

# INTERNATIONAL STANDARD

**ISO**  
**9457-1**

First edition  
1991-04-15

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**Road vehicles — Metric starter motor pinions —**

**Part 1:**

Currently used pinions

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*Véhicules routiers — Pignons de démarreurs à module métrique —*

*Partie 1: Pignons d'usage courant*

<https://standards.iteh.ai/catalog/standards/sist/6915d923-cd57-4808-b927-48cfba70278/iso-9457-1-1991>



Reference number  
ISO 9457-1:1991(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9457-1 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

ISO 9457 consists of the following parts, under the general title *Road vehicles — Metric starter motor pinions*:

- *Part 1: Currently used pinions*

NOTE — A future part will cover pinions with a 20° pressure angle.

# Road vehicles — Metric starter motor pinions —

## Part 1:

### Currently used pinions

#### 1 Scope

This part of ISO 9457 specifies the metric modules, pressure angles, number of teeth and other tooth characteristics which are necessary to ensure interchangeability of currently used starter motor pinions (those with a pressure angle of  $14^{\circ} 30'$ ) used for starter motors mounted on reciprocating internal combustion engines for road vehicles.

#### 2 Dimensions

Detailed tooth limit dimensions and the base tangent length as the inspection value,  $W_2$ , are given in table 1 for currently used starter motor pinions.

NOTE 1 The symbols, which are in accordance with ISO 701:1976, *International gear notation — Symbols for geometrical data*, are illustrated in figure 1.

#### 3 Other dimensions and specifications

Dimensions and requirements not given in this part of ISO 9457 are left to the manufacturer's choice.

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Table 1

Dimensions in millimetres

Module, <i>m</i>	2,5					3					3,5					4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Pressure angle, $\alpha$	<a href="https://standards.iteh.ai/catalog/standards/sist/6915d923-cd57-4808-8927-98cfc102781iso-9457-1-1991">https://standards.iteh.ai/catalog/standards/sist/6915d923-cd57-4808-8927-98cfc102781iso-9457-1-1991</a>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Number of teeth, <i>z</i>	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Tip diameter, <i>d<sub>a</sub></i>	max. 24,8	27,05	29,3	31,55	33,80	36,05	38,30	40,55	42,80	45,05	47,30	49,55	51,80	54,05	56,30	58,55	60,80	63,05	65,30	67,55	69,80	72,05	74,30	76,55	78,80	81,05	83,30	85,55	87,80	90,05	92,30	94,55	96,80	99,05	101,30	103,55	105,80	108,05	110,30	112,55	114,80	117,05	119,30	121,55	123,80	126,05	128,30	130,55	132,80	135,05	137,30	139,55	141,80	144,05	146,30	148,55	150,80	153,05	155,30	157,55	159,80	162,05	164,30	166,55	168,80	171,05	173,30	175,55	177,80	180,05	182,30	184,55	186,80	189,05	191,30	193,55	195,80	198,05	200,30	202,55	204,80	207,05	209,30	211,55	213,80	216,05	218,30	220,55	222,80	225,05	227,30	229,55	231,80	234,05	236,30	238,55	240,80	243,05	245,30	247,55	249,80	252,05	254,30	256,55	258,80	261,05	263,30	265,55	267,80	270,05	272,30	274,55	276,80	279,05	281,30	283,55	285,80	288,05	290,30	292,55	294,80	297,05	299,30	301,55	303,80	306,05	308,30	310,55	312,80	315,05	317,30	319,55	321,80	324,05	326,30	328,55	330,80	333,05	335,30	337,55	339,80	342,05	344,30	346,55	348,80	351,05	353,30	355,55	357,80	360,05	362,30	364,55	366,80	369,05	371,30	373,55	375,80	378,05	380,30	382,55	384,80	387,05	389,30	391,55	393,80	396,05	398,30	400,55	402,80	405,05	407,30	409,55	411,80	414,05	416,30	418,55	420,80	423,05	425,30	427,55	429,80	432,05	434,30	436,55	438,80	441,05	443,30	445,55	447,80	450,05	452,30	454,55	456,80	459,05	461,30	463,55	465,80	468,05	470,30	472,55	474,80	477,05	479,30	481,55	483,80	486,05	488,30	490,55	492,80	495,05	497,30	499,55	501,80	504,05	506,30	508,55	510,80	513,05	515,30	517,55	519,80	522,05	524,30	526,55	528,80	531,05	533,30	535,55	537,80	540,05	542,30	544,55	546,80	549,05	551,30	553,55	555,80	558,05	560,30	562,55	564,80	567,05	569,30	571,55	573,80	576,05	578,30	580,55	582,80	585,05	587,30	589,55	591,80	594,05	596,30	598,55	600,80	603,05	605,30	607,55	609,80	612,05	614,30	616,55	618,80	621,05	623,30	625,55	627,80	630,05	632,30	634,55	636,80	639,05	641,30	643,55	645,80	648,05	650,30	652,55	654,80	657,05	659,30	661,55	663,80	666,05	668,30	670,55	672,80	675,05	677,30	679,55	681,80	684,05	686,30	688,55	690,80	693,05	695,30	697,55	699,80	702,05	704,30	706,55	708,80	711,05	713,30	715,55	717,80	720,05	722,30	724,55	726,80	729,05	731,30	733,55	735,80	738,05	740,30	742,55	744,80	747,05	749,30	751,55	753,80	756,05	758,30	760,55	762,80	765,05	767,30	769,55	771,80	774,05	776,30	778,55	780,80	783,05	785,30	787,55	789,80	792,05	794,30	796,55	798,80	801,05	803,30	805,55	807,80	810,05	812,30	814,55	816,80	819,05	821,30	823,55	825,80	828,05	830,30	832,55	834,80	837,05	839,30	841,55	843,80	846,05	848,30	850,55	852,80	855,05	857,30	859,55	861,80	864,05	866,30	868,55	870,80	873,05	875,30	877,55	879,80	882,05	884,30	886,55	888,80	891,05	893,30	895,55	897,80	900,05	902,30	904,55	906,80	909,05	911,30	913,55	915,80	918,05	920,30	922,55	924,80	927,05	929,30	931,55	933,80	936,05	938,30	940,55	942,80	945,05	947,30	949,55	951,80	954,05	956,30	958,55	960,80	963,05	965,30	967,55	969,80	972,05	974,30	976,55	978,80	981,05	983,30	985,55	987,80	990,05	992,30	994,55	996,80	999,05	1001,30	1003,55	1005,80	1008,05	1010,30	1012,55	1014,80	1017,05	1019,30	1021,55	1023,80	1026,05	1028,30	1030,55	1032,80	1035,05	1037,30	1039,55	1041,80	1044,05	1046,30	1048,55	1050,80	1053,05	1055,30	1057,55	1059,80	1062,05	1064,30	1066,55	1068,80	1071,05	1073,30	1075,55	1077,80	1080,05	1082,30	1084,55	1086,80	1089,05	1091,30	1093,55	1095,80	1098,05	1100,30	1102,55	1104,80	1107,05	1109,30	1111,55	1113,80	1116,05	1118,30	1120,55	1122,80	1125,05	1127,30	1129,55	1131,80	1134,05	1136,30	1138,55	1140,80	1143,05	1145,30	1147,55	1149,80	1152,05	1154,30	1156,55	1158,80	1161,05	1163,30	1165,55	1167,80	1170,05	1172,30	1174,55	1176,80	1179,05	1181,30	1183,55	1185,80	1188,05	1190,30	1192,55	1194,80	1197,05	1199,30	1201,55	1203,80	1206,05	1208,30	1210,55	1212,80	1215,05	1217,30	1219,55	1221,80	1224,05	1226,30	1228,55	1230,80	1233,05	1235,30	1237,55	1239,80	1242,05	1244,30	1246,55	1248,80	1251,05	1253,30	1255,55	1257,80	1260,05	1262,30	1264,55	1266,80	1269,05	1271,30	1273,55	1275,80	1278,05	1280,30	1282,55	1284,80	1287,05	1289,30	1291,55	1293,80	1296,05	1298,30	1300,55	1302,80	1305,05	1307,30	1309,55	1311,80	1314,05	1316,30	1318,55	1320,80	1323,05	1325,30	1327,55	1329,80	1332,05	1334,30	1336,55	1338,80	1341,05	1343,30	1345,55	1347,80	1350,05	1352,30	1354,55	1356,80	1359,05	1361,30	1363,55	1365,80	1368,05	1370,30	1372,55	1374,80	1377,05	1379,30	1381,55	1383,80	1386,05	1388,30	1390,55	1392,80	1395,05	1397,30	1399,55	1401,80	1404,05	1406,30	1408,55	1410,80	1413,05	1415,30	1417,55	1419,80	1422,05	1424,30	1426,55	1428,80	1431,05	1433,30	1435,55	1437,80	1440,05	1442,30	1444,55	1446,80	1449,05	1451,30	1453,55	1455,80	1458,05	1460,30	1462,55	1464,80	1467,05	1469,30	1471,55	1473,80	1476,05	1478,30	1480,55	1482,80	1485,05	1487,30	1489,55	1491,80	1494,05	1496,30	1498,55	1500,80	1503,05	1505,30	1507,55	1509,80	1512,05	1514,30	1516,55	1518,80	1521,05	1523,30	1525,55	1527,80	1530,05	1532,30	1534,55	1536,80	1539,05	1541,30	1543,55	1545,80	1548,05	1550,30	1552,55	1554,80	1557,05	1559,30	1561,55	1563,80	1566,05	1568,30	1570,55	1572,80	1575,05	1577,30	1579,55	1581,80	1584,05	1586,30	1588,55	1590,80	1593,05	1595,30	1597,55	1599,80	1602,05	1604,30	1606,55	1608,80	1611,05	1613,30	1615,55	1617,80	1620,05	1622,30	1624,55	1626,80	1629,05	1631,30	1633,55	1635,80	1638,05	1640,30	1642,55	1644,80	1647,05	1649,30	1651,55	1653,80	1656,05	1658,30	1660,55	1662,80	1665,05	1667,30	1669,55	1671,80	1674,05	1676,30	1678,55	1680,80	1683,05	1685,30	1687,55	1689,80	1692,05	1694,30	1696,55	1698,80	1701,05	1703,30	1705,55	1707,80	1710,05	1712,30	1714,55	1716,80	1719,05	1721,30	1723,55	1725,80	1728,05	1730,30	1732,55	1734,80	1737,05	1739,30	1741,55	1743,80	1746,05	1748,30	1750,55	1752,80	1755,05	1757,30	1759,55	1761,80	1764,05	1766,30	1768,55	1770,80	1773,05	1775,30	1777,55	1779,80	1782,05	1784,30	1786,55	1788,80	1791,05	1793,30	1795,55	1797,80	1800,05	1802,30	1804,55	1806,80	1809,05	1811,30	1813,55	1815,80	1818,05	1820,30	1822,55	1824,80	1827,05	1829,30	1831,55	1833,80	1836,05	1838,30	1840,55	1842,80	1845,05	1847,30	1849,55	1851,80	1854,05	1856,30	1858,55	1860,80	1863,05	1865,30	1867,55	1869,80	1872,05	1874,30	1876,55	1878,80	1881,05	1883,30	1885,55	1887,80	1890,05	1892,30	1894,55	1896,80	1899,05	1901,30	1903,55	1905,80	1908,05	1910,30	1912,55	1914,80	1917,05	1919,30	1921,55	1923,80	1926,05	1928,30	1930,55	1932,80	1935,05	1937,30	1939,55	1941,80	1944,05	1946,30	1948,55	1950,80	1953,05	1955,30	1957,55	1959,80	1962,05	1964,30	1966,55	1968,80	1971,05	1973,30	1975,55	1977,80	1980,05	1982,30	1984,55	1986,80	1989,05	1991,30	1993,55	1995,80	1998,05	2000,30	2002,55	2004,80	2007,05	2009,30	2011,55	2013,80	2016,05	2018,30	2020,55	2022,80	2025,05	2027,30	2029,55	2031,80	2034,05	2036,30	2038,55	2040,80	2043,05	2045,30	2047,55	2049,80	2052,05	2054,30	2056,55	2058,80	2061,05	2063,30	2065,55	2067,80	2070,05	2072,30	2074,55	2076,80	2079,05	2081,30	2083,55	2085,80	2088,05	2090,30	2092,55	2094,80	2097,05	2099,30	2101,55	2103,80	2106,05	2108,30	2110,55	2112,80	2115,05	2117,30	2119,55	2121,80	2124,05	2126,30	2128,55	2130,80	2133,05	2135,30	2137,55	2139,80	2142,05	2144,30	2146,55	2148,80	2151,05	2153,30	2155,55	2157,80	2160,05	2162,30	2164,55	2166,80	2169,05	2171,30	2173,55	2175,80	2178,05	2180,30	2182,55	2184,

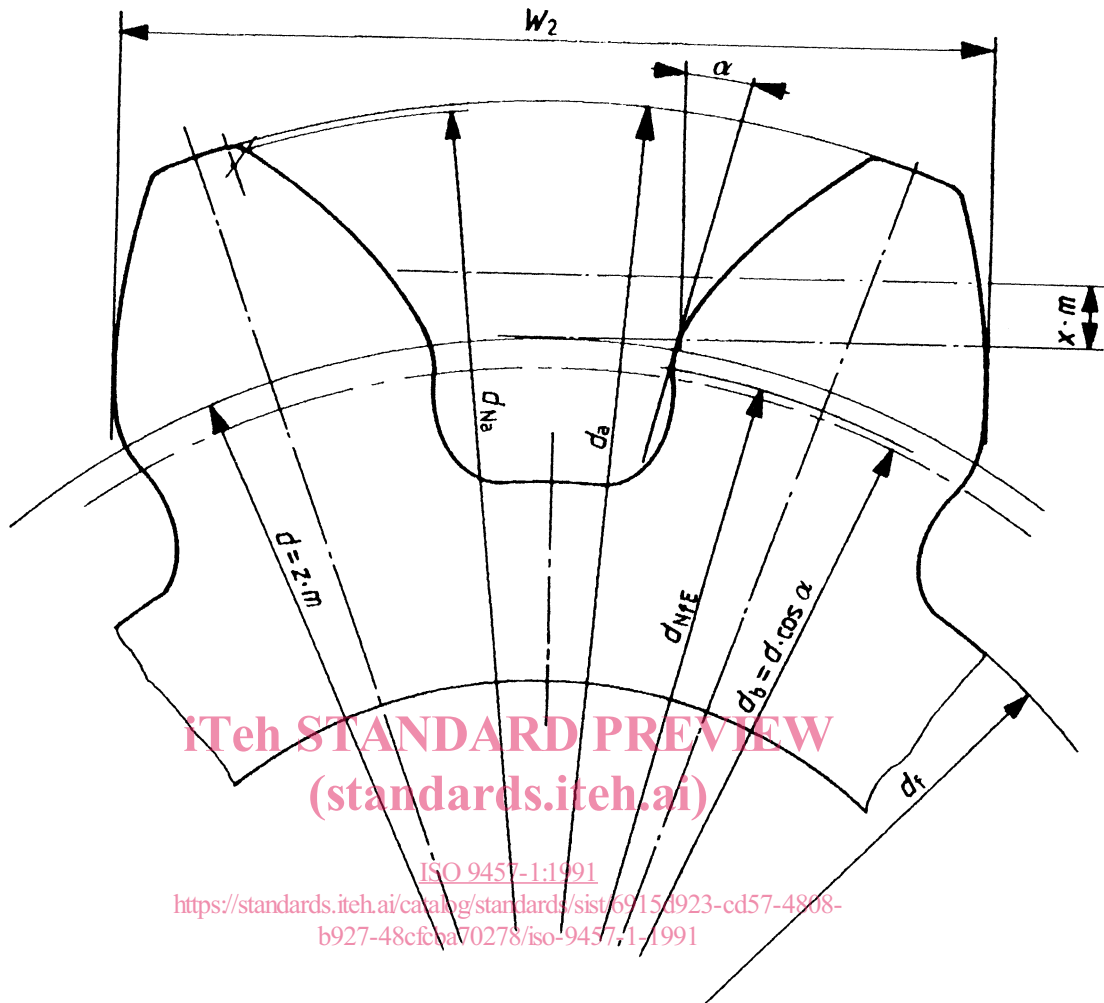


Figure 1

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**UDC 621.833.12:621.316.717:621.431.73**

**Descriptors:** road vehicles, internal combustion engines, engine starters, pinions, specifications, dimensions, tooth modulus, number of teeth.

Price based on 3 pages

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