



Continuous Cast



For more than 45 years, our company has been committed to providing the global distributors community with innovative, high quality, cost effective continuous cast bronze products. From our humble beginnings in 1968, the Company has grown to become one of the largest professional continuous cast bronze products company in the world. With operations in many countries, the Company distributes its TVH® products in over 72 countries under some of the most well established brand names in the industry. Worldwide, stockist and distribution professionals now depend upon TRAIID for quality and service.

TRAID VILLARROYA manufactures a complete range of copper TVH® alloy rods, tubes and shapes for all types of industries and customers. Our materials operate in many varied and often challenging applications. An unwavering commitment has always been maintained to the highest standards of the quality, as well as for the protection of the environment in the communities in which we live and work. The long-term business success of our products depends on our ability to ensure that our quality remains a top priority for the management and each employee. This idea is our commitment to making sustainable health a reality through innovative technology and services focused on addressing three critical needs: lowering costs, helping our customers and improving quality. All our rods and tubes are mechanically straightened and inspected with x-ray spectrometer as well as analyzed for determining the perfect composition according to international norms. Here we present you our standard delivery program, besides the stock list shown, other sizes and formats are also available upon request. All our materials are tested to certify the hardness, tensile and ultimate tensile strength. Our quality certification DIN ISO 9001:2008 regularly audited covers all our production from the very first moment to your final stock. The evolution of TRAIID VILLARROYA continues ... After all, we're more than a manufacturer. More than a distributor. We're an essential resource. Our customers' challenges keep changing, and we're helping them adapt every step of the way.



TVH® TV7 (CuSn7ZnPb) MANUFACTURING PROGRAM

SOLID RODS

<i>Ø Finished sizes in mm.</i>	<i>Ø Delivery sizes in mm.</i>	<i>Approx. weight Kg/m.</i>
12	13	1,2
14	15	1,5
15	16	1,8
18	19	2,5
20	21	3,0
22	23	3,6
25	26	5,0
28	29	5,9
30	31	6,6
32	33	7,6
35	36	9,0
40	41	11,7
45	46	14,7
50	51	18,1
55	56	22,0
60	61	26,0
65	66	30,4
70	71	35,2
75	76	40,3
80	81	45,8
85	86	51,6
90	91	57,8
95	96	64,4
100	102	73,0
105	107	80,0
110	112	88,0
115	117	95,5
120	122	104,0
125	127	112,5
130	132	122,0
140	142	141,0
150	152	161,5
160	162	183,4
170	172	206,7
180	182	231,4
190	192	259,3
200	202	285,2
210	212	316,0
220	222	347,0
230	232	378,5
240	242	411,5
250	252	450,0
300	304	652,0
350	354	883,0

TVH® TV7 (CuSn7ZnPb) MANUFACTURING PROGRAM

TUBES

Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.
10x20	9x21	2.8	40x110	38x112	77.1	75x100	73x102	35.7
10x25	9x26	4.4	45x55	44x56	9.2	75x105	73x107	43.0
15x25	14x26	3.3	45x60	44x61	13.0	75x115	73x117	58.9
15x30	14x31	5.4	45x65	44x66	17.5	80x90	78x91	15.3
15x35	14x36	7.9	45x70	43x71	22.5	80x95	78x96	21.9
15x40	14x41	10.5	45x75	43x76	28.0	80x100	78x102	30.0
15x45	14x46	13.5	45x80	43x81	32.9	80x105	79x106	37.6
18x25	17x26	2.9	50x60	49x61	10.0	80x110	78x112	45.0
20x30	19x31	4.4	50x65	49x66	14.3	80x115	79x115	56.3
20x32	19x33	5.4	50x70	48x71	19.0	80x120	78x122	61.5
20x35	19x36	6.4	50x75	48x76	25.0	80x125	79x126	71.3
20x40	19x41	9.2	50x80	48x81	31.0	80x130	78x132	79.3
20x45	19x46	12.5	50x85	48x86	35.8	80x140	78x142	98.5
20x50	19x51	15.9	50x90	48x91	43.0	85x100	83x102	24.7
20x55	19x56	20.5	50x95	48x96	49.0	85x105	83x107	32.0
20x60	19x61	23.7	50x100	48x102	56.5	85x115	83x117	47.6
24x32	23x33	3.9	50x105	49x106	64.9	85x125	83x127	64.7
25x35	24x36	5.4	50x110	48x112	70.9	90x100	88x102	18.7
25x40	24x41	8.1	50x120	48x122	87.9	90x110	88x112	33.5
25x45	24x46	11.0	55x65	54x66	11.0	90x115	89x116	42.0
25x50	24x51	14.5	55x70	53x71	15.5	90x120	88x122	49.9
25x55	24x56	18.5	55x75	53x76	20.5	90x130	88x132	67.7
25x60	24x61	23.0	55x80	53x81	26.4	90x140	88x142	86.9
25x65	24x66	26.7	55x85	53x86	32.0	90x150	88x152	107.5
25x70	24x71	31.2	60x70	58x71	11.7	90x170	88x172	152.6
25x75	24x76	37.6	60x75	58x76	16.9	95x105	93x107	19.6
30x40	29x41	6.3	60x80	58x81	23.5	95x115	93x117	35.3
30x45	29x46	9.3	60x85	58x86	29.0	95x120	94x121	41.8
30x50	29x51	12.7	60x90	58x91	35.5	95x125	93x127	52.3
30x55	29x56	17.0	60x95	59x96	43.6	100x110	98x112	20.6
30x60	29x61	20.5	60x100	58x102	49.0	100x115	98x117	28.6
30x65	29x66	25.0	60x105	59x106	56.9	100x120	98x122	36.9
30x70	28x71	30.0	60x110	58x112	64.0	100x125	99x126	45.4
30x75	29x76	35.9	60x115	59x116	71.2	100x130	98x132	54.7
30x80	28x81	41.5	60x120	58x122	80.5	100x140	98x142	74.0
30x85	29x86	47.5	60x130	58x132	98.3	100x150	98x152	94.5
30x90	28x91	53.5	60x140	58x142	117.5	100x160	98x162	116.2
30x95	29x96	60.7	65x80	63x81	18.3	100x190	98x192	191.0
35x45	34x46	7.2	65x85	63x86	24.1	100x200	98x202	217.9
35x50	34x51	10.6	65x90	63x91	30.4	110x120	108x122	22.5
35x55	34x56	14.5	65x95	63x96	37.0	110x125	108x127	31.2
35x60	34x61	18.0	65x105	63x107	52.9	110x130	108x132	40.3
35x65	34x66	22.8	70x80	68x81	14.8	110x140	108x142	59.4
35x70	33x71	28.6	70x85	68x86	19.3	110x150	108x152	80.0
35x75	33x76	32.9	70x90	68x91	26.5	110x160	108x162	101.9
35x80	33x81	38.3	70x95	68x96	33.0	110x170	108x172	125.5
40x50	39x51	8.1	70x100	68x102	40.4	110x190	108x192	176.4
40x55	39x56	12.0	70x105	69x106	47.5	120x135	118x137	34.0
40x60	39x61	16.0	70x110	68x112	55.4	120x140	118x142	43.6
40x65	39x66	20.3	70x120	68x122	71.7	120x150	118x152	64.2
40x70	38x71	25.0	70x130	68x132	89.5	120x160	118x162	86.1
40x75	38x76	31.3	70x140	68x142	108.7	120x170	118x172	109.5
40x80	38x81	37.0	70x150	68x152	129.2	120x180	118x182	134.1
40x85	38x86	42.5	75x85	73x86	14.6	120x200	118x202	187.8
40x90	38x91	48.1	75x90	73x91	20.9	120x220	118x222	253.5
40x100	38x102	63.0	75x95	73x96	27.3	125x155	123x157	67.0



TVH® TV7 (CuSn7ZnPb) MANUFACTURING PROGRAM

TUBES

Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.
130x150	128x152	47.1	300x400	296x404	539.0
130x160	128x162	68.7	300x430	296x435	734.5
130x170	128x172	92.3	350x400	346x404	315.0
130x180	128x182	117.0			
130x190	128x192	143.2			
140x155	138x157	39.4			
140x160	138x162	50.7			
140x170	138x172	74.0			
140x180	138x182	99.0			
140x200	138x202	153.0			
150x170	148x172	53.9			
150x180	148x182	79.0			
150x190	148x192	105.0			
150x200	148x202	133.0			
150x210	148x212	165.6			
150x220	148x222	199.5			
150x230	148x232	229.1			
150x250	148x252	298.2			
150x300	146x304	504.0			
160x180	158x182	57.5			
160x190	158x192	84.0			
160x200	158x202	111.0			
160x220	158x222	171.0			
160x250	158x252	276.4			
170x190	168x192	62.9			
170x200	168x202	88.0			
170x210	168x212	117.0			
170x230	168x232	179.0			
170x270	168x272	328.0			
180x200	178x202	64.0			
180x210	178x212	95.0			
180x220	178x222	127.0			
180x230	178x232	157.0			
180x250	178x252	225.0			
190x220	188x222	100.0			
190x240	188x242	164.0			
190x260	188x262	235.0			
200x225	198x227	92.0			
200x240	198x242	138.0			
200x250	198x252	173.0			
200x270	198x272	246.0			
200x300	196x304	385.0			
200x350	196x354	616.0			
210x250	208x252	144.0			
210x260	208x262	180.0			
210x280	208x282	257.0			
210x290	208x292	301.4			
220x260	218x262	151.0			
220x270	218x272	189.0			
220x290	218x292	268.0			
250x280	245x285	153.1			
250x300	246x304	231.0			
250x350	246x354	462.0			
250x400	246x404	727.0			
275x330	273x332	256.8			
300x350	296x354	273.0			



TVH® TV12 (CuSn12) MANUFACTURING PROGRAM

SOLID RODS

<i>Ø Finished sizes in mm.</i>	<i>Ø Delivery sizes in mm.</i>	<i>Approx. weight Kg/m.</i>
12	13	1,2
16	17	2,1
18	19	2,7
20	21	3,2
25	26	5,0
30	31	6,6
35	36	9,0
40	41	11,7
45	46	14,7
50	51	18,1
55	56	22,0
60	61	26,0
65	66	30,4
70	71	35,2
75	76	40,3
80	81	45,8
85	86	51,6
90	91	57,8
95	96	64,4
100	102	73,0
110	112	88,0
120	122	104,0
130	132	122,0
140	142	141,0
150	152	161,5
160	162	183,4
170	172	206,7
180	182	231,4
190	192	259,3
200	202	285,2
210	212	316,0
220	222	347,0
230	232	378,5
250	252	450,0
300	304	652,0
350	354	883,0

TVH® TV12 (CuSn12) MANUFACTURING PROGRAM

TUBES

Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.
15x30	14x31	5.6	90x160	88x162	129.9
15x40	14x41	10.8	90x180	88x182	180.4
20x32	19x33	5.4	100x120	98x122	38.4
20x40	19x41	9.6	100x140	98x142	75.8
20x45	19x46	12.7	100x150	98x152	95.0
20x50	19x51	16.2	100x160	98x162	117.0
25x35	24x36	5.4	100x170	98x172	142.3
25x40	24x41	8.2	100x200	98x202	221.5
25x45	24x46	11.3	100x220	98x222	277.9
25x50	24x51	14.7	110x140	108x142	60.2
30x40	29x41	6.3	110x150	108x152	80.7
30x45	29x46	9.4	120x140	118x142	44.4
30x50	29x51	12.9	120x150	118x152	65.0
30x60	29x61	20.8	120x170	118x172	110.2
30x65	29x66	25.3	120x180	118x182	135.0
30x70	28x71	30.6	120x190	118x192	163.4
30x80	28x81	41.3	120x200	118x202	188.6
30x90	28x91	53.5	130x150	128x152	47.9
30x100	28x102	67.5	130x170	128x172	93.1
35x45	34x46	7.2	130x180	128x182	119.7
35x50	34x51	10.7	140x160	138x162	51.3
35x60	34x61	18.6	140x170	138x172	74.6
40x50	39x51	8.1	140x200	138x202	153.0
40x60	39x61	16.1	150x170	148x172	54.7
40x70	38x71	26.0	150x180	148x182	84.0
40x80	38x81	36.7	150x200	148x202	135.2
40x90	38x91	48.9	150x220	148x222	192.3
40x100	38x102	63.9	150x300	146x304	503.5
50x60	49x61	9.9	160x190	158x192	84.2
50x65	49x66	14.0	160x200	158x202	111.7
50x70	48x71	20.0	160x210	158x212	140.7
50x80	48x81	30.7	160x220	158x222	173.5
50x90	48x91	42.9	160x240	158x242	235.8
50x100	48x102	57.9	170x190	168x192	61.5
50x120	48x122	89.6	170x200	168x202	89.0
60x80	58x81	23.3	170x210	168x212	120.0
60x90	58x91	35.5	170x220	168x222	148.3
60x95	58x96	42.1	170x230	168x232	182.6
60x100	58x102	50.5	180x220	178x222	124.2
60x110	58x112	65.6	180x250	178x252	223.5
60x140	58x142	119.5	190x220	188x222	98.7
70x100	68x102	41.7	190x230	188x232	130.4
70x110	68x112	55.9	190x240	188x242	166.0
70x130	68x132	91.3	200x300	196x304	383.3
70x150	68x152	129.7	200x350	196x354	615.4
70x170	68x172	177.2	200x240	198x242	136.6
80x100	78x102	31.5	220x270	218x272	186.3
80x110	78x112	46.6	250x300	246x304	228.7
80x120	78x122	63.1	250x350	246x354	454.1
80x140	78x142	100.5	300x350	296x354	265.3
80x190	78x192	215.6	300x400	296x404	536.6
90x110	88x112	34.2	300x430	296x435	718.2
90x120	88x122	51.5			
90x130	88x132	69.5			
90x140	88x142	88.8			

TVH® TVAL10 (CuAl10Ni5Fe4) MANUFACTURING PROGRAM

SOLID RODS

<i>Ø Finished sizes in mm.</i>	<i>Ø Delivery sizes in mm.</i>	<i>Approx. weight Kg/m.</i>
15	16	1,5
20	21	2,6
25	26	4,0
30	31	5,7
35	36	7,7
40	41	10,0
45	46	12,6
50	51	15,5
55	56	18,7
60	61	22,2
65	66	26,0
70	71	30,1
75	76	34,5
80	81	39,2
85	86	44,1
90	91	49,4
95	96	53,9
100	101	60,9
105	106	67,1
110	111	73,5
115	116	80,3
120	121	87,4
125	126	94,8
130	131	102,4
140	141	118,7
150	151	136,1
160	161	154,7
165	166	164,5
170	171	174,5
180	181	195,6
190	191	217,8
200	201	241,2
210	211	265,7
220	221	291,5
230	231	318,5
240	241	346,7
250	251	376,1
260	261	406,6
280	281	471,3
300	301	540,8
330	331	654,0

TVH® TVAL10 (CuAl10Ni5Fe4) MANUFACTURING PROGRAM

TUBES

Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.	Ø Finished sizes mm.	Ø Delivery sizes mm.	Approx. weight Kg/m.
15x35	14x36	6.60	55x75	54x76	17.1	150x190	149x191	85.2
15x40	14x41	8.9	55x85	54x86	26.7	150x200	149x201	108.6
15x45	14x46	11.5	60x90	59x91	28.7	160x220	159x221	140.6
20x40	19x41	7.9	60x100	59x101	40.1			
20x45	19x46	10.5	60x110	59x111	52.8			
20x50	19x51	13.4	60x120	59x121	66.6			
20x55	19x56	16.6	60x130	59x131	81.7			
20x60	19x61	20.1	65x85	64x86	19.7			
20x70	19x71	27.9	65x95	64x96	30.6			
25x40	24x41	6.6	70x100	69x101	32.5			
25x45	24x46	9.2	70x105	69x106	38.6			
25x50	24x51	12.1	70x110	69x111	45.1			
25x55	24x56	15.3	70x120	69x121	59.0			
25x60	24x61	18.8	70x130	69x131	74.0			
25x65	24x66	22.6	70x160	69x161	126.3			
25x75	24x76	31.0	70x170	69x171	146.1			
30x45	29x46	7.6	75x100	74x101	28.2			
30x50	29x51	10.5	75x105	74x106	34.4			
30x55	29x56	13.7	75x120	74x121	54.7			
30x60	29x61	17.2	75x125	74x126	62.1			
30x65	29x66	21.0	80x100	79x101	23.6			
30x70	29x71	25.1	80x105	79x106	29.8			
30x75	29x76	29.5	80x110	79x111	36.3			
30x80	29x81	34.0	80x120	79x121	50.2			
30x85	29x86	39.1	80x130	79x131	65.2			
30x100	29x101	55.9	80x140	79x141	81.4			
35x50	34x51	8.6	80x150	79x151	98.8			
35x55	34x56	11.8	80x180	79x181	158.3			
35x60	34x61	15.3	85x105	84x106	25.0			
35x65	34x66	19.1	85x110	84x111	31.4			
35x85	34x86	37.2	85x115	84x116	38.2			
40x55	39x56	9.6	85x150	84x151	94.0			
40x60	39x61	13.1	90x110	88x112	28.7			
40x65	39x66	16.9	90x115	89x116	33.0			
40x70	39x71	21.0	90x120	89x121	40.1			
40x80	39x81	30.1	90x130	89x131	55.2			
40x85	39x86	35.2	90x165	89x166	117.2			
40x90	39x91	40.4	95x115	94x116	27.6			
40x95	39x96	46.0	95x125	94x126	42.0			
40x100	39x101	51.8	95x130	94x131	49.7			
40x110	39x111	64.5	100x120	98x122	31.5			
45x60	44x61	10.7	100x130	99x131	44.0			
45x65	44x66	14.5	100x135	99x136	51.9			
45x70	44x71	18.5	100x150	99x151	76.4			
45x75	44x76	22.9	100x160	99x161	96.2			
45x95	44x96	43.9	100x180	99x181	137.0			
45x105	44x106	55.5	100x220	99x221	233.0			
45x120	44x121	75.8	105x130	104x131	37.9			
45x135	44x136	98.9	105x135	104x136	45.8			
50x70	49x71	15.8	105x180	104x181	131.0			
50x75	49x76	20.1	110x150	109x151	65.2			
50x80	49x81	24.8	110x155	109x156	74.3			
50x85	49x86	29.8	110x170	109x171	103.6			
50x100	49x101	46.6	110x180	109x181	124.6			
50x110	49x111	59.2	120x210	119x211	181.2			
50x120	49x121	73.2	120x250	119x251	291.5			



TVH® TV7 (CuSn7ZnPb)

Density 8,80 g/cm³

Tin bronze (lead gun metal)

Specifications:

TRAID	TVH®	TV7
D	DIN 1705	CuSn7ZnPb
F	AFNOR	U-E 7 Z5 Pb4
GB	BS	BS 1400
USA	CDA	C 93200

Nominal composition:

Cu	81 – 85 %
Sn	6 – 8 %
Zn	3 – 5 %
Pb	5 – 7 %
Ni	Max. 2%
P	Max. 0,05 %
Others combined	Rest

NOMINAL PROPERTIES

UNIT

CONTINUOUS CAST

CENTRIFUGALLY CAST

SAND CASTINGS

Tensile strength R _m	MPa	> 270	270	240
Yield strength R _{p0,2}	MPa	> 120	130	120
Elongation A ₅	%	16	13	15
Brinell Hardness	HB 10	> 70	75	65
Modulus of elasticity E	GPa	102	102	102

MAIN CHARACTERISTICS

Good sliding and dry running properties
Good lubrication
Short chipping
Easily machined material
Resistant to sea water
Soft solderable

INDUSTRY APPLICATIONS

Axle-bearing and coupling rod bearings
Plain bearings for general mechanical engineering applications
Medium stressed bearing pads and adjusting gibs
Highly stressed plain bearing bushing using shafts of unhardened steels

TVH® TV12 (CuSn12)

Density 8,80 g/cm³

Tin bronze

Specifications:

TRAID	TVH®	TV12
D	DIN 1705	CuSn12
F	AFNOR	U-E 12
GB	BS	BS 1400 PB2
USA	CDA	C 91700

Nominal composition:

Cu	84 – 88,5 %
Sn	10,5 – 13 %
Pb	0,6 – 1 %
Ni	Max. 2%
P	Max. 0,4 %
Others combined	Rest

NOMINAL PROPERTIES	UNIT	CONTINUOUS CAST	CENTRIFUGALLY CAST	SAND CASTINGS
Tensile strength R_m	MPa	> 300	280	260
Yield strength R_{p0,2}	MPa	> 150	150	140
Elongation A₅	%	8	5	12
Brinell Hardness	HB 10	> 90	95	80
Modulus of elasticity E	GPa	118	118	118

MAIN CHARACTERISTICS

Good wear resistance
 Optimal for high sliding speed
 Resistant to sea water
 Good corrosion resistance

INDUSTRY APPLICATIONS

Spindle screw
 Pressure screw-nut
 Gear wheel
 Machine tool parts



TVH® TVAL10 (CuAl10Ni5Fe4)

Density 7,60 g/cm³

Aluminium bronze

Specifications:

TRAID	TVH®	TVAL10
D	DIN 1705	CuAl10Ni
F	AFNOR	U-A 10 N
GB	BS	
USA	CDA	C 65500

Nominal composition:

Al	8,5 – 11 %
Ni	4 – 6,5 %
Fe	3,5 – 5,5 %
Mn	Max. 3%
Cu	Rest

NOMINAL PROPERTIES

UNIT

CONTINUOUS CAST

Tensile strength R _m	MPa	700
Yield strength R _{p0,2}	MPa	300
Elongation A ₅	%	13
Brinell Hardness	HB 30	160
Modulus of elasticity E	GPa	118
Coefficient of expansion α	10 ⁻⁶ / K	16,20
Thermal conductivity	W / m . K	42
Electrical conductivity	m / Ω . mm ²	5
Electrical conductivity	% I.A.C.S.	8
Specific heat	J / g . K	0,45

MAIN CHARACTERISTICS

Good strength properties

Sea water resistant

INDUSTRY APPLICATIONS

Endless screws with high tooth pressures and good lubrication.



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