower ornaments (nearly) touch rim.

Mintage 33274 +/- 4817 - **12,8**, 12,4, 12,2, 12,1, 12,0 (3x), 11,9, 11,7 (5x), 11,6, 11,5 (3x), 11,4 (2x), 11,3, 11,1, 11,0 (2x), 10,9 (3x), 10,8 (3x), 10,5 grams.

535 # [63849](#) 535b # [227200](#) 536 # [63850](#) 536k # [84652](#) 537 # [63854](#) 537c # [63868](#) 537e # [121768](#) 537f # [63870](#)
538 # [63855](#) 538b # [190849](#) c535c # [63851](#) c536c # [63856](#) c537d # [63869](#) c537h # [76276](#) c537h+ # [62739](#) 20P-M 535P-M # [93253](#) 20M3C 537M # [148260](#) 2014a # [149285](#) 2014b # [149286](#) 2015a # [162768](#) 2015b # [162776](#)
2016 # [177136](#) 2016x # [176388](#) 2017 # [199173](#) 2018a # [216156](#) 2018b # [216157](#) 2019 # [242743](#) 2020 # [265799](#)
2021 # [287703](#) 2022 # [306680](#) 2023 # [327089](#)



Raking of bottom of H & O.
Splash top right. Self-strike of 1.



Self-strike of leaves upper right weakens later.
Stike out scratches lower right



HB5c.cc

Die diameter +/- 26,7 mm.

Irregular circle lines. Compare 630 HB5d-DB3g, 635 HB5e-DB3g and 900 HB5i-DB3j.

Raking of first outer leaf above H, bottom of H and top of 2.

DB3f.cc.vs.br

Die diameter +/- 26,5 mm.

Irregular circle lines. Plenty of filing lines.

Lower ornaments touch rim, at right one pieces broken off die.

Strike-out scratch middle right.

Mintage 29715 +/- 4557 - 12,1 (2x), 11,8, 11,7 (2x), 11,6 (4x), 11,5 (4x), 11,4 (2x), 11,3, 11,0 (3x), 1-,9 (3x), 10,8, 10,7, 10,3, 10,1, 10,0 grams.

549 # [227318](#) 550 # [63845](#) 550a # [168712](#) 551c # [63846](#) 551DS # [124643](#) 551f # [63839](#) 551g # [227214](#) 551Z # [161162](#) 552 # [62304](#) 552DS # [77843](#) 553 # [73952](#) c551c # [63842](#) c551d # [63843](#) c551e # [63844](#) c551g # [63840](#) c551h # [63841](#) c551k # [76275](#) 20M2-550 # [72750](#) 2014 # [149287](#) 2015 # [162777](#) 2016 # [177137](#) 2016x # [176389](#) 2017 # [199174](#) 2018 # [216161](#) 2019 # [242744](#) 2020a # [265800](#) 2020b # [265801](#) 2021 # [287704](#) 2022a # [306681](#) 2022b # [306682](#) 2023 # [327090](#)



Self-strike in 2 positions of middle ornament.

550+



Dies partly fade away.

630

C 6 of 6

HB5d-DB3g

>lo



DB3g was afterwards combined with HB5e

HB5d.cc.vs

Die diameter +/- 26,4 mm.

Irregular circle lines. Compare 550 HB5c-DB3f, 635 HB5e-DB3g and 900 HB5i-DB3j.

Filing lines in centre.

DB3g.cc.vs

Die diameter +/- 27,3 mm.

Irregular circle lines. Filing lines left of 1 and above A.

Left lower ornaments touches rim, right one far off.

Mintage 36477 +/- 5038 – **12,8, 12,6**, 12,4, 12,3 (2x), 12,2 (3x), 12,0, 11,7 (3x), 11,6 (2x), 11,5, 11,1, 11,0, 10,9, 10,6 grams

630 # [63585](#) 630b # [158099](#) 630c # [76261](#) 630DS # [112269](#) 631 # [63586](#) 632 # [76262](#) c631c # [63587](#) c631f # [76263](#) 2014a # [149293](#) 2014b # [149288](#) 2015a # [162769](#) 2015b # [162778](#) 2016a # [177138](#) 2016b # [177139](#) 2016x # [176405](#) 2017a # [199176](#) 2017b # [199175](#) 2018a # [216162](#) 2018b # [216163](#) 2019a # [242745](#) 2019b # [242746](#) 2020a # [265804](#) 2020b # [265803](#) 2021 # [287705](#) 2022 # [306683](#) 2023 # [327091](#)



Fine raking of EL and 20, splash at top.

Circle lines near crown still visible.

635

C 2 of 2

HB5e-DB3g

>lo



DB3g was used before in combination with HB5d

HB5e.cc.vs

Die diameter +/- 26,5 mm.

Irregular circle lines. Compare 550 HB5c-DB3f, 630 HB5d-DB3g and 900 HB5i-DB3j.

Top right looks like die has been sliding off the rim

DB3g.cc.

See 630 HB5d-DB3g.

Raking of crown, ribbons & 1916, splash bottom right.

Mintage 26512 +/- 4309 – 12,4, 12,1, 11,9 (2x), 11,8 (2x), 10,7, 10,4 grams.

634 # [64082](#) 634k # [85210](#) 635 # [63547](#) 636 # [69940](#) 637 [64083](#) 637b # [190892](#) c635 # [63548](#) c636 # [76252](#)
 2014 # [149290](#) 2015a # [162770](#) 2015b # [162779](#) 2016 # [177140](#) 2016x # [176390](#) 2017 # [199177](#) 2018 # [216164](#)
 2019 # [242747](#) 2020a # [265805](#) 2020b # [265806](#) 2021 # [287706](#) 2022 # [306684](#) 2023 # [327092](#)



Self-strike of top of 6 left of 2, splash top right. Double self-strike shows shifting in die position.

650

C 2 of 2

HB5f-DB3h

>lo



DB3h was used before in combination with HB5n

HB5f.cc

Die diameter +/- 26,7 mm.

Circle lines in heller and below.

Signs of double struck die in twig right.

DB3h.

Die diameter +/- 26,4 mm.

Left lower ornament partly off die.

Mintage 19217 +/- 3677 – 12,6, 12,1, 11,6, 11,3, 11,0, 10,8 (2x) grams.

648q # [302151](#) 649 # [68993](#) 650 # [63535](#) 650BR # [113001](#) 650c # [76241](#) 650DS # [112267](#) 650DSa # [279217](#)
 651 # [63536](#) c650 # [76245](#) 2014 # [149291](#) 2015 # [162780](#) 2016 # [177171](#) 2016x # [176391](#) 2017 # [199178](#) 2018
 # [216165](#) 2019a # [242752](#) 2019b # [242753](#) 2020 # [265809](#) 2021 # [287721](#) 2022 # [306687](#) 2023 # [327099](#)



Self-strike of 1 above E, splash right side.



Raking & splash. Die fades away.

650/620

HB5f-DA10a-fabrication



008c # [69054&](#)

These dies were not used in this combination, state of wear of the dies doesn't allow for this. If this coin would have been struck in the Tabora mint, they would have to have removed the original die combinations HB5f-DB3h and HA4b-DA10a from the striking machines, put HB5f and DA10a dies together in a machine, strike one or a few coins and then remount the dies in their original combination in the machines to finish the original series. Making one out of two more probable.



DB3i was used afterwards in combination with HB5h. Shifting dies, shown is position 1.

HB5g.cc.vs
Die diameter +/- 26,0-26,2 mm.
Circle lines in 20 & heller.
Filing lines right of 0 and below 20.

DB3i.vs
Die diameter +/- 27 mm.
Left lower ornament touches rim.
Filing line from top of 6 to lower ornament stays long visible.

Mintage 28826 +/- 4489 – **14,2 (3x), 14,1, 14,0, 13,6, 12,5**, 12,1, 12,0, 11,8 (3x), 11,7 (4x), 11,6, 11,5 (2x), 11,4 (2x), 11,3, 11,2 (2x), 11,1, 10,8 (2x), 10,7 (2x), 10,3, 10,2 (2x), 10,1 (2x), **9,9 (2x), 9,8, 9,7, 9,5, 9,3 (2x)** grams
878 # [61328](#) 878e # [121661](#) 878d # [76242](#) 878DS # [165453](#) 879 # [61329](#) 880 # [61325](#) 880a # [190895](#) 880c # [227221](#) 881 # [121662](#) 882 [61326](#) 883 # [61327](#) c878c # [61322](#) c878d # [61323](#) c881 # [61324](#) c882c [61319](#) c882d # [61320](#) c883 # [61321](#) c883f # [76243](#) 2014 # [149315](#) 2015 # [162930](#) 2016 # [177172](#) 2016x # [176392](#) 2017 # [199179](#) 2018a # [216166](#) 2018b # [216167](#) 2019a # [242751](#) 2019b # [242750](#) 2020 # [265808](#) 2021 # [287720](#) 2022 # [306686](#) 2023 # [327098](#)



Shifted die position, even lower then pos. 2.
Deformation of die at bottom.

Lines at T disappear but reappear later and in combination with HB5h.

880+



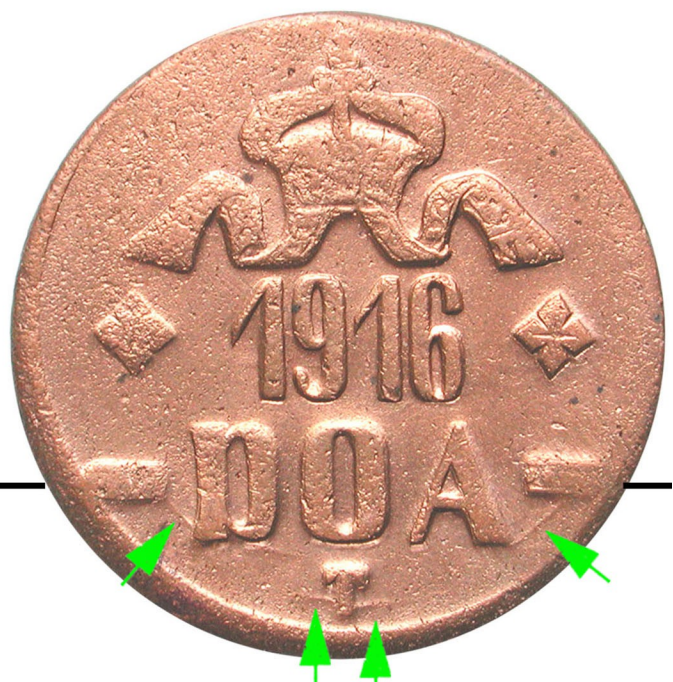
Dies damaged bottom right. Die position 2

Very large, thick and heavy flans, diameter +/- 29,8 mm, that is about 1 mm more then normal.

Coins about 2,75 mm thick. Weight +/- 14 grams.



Normal flans. Possitiion 3. Later coins self-strike of 1916 above middle of left E of Heller. Compare with 885 HB5h-DB3g where self-strike is more to the right side. Lines at T reappear.



DB3i was used before in combination with HB5g.

HB5h. vs
Die diameter +/- 26,8 mm.
Twigs/ribbons far from rim.
Plenty of filing lines.

DB3i. vs
See 880 HB5g-DB3i.
Lines at bottom far clearer then in combination
with HB5g.

Mintage 23488 +/- 4059 – 11,9 (2x), 11,8, 11,7, 11,6 (2x), 11,5, 11,4, 11,3, 11,0, 10,8, 10,5, 10,3, 10,2 (3x), 10,1 grams.

884DS # [110521](#) 884h # [88194](#) 885 # [61289](#) 885c # [70348](#) 885f # [76235](#) 887 # [61290](#) c885c # [61275](#) c885d # [61276](#) c886 # [61277](#) c887c # [76236](#) 2014a # [149316](#) 2014b # [149317](#) 2015a # [162931](#) 2015b # [162932](#) 2016 # [177173](#) 2016x # [176393](#) 2017 # [199180](#) 2018a # [216168](#) 2018b # [216169](#) 2019a # [242752](#) 2019b # [242753](#) 2020 # [265809](#) 2021 # [287721](#) 2022 # [306687](#) 2023 # [327099](#)



Double self-strike of 1916 above Heller. Insert early form of self-strike of 6 above E. Observe placement of cone above E & compare with 880 HB5g-DB3g.



DB3j was used afterwards in combination with HB5j. Shifting die positions.

HB5i.cc

Die diameter +/- 25,6 mm.

Twigs/ribbons touch rim.

Plenty of irregular circle lines. Compare 550 HB5c-DB3f, 630 HB5d-DB3g and 635 HB5e-DB3g.

DB3j.cc

Die diameter +/- 27,3 mm.

Both lower ornaments nearly touch rim.

Thick T

Mintage 39146 +/- 5215 – 12,3 (2x), 12,2, 12,1 (2x), 12,0, 11,6 (2x), 11,4, 11,0, 10,3 grams.

898 # [70512](#) 898k # [73144](#) 899 # [70349](#) 899k # [73143](#) 899kDS # [73142](#) 900 # [61135](#) c900 # [61134](#) c900c # [76227](#) 2014a # [149318](#) 2014b # [149319](#) 2015a # [162933](#) 2015b # [162942](#) 2016a # [177175](#) 2016b # [177176](#) 2016x # [176394](#) 2017a # [199182](#) 2017b # [199181](#) 2018a # [216173](#) 2018b # [216174](#) 2019a # [242754](#) 2019b # [242755](#) 2020a # [265811](#) 2020b # [265810](#) 2021 # [287722](#) 2022 # [306689](#) 2023 # [327100](#)



Double self-strike of HE, in different positions, right of 6.

900+



Self-strikes of 191 below 20 and of HEL and leaf next to 16.



DB3j was used before in combination with HB5i. Shifting die positions.

HB5j.cc.vs

Die diameter +/- 27,0 mm.

Twigs/ribbons don't touch rim. Outer leafs far from rim.

Plenty circle and filing lines.

Dent at rim top left may or may not be there (?)

DB3j.zs2

See 900 HB5i-DB3j.

Self-strike 1b of HB5i at 6, self-strike of leaf above H of HB5j above left side of right middle ornament. This last self-strike occurs in slightly different positions according to shifting of dies.

Mintage 42171 +/- 5407 – **12,7 (2x), 12,5**, 12,3 (2x), 12,2, 12,1 (4x), 12,0 (3x), 11,9 (2x), 11,8, 11,6, 11,5 (2x), 11,3, 11,3 (3x), 11,2 (2x), 11,0, 10,8, 10,6, 10,5, 10,4, 10,0, **9,7** grams

904 # [70014](#) 905 # [61133](#) 905DS # [86341](#) 906 # [61130](#) 907 # [61131](#) 907a # [61132](#) 907e # [112761](#) 907ee # [121663](#) 907x # [84646](#) 908 # [73954](#) c905 # [61129](#) c906 # [61083](#) c907a # [61084](#) c907b # [61085](#) c907c # [61080](#) c907d # [61081](#) c907e# [61082](#) c907f # [76226](#) 2014a # [149320](#) 2014b # [149320](#) 2015a # [162935](#) 2015b # [162936](#) 2016a # [177177](#) 2016b # [177178](#) 2016x # [176395](#) 2017a # [199185](#) 2017b # [199183](#) 2018a # [216175](#) 2018b # [216176](#) 2019a # [242757](#) 2019b # [242758](#) 2020a # [265813](#) 2020b [265812](#) 2021 # [287723](#) 2022 # [306693](#) 2023 # [327101](#)



Zs3: top of HELLER both sides of 1916. Both dies will get very bumpy surface in the end.



HB5k.cc

Die diameter +/- 26,0 mm.

Twigs/ribbons don't touch rim, chicken feet.

Field completely filled with circle lines, small plateau in the centre.

DB3k.cc.zs

Die diameter +/- 26,5 mm.

Field completely filled with circle lines.

Self-strike R below left middle ornament will disappear to reappear.

Thick T

Mintage 32029 +/- 4728 – **13,3, 12,8, 12,7, 12,5**, 12,3 (2x), 12,2, 11,9 (2x), 11,7, 11,4, 11,2, 11,0 (2x), 10,9, 10,7, **9,9, 9,7, 9,3** grams

920 # [61048](#) 920k # [70352](#) 920m # [76142](#) 921 # [61049](#) 921DS # [224495](#) 921TC # [158861](#) c920 # [61045](#) c921a # [61046](#) c921b # [61047](#) c921c # [76215](#) 2014a # [149322](#) 2014b # [149323](#) 2015a # [162937](#) 2015b # [162943](#) 2016 # [177179](#) 2016x # [176396](#) 2017 # [199186](#) 2018a # [216177](#) 2018b # [216178](#) 2019a # [242759](#) 2019b # [242760](#) 2020a # [265815](#) 2020b # [265814](#) 2021 # [287724](#) 2022 # [306690](#) 2023 # [327103](#)



Self-strike of 1 above right E.

Self-strike of top of HE right of 6.



HB5I.cc

Die diameter +/- 27,3 mm.

Earlier coins field completely filled with circle lines, hole in centre.

DB3I.cc

Die diameter +/- 27,3 mm.

Cross touches rim.

Earlier coins field completely filled with circle lines.

Mintage 44306 +/- 5539 – **13,1**, 11,9 (2x), 11,8 (4x), 11,4, 10,9, 10,8, 10,7, 10,6, 10,5, 10,3, **9,1** grams
 929 # [63250](#) 929DS # [135493](#) 930 # [60986](#) 931 # [71805](#) 932# [71806](#) 932c # [60985](#) 932f # [77844](#) c931f # [76177](#) 20PM-930 # [84620](#) 0006ECEL # [158863](#) 2014a # [149324](#) 2014b # [149325](#) 2014c # [149326](#) 2015a # [162944](#) 2015b # [162938](#) 2016 # [177181](#) 2016x # [176397](#) 2017a # [199188](#) 2017b # [199187](#) 2018a # [216179](#) 2018b # [216180](#) 2019a # [242762](#) 2019b # [242761](#) 2020a # [265817](#) 2020b # [265816](#) 2021a # [287725](#) 2021b # [28772](#) 2022 # [306691](#) 2023 # [327104](#)



Self-strike of D below R.

Self-strike of R left of D (far clearer on some coins)

940 C 3 of 3

HB5m-DB3m

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HB5m.cc.vs

Die diameter +/- 26,0 mm.

Twig/ribbons at bottom far from rim.

Plenty circle and filing lines.

DB3m.cc.vs

Die diameter +/- 26,0 mm.

Design exactly fits die.

Plenty circle and filing lines.

Mintage 40925 +/- 5329 – 12,3, 12,2 (2x), 12,1, 12,0, 11,8 (2x), 11,6 (2x), 11,5 (2x), 10,4, **9,9, 9,3** grams.

938 # [73929](#) 938c # [69925](#) 938DS # [110160](#) 938DS2 # [112050](#) 939 # [68991](#) 940 # [60966](#) 941 # [69941](#) c941 # [60965](#) c940c # [76178](#) 2014 # [149327](#) 2015a # [162940](#) 2015b # [162941](#) 2016a # [177183](#) 2016b # [177184](#) 2016x # [176398](#) 2017 # [199189](#) 2018a [216181](#) 2018b # [216185](#) 2019a # [242763](#) 2019b # [242764](#) 2020a # [265819](#) 2020b # [265818](#) 2021a # [287727](#) 2021b # [287728](#) 2022 # [306694](#) 2023 # [327105](#)



Self-strike of leaf below A

940+



Self-strike of ER and twigs/ribbons.



Still later, some circle lines still visible on D-side

645 (ex 950) **C** 1 of 1 HB5n-**DB3h** (ex HB5n-DB3n) >lo



DB3h was afterwards used in combination with HB5f

HB5n.cc.vs.br Very small die, diameter +/- 25,0 mm. Design just fits die. Small pieces broken off at right twig/ribbon. Plenty circle and filing lines.	DB3h.cc (ex DB3n) Die diameter +/- ? mm. Plenty circle lines. Some splash at right lower ornament.
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Mintage 15836 +/- 3341 – **12,6**, 12,4, 12,3, 12,3 grams

645 # [60964](#) 646 # [68986](#) 646c # [76179](#) 2014 # [149292](#) 2015 # [162781](#) 2016 # [177252](#) 2016x # [176399](#) 2017 # [199190](#) 2018 # [216186](#) 2019 # [242765](#) 2020 # [265821](#) 2021 # [287708](#) 2022 # [306695](#) 2023 # [327106](#)



DB3o was used afterwards in combination with HB5p. Shifting die positions

HB5o.cc.vs

Die diameter +/- 27,3 mm.

Plenty of filing lines. Some circle lines left in ER and twig above.

DB3o.cc

Die diameter +/- 27,0 mm.

Left lower ornament touches rim, right one and crown don't.

Some circle lines in D & O.

Mintage 12277 +/- 2945 – **13,5, 12,7**, 11,6, 11,5, 11,2, 11,1, 10,7, 10,3, 10,2, 10,0 (2x), **8,9. 8,3, 8,0** grams
 564c # [70353](#) 564DS # [73149](#) 565 # [63810](#) 566 # [63821](#) 566a # [279148](#) c566c # [63822](#) c566d # [63823](#) 2014 # [149335](#) 2015 # [162987](#) 2016 # [177185](#) 2017 # [199191](#) 2018 # [216187](#) 2019 # [242766](#) 2020 [265822](#) # 2021 [287737](#) # 2022 # [306696](#) 2023 # [327107](#)



Piece broken off H-die top left.

Splash at T.

570

C₂ of 17

HB5p-DB3o

>ro



DB3o was used before in combination with HB5o

HB5p.cc
Die diameter +/- 27,3 mm.

DB3o
See 565 HB5o-DB3o.
Sagging lower ornament right

Mintage 27046 +/- 4351 – 12,2, 11,7 (2x), 11,6, 11,5 (2x), 11,4, 11,1, 11,0, 10,9, 10,8, 10,7, 10,6, 10,5, 10,3, 10,0, **9,6 (2x), 9,4 (2x), 9,3, 8,5, 8,4** grams

569d # [190949](#) 569g # [71812](#) 570 # [63803](#) 571 # [63789](#) 571h # [76835](#) 572 # [69935](#) 572a # [279146](#) c570c # [63790](#) c571d # [63791](#) c571e # [63774](#) c571f # [63775](#) c571g # [63776](#) 2014 # [149336](#) 2015a # [162988](#) 2015b # [162989](#) 2016 # [177186](#) 2016x # [176400](#) 2017 # [199192](#) 2018 # [216188](#) 2019 # [242767](#) 2020 # [265823](#) 2021 # [287738](#) 2022 # [306698](#) 2023 # [327108](#)



Self-strike of 6 above left E.
Splash left.



Splash at bottom.



HB5q.cc

Die diameter +/- 26,7 mm.

Plenty of circle lines.

Raking of bottom of 0 and stem of 2.

DB3p.cc

Die diameter +/- 27,0 mm.

Lower ornaments touch rim.

Circle lines all over die.

Mintage 28826 +/- 4489 – **13,0, 12,7, 12,6, 12,5**, 12,4, 12,1 (3x), 12,0 (2x), 11,8 (4x), 11,7 (5x), 11,5, 11,4, 11,2, 11,1, 11,0 (3x), 10,5, 10,4, 10,3, **9,7**

580 # [63753](#) 580DS # [86360](#) 581 # [63750](#) 581b # [70403](#) 581c # [73944](#) 581d # [76164](#) 582 # [63751](#) 583 # [84654](#)
 c581c # [63752](#) c582d # [63747](#) c582e # [63748](#) c582f # [63744](#) c582g # [63745](#) 582h # [63746](#) c583 # [76165](#) 2014 # [149337](#)
 2015a # [162990](#) 2015b # [162991](#) 2016 # [177188](#) 2016x # [176401](#) 2017 # [199193](#) 2018 # [216189](#) 2019a # [242768](#)
 2019b # [242769](#) 2020a # [265831](#) 2020b # [265832](#) 2021 # [287739](#) 2022 # [306699](#) 2023 # [327109](#)



Bulb top left. Raking of top of leaf above H



Self-strike of leaf left of right middle ornament, which disappears again.

580+



Haircrack over leaves left.
Circle lines appear in ELL and above.
Lower part of 2 gets sloping.
Splash at rim left



Dies fade



Self-strike of leaf left of right middle ornament,
Splash at bottom

590

C

1 of 2

HB5r-DB3q

>ro



DB3q was used afterwards in combination with HB5s

HB5r.cc

Die diameter far larger than 27,0 mm.

Circle lines in 20 and twigs.

Raking of bottom of 0 and stem of 2.

DB3q.vs.br1

Die diameter +/- 27,0 mm.

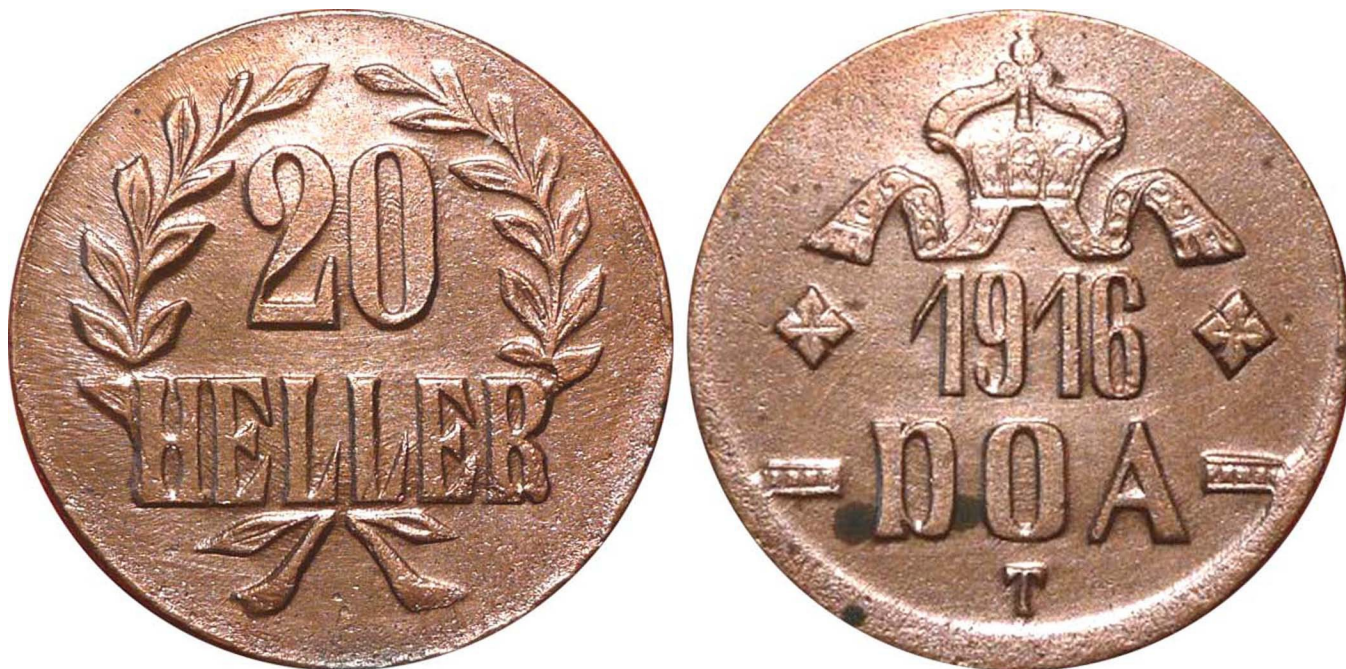
Lower ornaments touch rim. Cross visible.

Filing line right of left middle ornament.

Piece broken off at right lower ornament.

Mintage 12633 +/- 2987 – **12,6**, 11,9, 11,5, 11,3, 11,2, 11,0, 10,9, 10,8 grams

590 # [63707](#) 590b # [190959](#) 590c # [227255](#) 590DS # [86339](#) 590k # [76155](#) 591 # [63701](#) 591b # [69057](#) 591DS # [118973](#) 2014 # [149338](#) 2015 # [162992](#) 2016 # [177189](#) 2017 # [199194](#) 2018 # [216190](#) 2019 # [242770](#) 2020 # [265833](#) 2021 # [287740](#) 2022 # [306700](#) 2023 # [327110](#)



Splash at T and left lower ornament.

595

C 1 of 2

HB5s-DB3q

>ro



DB3q was used before in combination with HB5r

HB5s.cc.vs

Die diameter +/- 26,0 mm.

Twigs/ribbons have chicken feet.

Plenty of circle and filing lines.

Raking of bottom of 0 and stem of 2.

DB3q.vs.br2

See 590 HB5r-DB3q.

Piece broken off below T.

Mintage 8719 +/- 2484 – 12,0 (2x), 11,8, 11,6, 11,5, 11,4, 11,1, 10,3 grams.

595 # [63620](#) 595a # [277276](#) 595h # [77815](#) 596 # [63621](#) 596a # [227099](#) 596b # [301741](#) 597 # [233543](#) 2014 # [149339](#) 2015 # [162993](#) 2016 # [177190](#) 2017 # [199195](#) 2018 # [216191](#) 2019 # [242771](#) 2020 # [265834](#) 2021 # [287741](#) 2022 # [306701](#) 2023 # [327111](#)



Piece broken off die D-side bottom left

780

HB5y-DA8b

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HB5y.cc

Die diameter +/- 27,2 mm.

Plenty of circle lines with hole in middle.

Fat upper outer leaf left often looks like DB4.

DA8b.cc

Die diameter +/- 27,6 mm.

Space between cross and rim.

Right 1 unaffected, left one misses part, gun turret right lower ornament.

Plenty of circle lines with hole in middle.

Mintage 38256 +/- 5157 – 11,9, 11,8, 11,6, 11,5, 11,4 (3x), 11,3 (2x), 11,2 (5x), 11,1 (2x), 10,4, 10,1 grams.

780 # [62035](#) 780 Z # [159117](#) 780 Z2 # [235288](#) 780b # [76832](#) 780fd # [180421](#) 780r # [112272](#) 781 # [73949](#) c780b # [216268](#) c781 # [76833](#) c781d # [62528](#) 2014 # [149269](#) 2015a # [162622](#) 2015b # [162623](#) 2016a # [176724](#) 2016b # [176725](#) 2016x # [176407](#) 2017a # [199202](#) 2017b # [199201](#) 2018a # [216130](#) 2018b # [216131](#) 2019a # [242713](#) 2019b # [242714](#) 2020a # [265549](#) 2020b # [265548](#) 2021 # [287515](#) 2022 # [306015](#) 2023 # [326986](#)



Dies deform while circle lines still visible.



HB5z.cc

Die diameter +/- 27,2 mm.

Chicken legs at bottom.

Last circle lines in 20.

DA9c.vs.hs.zs

Die diameter ?.

Right side of bottom of left 1 lower.

Plenty of filing lines.

Haircracks right from crown over ribbon to middle ornament and more right from this to lower one

Mintage 32918 +/- 4791 - **13,0, 12,7, 12,6, 12,5**, 12,4 (2x), 12,2 (2x), 12,1 (3x), 12,0 (3x), 11,9 (2x), 11,8, 11,7, 11,6, 11,5 (2x), 11,4, 11,3, 11,2 (4x), 11,1, 11,0, 10,7 (2x), 10,5, 10,4 grams

839 # [69129](#) 840 # [61335](#) 841 # [61336](#) 841b # [69130](#) 841bc # [150081](#) 841bp # [158970](#) 841c # [112797](#) 841cd # [151066](#)
 841ce # [168711](#) 841cf # [229004](#) 841cr # [353663](#) 841d # [69131](#) 841da # [176031](#) 841daa # [267322](#) 841db # [227108](#) c841 # [76831](#)
 c841d # [76830](#) 2014 # [162994](#) 2015a # [162624](#) 2015b # [162625](#) 2016 # [176726](#) 2016x # [176408](#) 2017a # [199204](#)
 2017b # [199203](#) 2018a # [216132](#) 2018b # [216133](#) 2019a # [242715](#) 2019b # [242716](#) 2020a # [265551](#) 2020b # [265550](#) 2021 # [287516](#)
 2022 # [306016](#) 2023 # [326987](#)



brass

840+



copper

**All (known to me) positive tested copper HB-DA are HB5z-DA9c, struck with old dies.
As yet (13-03-2025) 26 copper coins with electrical conductivity below 47 MS/m and 1 with 52 MS/m are known to me.**

Nearly all copper HB-DA, offered as such in auctions, are HB5z-DA9c, struck with old dies.

Whoever has an attested copper HB-DA that is not HB5z-DA9c, please inform

info@ptbvhrokerspartij.nl.

Vast majority of copper HB5z-DA9c contain 0,3% tin.

mintage

HB1p-DB1p not yet seen January 2024, mintage 0 +/- 500

Calculated mintage (Jan. 2024)

Amounts rounded to nearest multiple of 500, +/- = 95% confidence interval

100** die combinations, 25 HA-DA, 7 HA-DB, 7 HB-DA and 61** HB-DB

152** dies, 25 HA dies, 24 DA dies, 54 HB** dies and 49 DB dies ** HB2i and HB2i? counted as separate dies

HA3-DA ? green ink: die combination could not be fully determined

coloured fields relate to same die at some distance in the tables

die combination	mintage	+/-	die combination	mintage	+/-	die combination	mintage	+/-
HA(C)1-DA LL complete	47.500	6.000	HB-DB - J727a & b	1.055.500	16.500	HB3-DB2	56.000	6.000
HA-DA brass	246.500	12.000						
HA-DA copper - J724a	56.500	6.000	HB0-DB0	0	500			
Total J724a & b	350.500	14.000						
HA(C)1a-DA1a	25.500	4.000	HB0a-DB0a	0	500	HB3a-	DB2l	11.500 3.000
HA(C)1b-	DA3a	11.500 3.000	HB0b-DB0b	0	500	HB3b-DB2m	DB2n	2.000 1.000
HA(C)1c-		9.000 2.500				HB3b-DB2m ?		22.000 4.000
HA3h-	DA6a	2.500 1.500						0
HA(C)1d-		1.000 1.000	HB1-DB	183.000	11.000	HB3y-DB2x		10.500 2.500
HA2b-	DA2a	13.000 3.000				HB3z-DB2z		7.500 2.500
HA2a-DA1b		15.500 3.500	HB1a-DB1a		7.000 2.000	HB3z-DB2z ?		1.500
HA2d-		9.500 2.500	HB1b-		29.000 4.500	HB3?-DB2?		1.500
HA3a-	DA4c	11.500 3.000	HB1w-	DB1b	12.000 3.000			
(ex HA3d)	DA6c	12.000 3.000		DB1c	3.500 1.500	HB4-DB3		32.000 4.500
HA3b-DA5a		27.500 4.500		DB1v	3.500 1.500			
HA3c-DA6b		10.500 3.000	HB1c-	DB1y	26.500 4.500	HB4a-DB3a		11.000 3.000
HA3k-		1.500 1.000	HB1d-DB1d		2.000 1.000	HB4c-	DB3b	21.000 4.000
	DA5b	18.000 3.500		DB1x	8.500 2.500			
HA3e-	DA7a	15.500 3.500	HB1e-	DB2a	51.500 6.000	HB5-DB3		540.500 16.000
HA3n-				DB2b	1.000 1.000			
HA3f/n ? -			HB1f-		4.000 1.500		DB3c	17.000 3.500
	DA8c	12.500 3.000	HB1g-	DB2c	21.000 4.000	HB5a-		6.000 2.000
HA3f-	DA8d	500 500	HB1s-		500 500		DB3d	12.500 3.000
HA3g-DA9b		23.500 4.000	HB1t-	DB2t	1.000 1.000	HB5b-	DB3e	33.500 5.000
HA3i-DA8f		10.000 2.500	HB1z-DB1z		9.500 2.500	HB5c-DB3f		30.000 4.500
HA3j-DA8e		6.500 2.000	HB1?-DB1/?		3.000	HB5d-		36.500 5.000
HA3m-DA6e		14.500 3.000				HB5d/e?		0
HA4a-DA8a		19.500 3.500	HB2-DB2	240.000	12.000	HB5e-	DB3g	26.500 4.500
HA4b-DA10a		56.500 6.000				HB5f-	DB3h	19.000 3.500
HA4b-DA10a ?		0	HB2a-	DB2c	12.000 3.000	HB5g-		29.000 4.500
HA4c-DA11a		21.000 4.000	HB2b-DB2d		43.000 5.500	HB5h-	DB3i	23.500 4.000
HA2/3?-DA		0	HB2c-DB2e		41.000 5.500	HB5i-		39.000 5.000
HA3-DA		1.500		DB2f	9.500 2.500	HB5i-j?		0
				DB2r	0 500	HB5j-	DB3j	42.000 5.500
HA(C)1-DB LL complete	11.000	3.000	HB2d	DB2g	34.000 5.000	HB5k-DB3k		36.000 7.500
HA-DB	92.500	8.000	HB2e-DB2h		20.500 4.000	HB5l-DB3l		48.500 8.500
Total - J726 a & b	103.500	8.500	HB2f-		13.500 3.000	HB5m-DB3m		40.500 8.000
				DB2i	13.000 3.000	HB5n-	DB3h	16.000 3.500
HA2b-		500 500		DB2i/j/q?	500	HB5o-		12.500 3.000
	DB3u	3.500 1.500	HB2g-		9.500 2.500	HB5p-	DB3o	27.000 4.500
HA(C)1c-		7.500 2.500		DB2j	7.500 2.500	HB5q-DB3p		29.000 4.500
HA3w-	DB3v	28.500 4.500		DB2k	7.000 2.000	HB5r-		12.500 3.000
HA2d-	DB3w	16.000 3.500	HB2h-		3.000 1.500	HB5s-	DB3q	8.500 2.500
HA3x		2.000 1.000	HB2j-	DB2p	10.000 2.500	HB5?-DB3?		3.500
HA4d	DB3b	45.000 5.500	HB2i-		3.500 1.500			
			HB2i?	DB2o	2.500 1.500			
			HB2?-DB2?		9.000			
HB-DA - J725a & b	125.000	9.000						
HB3c-	DA3a	15.000 3.000						
HB3d-		23.500 4.000						
HB4d-	DA6a	6.000 2.500						
	DA11b	5.500 2.000						
HB4c	DA11c	2.000 1.000						
HB5y-DA8b		38.000 5.000						
HB5z-DA9c		33.000 5.000						