PRODUCT DESCRIPTION

TIMING BELTS IN optibelt OMEGA PROFILE

STANDARD PROPERTIES

All optibelt OMEGA timing belts have inherent resistance to oil, heat, cold, ozone and tropical conditions. Special labelling is not required.

Oil resistance

The limited oil resistance prevents the damaging effects of mineral oils and greases, as long as these substances are not in permanent contact with the timing belt and/or are not present in large quantities. With increased demands for resistance, e.g. to mineral oils, the performance of the optibelt OMEGA timing belts can be improved by using special belt constructions. Please contact the optibelt Application Engineering Department.

Temperature resistance

The timing belt can withstand ambient temperatures from ≈ –30 °C to +100 °C. Temperatures outside this range lead to premature ageing and embrittlement of the timing belts and thus to their premature failure. The temperature resistance of optibelt OMEGA timing belts can be extended using special belt constructions, e.g. up to +140 °C. Please contact the OPTIBELT Application Engineering Department.

Antistatic properties

Antistatic properties enable the safe discharge of electrostatic charges. This charging can have such a strong impact on timing belts with insufficient electrical conductivity that there is the danger of ignition due to sparks. The use of antistatic timing belts requires that the properties be checked in accordance with ISO 9563, and is confirmed by the issue of an inspection certificate. OMEGA HP and OMEGA HL timing belts in profiles 8M and 14M as well as OMEGA FAN POWER are antistatic according to ISO 9563 by standard and are thus labelled accordingly.

Noise emission

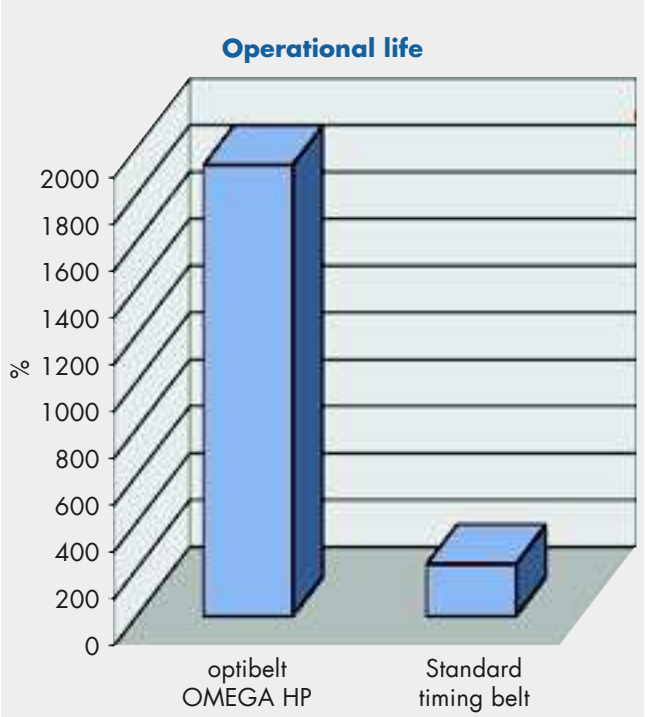
The optimized tooth shape and the indent in the tooth tip of the optibelt OMEGA promote a significantly lower noise level. In combination with the newly developed materials, the noise level is further reduced, even at high speeds and with high belt tensions.

Operational life

Belt designs with increased capacity can exceed the potential operational life of standard designs many times over, particularly for highly loaded or overloaded drives. Example: Dynamic tests with optibelt OMEGA HP show that the running times, compared to standard timing belts, are up to 18 times higher.

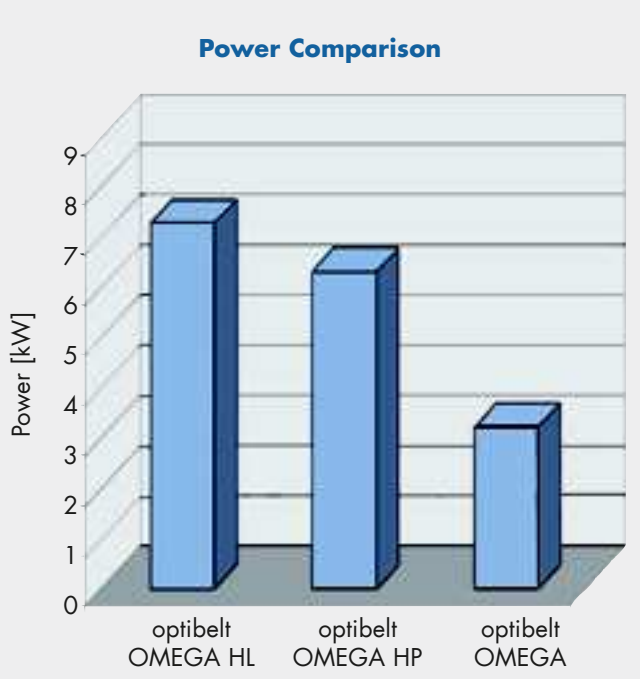
Efficiency

The specially developed tooth fabric and the flexible belt design make possible a virtually frictionless drive with an efficiency of up to 98 %.



Application example: roller path

PRODUCT DESCRIPTION
optibelt OMEGA HL TIMING BELTS
CHARACTERISTICS, ADVANTAGES AND APPLICATION EXAMPLES



Power ratings overview

Profile and design	8M HL	8M HP	8M
Pitch [mm]	8	8	8
Width [mm]	20	20	20
Pulley diameter [mm]	96.77	96.77	96.77
Speed [min^{-1}]	600	600	600
Nominal power [kW]	**6.86**	**5.96**	**2.82**

Preferred application areas

- textile machines
- machine tools
- compressors
- printing machines
- wood working machines
- paper machines

Overview of the advantages and characteristics of the optibelt OMEGA HL

- dimensionally stable structure with high flexibility
- very low permanent and elastic stretch of the cord
- friction and abrasion resistant, fabric with high shear strength
- up to 2.5 times higher power transmission capability (an increase of up to 150%) compared to standard OMEGA timing belts
- approx. up to 15% increase of the power transmission compared to the established high performance design OMEGA HP
- suitable for low and high speed, dynamically highly loaded drives
- good resistance to medium and high shock loading
- further extended, very large range of applications
- electrically antistatic to ISO 9563 confirmed on request

Advantages and characteristics of a drive with optibelt OMEGA HL timing belts in these application areas

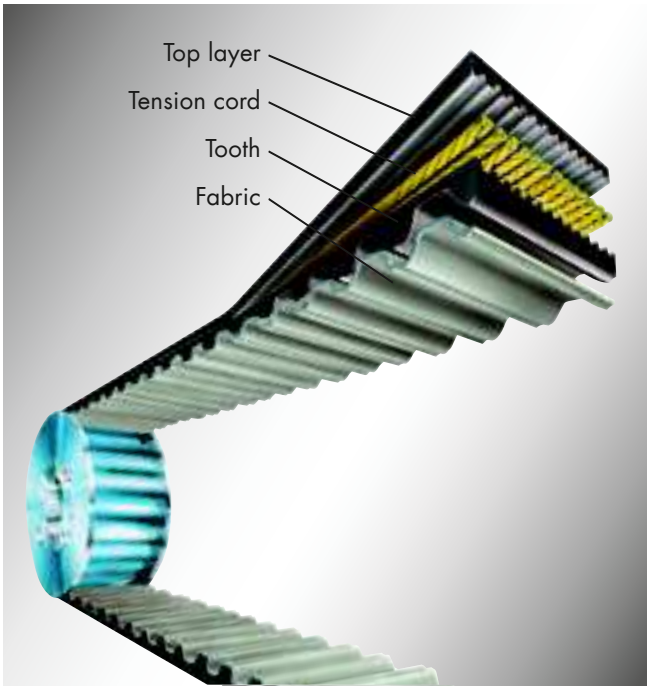
- reduced installation space compared to OMEGA HP and in particular to OMEGA timing belts in standard design
- reduced costs for belts and pulleys
- better options for drive design
- reduced shaft diameters and smaller bearings
- reduced running noise
- improved efficiency

Significant system cost reduction and high operational reliability for even greater economic efficiency in new drives.

For additional advantages and characteristics, see optibelt OMEGA on page 20.

PRODUCT DESCRIPTION
optibelt OMEGA HP TIMING BELTS

Structure



Top layer
A durable and flexible top layer protects the tension cord from external influences. In addition, the polychloroprene compound is reinforced with aramid fibres and has a degree of resistance to mineral oils and humidity as well as protection from wear and tear due to friction.

Tension cord
The tension cords are reinforced pairs of counter twisted glass fibres. These tension cords have very high tensile strength, very high flexibility and minimal stretch.

Teeth
The teeth consist of a new compound reinforced with aramid fibres, which guarantee high shear strength. They are shaped and exactly spaced in such a way that they mesh perfectly with the pulley teeth with minimal friction. The indent in the tooth guarantees quiet running.

Fabric
The specially developed polyamide fabric stands out due to its extraordinarily low frictional coefficient and its low noise characteristics.
It also protects the teeth from early wear and tear and prevents tooth shear.

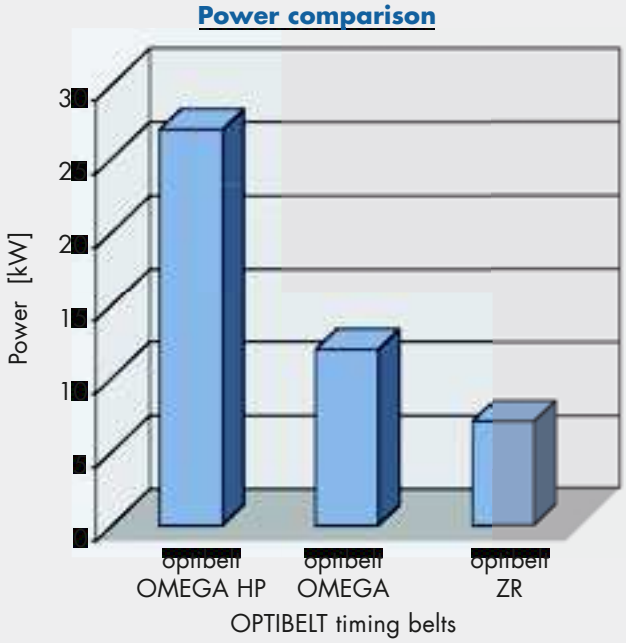
The high performance timing belt for high load, high speed machine drives
Compact synchronous drives are used in the whole field of mechanical drive engineering. High power transmission capability, good running characteristics and high operational safety are only some of the demands made on timing belts. Modern manufacturing techniques and quality inspections during all processing stages ensure products with highest reliability. optibelt OMEGA HP high performance timing belts have been especially developed for high load, low and high speed drives that are evenly loaded without heavy shock. Improved materials and optimised production form the basis for this very high performance range.
optibelt OMEGA, OMEGA HP and OMEGA HL timing belts are used in optibelt ZRS HTD® timing belt pulleys or in optibelt ZRS RPP® timing belt pulleys. For applications using other pulleys, please contact the OPTIBELT Application Engineering Department.

Application example: test bench

The new high performance timing belt optibelt OMEGA 5M HP
In the field of the high performance timing belts the optibelt OMEGA 5M HP has been developed for small pulley diameters, short centre distances and high speeds.
The optibelt OMEGA 5M HP transmits up to 3 times the power of an optibelt OMEGA 5M (an increase in power of up to 200 %). The performance level of the optibelt OMEGA 5M HP roughly corresponds with the level of the considerably larger section optibelt OMEGA 8M – with the same pulley diameters.

PRODUCT DESCRIPTION
optibelt OMEGA HP TIMING BELTS

Power comparison



Power ratings overview

Profile and design	8M HP	8M	H
Pitch [mm]	8	8	12.7
Width [mm]	20	20	19.05
Pulley diameter [mm]	96.77	96.77	97.02
Speed [min^{-1}]	2850	2850	2850
Nominal power [kW]	**24.4**	**10.8**	**6.0**

Preferred application areas

- textile machines
- machine tools
- compressors
- printing machines
- wood working machines
- paper machines

Overview of the advantages and characteristics of the optibelt OMEGA HP

- dimensionally stable structure with high flexibility
- low permanent and elastic stretch of the cord
- friction and abrasion resistant fabric with high shear strength
- approximately double power transmission capability (profile 5M HP approximately trebles the power transmission capacity) compared to OMEGA timing belts in their standard design
- suitable for low and high speed, high load drives
- good resistance and smooth operation, low and medium shock load
- large range of applications
- electrical antistatic according to ISO 9563 confirmed on request

Advantages and characteristics of a drive with optibelt OMEGA HP timing belts in these application areas

- considerably reduced drive volume compared to OMEGA timing belts in standard design
- reduced costs for belts and pulleys
- greater options for drive design
- reduced shaft diameters and smaller bearings
- reduced running noise levels
- improved efficiency

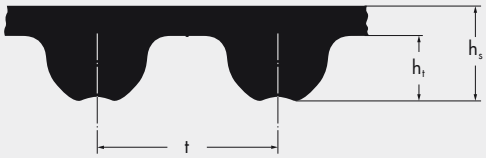
Significant system cost reduction and high operational reliability for even greater economic efficiency in new drives

For additional advantages and characteristics, see optibelt OMEGA on page 20.

PRODUCT DESCRIPTION

optibelt OMEGA HP TIMING BELTS

STANDARD PRODUCT RANGE



Profile	3M HP
t [mm]	3.0
h_s [mm]	2.3
h_t [mm]	1.1

optibelt OMEGA 3M HP

Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
111 3MHP•	111.00	37	294 3MHP•	294.00	98	600 3MHP•	600.00	200
129 3MHP•	129.00	43	300 3MHP	300.00	100	606 3MHP•	606.00	202
141 3MHP•	141.00	47	312 3MHP	312.00	104	615 3MHP•	615.00	205
144 3MHP	144.00	48	315 3MHP•	315.00	105	633 3MHP•	633.00	211
150 3MHP•	150.00	50	318 3MHP	318.00	106	669 3MHP	669.00	223
159 3MHP•	159.00	53	330 3MHP	330.00	110	675 3MHP•	675.00	225
165 3MHP•	165.00	55	333 3MHP•	333.00	111	711 3MHP•	711.00	237
168 3MHP•	168.00	56	339 3MHP•	339.00	113	738 3MHP•	738.00	246
171 3MHP•	171.00	57	345 3MHP•	345.00	115	804 3MHP•	804.00	268
174 3MHP	174.00	58	357 3MHP	357.00	119	816 3MHP•	816.00	272
177 3MHP	177.00	59	363 3MHP	363.00	121	843 3MHP•	843.00	281
180 3MHP•	180.00	60	366 3MHP•	366.00	122	882 3MHP•	882.00	294
183 3MHP•	183.00	61	384 3MHP	384.00	128	888 3MHP•	888.00	296
186 3MHP•	186.00	62	390 3MHP•	390.00	130	1062 3MHP•	1062.00	354
192 3MHP•	192.00	64	420 3MHP	420.00	140	1569 3MHP•	1569.00	523
195 3MHP•	195.00	65	426 3MHP•	426.00	142	1587 3MHP•	1587.00	529
201 3MHP	201.00	67	435 3MHP•	435.00	145	1692 3MHP•	1692.00	564
204 3MHP•	204.00	68	447 3MHP	447.00	149			
207 3MHP	207.00	69	462 3MHP•	462.00	154			
210 3MHP	210.00	70	474 3MHP	474.00	158			
213 3MHP•	213.00	71	480 3MHP•	480.00	160			
219 3MHP•	219.00	73	486 3MHP•	486.00	162			
225 3MHP	225.00	75	495 3MHP•	495.00	165			
237 3MHP	237.00	79	501 3MHP	501.00	167			
240 3MHP	240.00	80	513 3MHP	513.00	171			
246 3MHP•	246.00	82	519 3MHP•	519.00	173			
249 3MHP•	249.00	83	522 3MHP•	522.00	174			
252 3MHP•	252.00	84	525 3MHP•	525.00	175			
255 3MHP	255.00	85	531 3MHP•	531.00	177			
267 3MHP•	267.00	89	537 3MHP•	537.00	179			
276 3MHP	276.00	92	558 3MHP•	558.00	186			
282 3MHP•	282.00	94	564 3MHP•	564.00	188			
285 3MHP	285.00	95	570 3MHP•	570.00	190			
288 3MHP•	288.00	96	582 3MHP•	582.00	194			
291 3MHP•	291.00	97	597 3MHP	597.00	199			

Standard width: 6 mm, 9 mm, 15 mm
(Further sizes and special width ranges on request) • Not available ex stock

Order example:

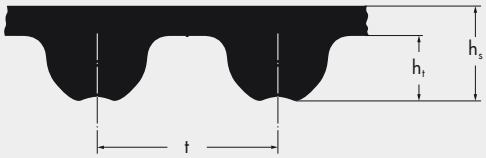
TIMING BELTS: optibelt OMEGA HP 225 3M HP 9

225 = 225 mm pitch length
3M HP = profile and design
9 = 9 mm belt width

PRODUCT DESCRIPTION

optibelt OMEGA HP TIMING BELTS

STANDARD PRODUCT RANGE



Profile	5M HP
t [mm]	5.0
h_s [mm]	3.4
h_t [mm]	1.9

optibelt OMEGA 5M HP

Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
180 5MHP	180.00	36	575 5MHP•	575.00	115	1000 5MHP	1000.00	200
225 5MHP	225.00	45	580 5MHP•	580.00	116	1025 5MHP•	1025.00	205
255 5MHP	255.00	51	600 5MHP	600.00	120	1035 5MHP•	1035.00	207
265 5MHP	265.00	53	610 5MHP•	610.00	122	1050 5MHP	1050.00	210
270 5MHP•	270.00	54	615 5MHP•	615.00	123	1100 5MHP•	1100.00	220
275 5MHP•	275.00	55	630 5MHP	630.00	126	1125 5MHP	1125.00	225
280 5MHP•	280.00	56	635 5MHP	635.00	127	1135 5MHP•	1135.00	227
295 5MHP•	295.00	59	640 5MHP•	640.00	128	1200 5MHP•	1200.00	240
300 5MHP•	300.00	60	645 5MHP	645.00	129	1270 5MHP•	1270.00	254
305 5MHP	305.00	61	650 5MHP•	650.00	130	1380 5MHP•	1380.00	276
325 5MHP	325.00	65	665 5MHP	665.00	133	1400 5MHP•	1400.00	280
330 5MHP	330.00	66	670 5MHP•	670.00	134	1420 5MHP	1420.00	284
340 5MHP•	340.00	68	700 5MHP	700.00	140	1425 5MHP•	1425.00	285
350 5MHP	350.00	70	710 5MHP	710.00	142	1500 5MHP•	1500.00	300
360 5MHP	360.00	72	720 5MHP•	720.00	144	1595 5MHP•	1595.00	319
365 5MHP•	365.00	73	740 5MHP	740.00	148	1690 5MHP•	1690.00	338
370 5MHP•	370.00	74	750 5MHP•	750.00	150	1790 5MHP•	1790.00	358
375 5MHP	375.00	75	755 5MHP	755.00	151	1870 5MHP•	1870.00	374
385 5MHP•	385.00	77	775 5MHP•	775.00	155	1895 5MHP•	1895.00	379
400 5MHP	400.00	80	790 5MHP•	790.00	158	2000 5MHP•	2000.00	400
415 5MHP•	415.00	83	800 5MHP	800.00	160	2110 5MHP•	2110.00	422
420 5MHP•	420.00	84	825 5MHP•	825.00	165	2350 5MHP•	2350.00	470
425 5MHP	425.00	85	830 5MHP•	830.00	166	2525 5MHP•	2525.00	505
450 5MHP	450.00	90	835 5MHP	835.00	167			
460 5MHP•	460.00	92	850 5MHP•	850.00	170			
475 5MHP	475.00	95	860 5MHP•	860.00	172			
490 5MHP•	490.00	98	890 5MHP	890.00	178			
500 5MHP	500.00	100	900 5MHP	900.00	180			
520 5MHP•	520.00	104	925 5MHP	925.00	185			
525 5MHP	525.00	105	935 5MHP•	935.00	187			
535 5MHP	535.00	107	940 5MHP•	940.00	188			
540 5MHP•	540.00	108	950 5MHP	950.00	190			
550 5MHP	550.00	110	965 5MHP•	965.00	193			
560 5MHP•	560.00	112	975 5MHP•	975.00	195			
565 5MHP	565.00	113	980 5MHP•	980.00	196			

Standard width: 9 mm, 15 mm, 25 mm
(Further sizes and special width ranges on request) • Not available ex stock

Order example:

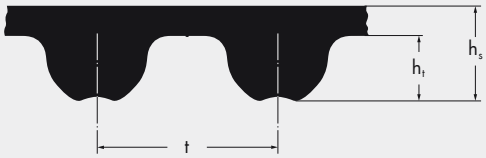
TIMING BELTS: optibelt OMEGA HP 1000 5M HP 25

1000 = 1000 mm pitch length
5M HP = profile and design
25 = 25 mm belt width

PRODUCT DESCRIPTION

optibelt OMEGA HP TIMING BELTS

STANDARD PRODUCT RANGE



Profile	8M HP
t [mm]	8.0
h_s [mm]	5.4
h_t [mm]	3.2

optibelt OMEGA 8M HP

Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
288 8MHP•	288.00	36	1000 8MHP	1000.00	125	2000 8MHP	2000.00	250
352 8MHP•	352.00	44	1040 8MHP	1040.00	130	2080 8MHP•	2080.00	260
376 8MHP•	376.00	47	1056 8MHP•	1056.00	132	2104 8MHP•	2104.00	263
416 8MHP•	416.00	52	1064 8MHP	1064.00	133	2240 8MHP	2240.00	280
424 8MHP	424.00	53	1080 8MHP	1080.00	135	2248 8MHP	2248.00	281
480 8MHP	480.00	60	1096 8MHP•	1096.00	137	2272 8MHP	2272.00	284
512 8MHP	512.00	64	1120 8MHP	1120.00	140	2400 8MHP	2400.00	300
520 8MHP	520.00	65	1128 8MHP	1128.00	141	2504 8MHP	2504.00	313
536 8MHP•	536.00	67	1160 8MHP	1160.00	145	2600 8MHP	2600.00	325
560 8MHP	560.00	70	1184 8MHP•	1184.00	148	2800 8MHP	2800.00	350
576 8MHP	576.00	72	1200 8MHP	1200.00	150	3048 8MHP	3048.00	381
584 8MHP•	584.00	73	1216 8MHP	1216.00	152	3280 8MHP	3280.00	410
600 8MHP	600.00	75	1224 8MHP	1224.00	153	3600 8MHP	3600.00	450
608 8MHP	608.00	76	1248 8MHP•	1248.00	156			
624 8MHP•	624.00	78	1256 8MHP	1256.00	157			
632 8MHP	632.00	79	1264 8MHP•	1264.00	158			
640 8MHP	640.00	80	1280 8MHP	1280.00	160			
656 8MHP	656.00	82	1304 8MHP	1304.00	163			
680 8MHP	680.00	85	1328 8MHP•	1328.00	166			
712 8MHP	712.00	89	1344 8MHP•	1344.00	168			
720 8MHP	720.00	90	1360 8MHP	1360.00	170			
760 8MHP	760.00	95	1400 8MHP	1400.00	175			
776 8MHP	776.00	97	1424 8MHP	1424.00	178			
784 8MHP	784.00	98	1440 8MHP	1440.00	180			
800 8MHP	800.00	100	1520 8MHP	1520.00	190			
824 8MHP	824.00	103	1552 8MHP	1552.00	194			
840 8MHP	840.00	105	1584 8MHP•	1584.00	198			
848 8MHP	848.00	106	1600 8MHP	1600.00	200			
856 8MHP	856.00	107	1680 8MHP•	1680.00	210			
880 8MHP	880.00	110	1696 8MHP	1696.00	212			
896 8MHP	896.00	112	1728 8MHP•	1728.00	216			
912 8MHP	912.00	114	1760 8MHP	1760.00	220			
920 8MHP	920.00	115	1800 8MHP	1800.00	225			
960 8MHP	960.00	120	1904 8MHP•	1904.00	238			
976 8MHP	976.00	122	1936 8MHP	1936.00	242			

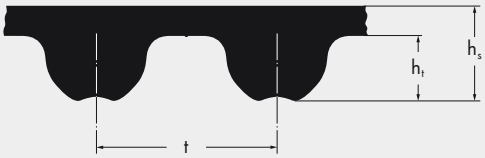
Standard width: 20 mm, 30 mm, 50 mm, 85 mm
(Further sizes and special width ranges on request) • Not available ex stock

Order example:

TIMING BELTS: optibelt OMEGA HP 1200 8M HP 20

1200 = 1200 mm pitch length
8M HP = profile and design
20 = 20 mm belt width

PRODUCT DESCRIPTION
optibelt OMEGA HP TIMING BELTS
STANDARD PRODUCT RANGE



Profile	14M HP
t [mm]	14.0
h_s [mm]	9.5
h_t [mm]	5.6

optibelt OMEGA 14M HP

Belt designation	Pitch length [mm]	Number of teeth	Belt designation	Pitch length [mm]	Number of teeth
966 14MHP	966.00	69	2800 14MHP	2800.00	200
1092 14MHP	1092.00	78	3150 14MHP	3150.00	225
1190 14MHP	1190.00	85	3360 14MHP	3360.00	240
1344 14MHP•	1344.00	96	3500 14MHP	3500.00	250
1400 14MHP	1400.00	100	3850 14MHP	3850.00	275
1456 14MHP•	1456.00	104	4326 14MHP	4326.00	309
1512 14MHP•	1512.00	108	4578 14MHP	4578.00	327
1610 14MHP	1610.00	115			
1680 14MHP•	1680.00	120			
1778 14MHP	1778.00	127			
1890 14MHP	1890.00	135			
2100 14MHP	2100.00	150			
2310 14MHP	2310.00	165			
2450 14MHP	2450.00	175			
2590 14MHP	2590.00	185			

Standard width: 40 mm, 55 mm, 85 mm, 115 mm, 170 mm
(Further sizes and special width ranges on request) • Not available ex stock

Order example:

TIMING BELTS: optibelt OMEGA HP 1400 14M HP 55

1400 = 1400 mm pitch length
14M HP = profile and design
55 = 55 mm belt width