PINGXIANG HUSHENG RUBBER PRODUCTS CO.,LTD

HTD 3M Synchronous Belt — Specification & Complete Size Chart

3 mm Pitch Curvilinear (HTD) Timing Belt · Conforms to ISO 13050 · Shusheng Brand

Shusheng

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HTD 3M Synchronous Belt — Specification, Materials & Complete Size Chart

1. HTD 3M Synchronous Belt Overview

A compact 3 mm pitch curvilinear tooth belt for precise, high-speed drives in office, medical and automation equipment.

The HTD 3M synchronous belt (also written 3M timing belt) is a **curvilinear tooth** timing belt with an exact **3 mm pitch**, built for compact, high-speed precision drives where accurate positioning, quiet running and a small installed size all matter. Power is transmitted by tooth-and-groove meshing rather than friction, so a 3M drive runs with no slip, no lubrication and near-zero backlash, and the rounded HTD tooth spreads stress evenly at the root to carry more torque than a trapezoidal profile of the same width.

A 3M belt delivers up to **98% transmission efficiency**, runs at line speeds up to **45 m/s** and holds a speed ratio up to **1:10**. Every belt here conforms to **ISO 13050**, the standard for metric-pitch curvilinear (HTD) synchronous belt drives, and is dimensionally interchangeable with equivalent-profile 3M belts from other makers. This document covers the belt code (section 2), the technical specification (section 3), the complete size list from **3M-90** to **3M-5100** (section 4), the materials (section 5) and contact details.



Figure 1: An HTD 3M synchronous belt — 3 mm pitch, 1.17 mm tooth height, 2.40 mm belt thickness — with the moulded belt code (HTD 420-3M) on the back.

2. Belt Designation & Code Meaning

How the profile, the dimensions and the code on the belt are read.

2.1 Profile geometry

The 3M profile is defined by four numbers: a **tooth pitch of 3 mm**, a **tooth height of about 1.17 mm**, a **belt total thickness of about 2.40 mm** and a **curvilinear (HTD) tooth form**. The rounded tooth flank meshes progressively with uniform stress distribution and minimal backlash in compact drives.

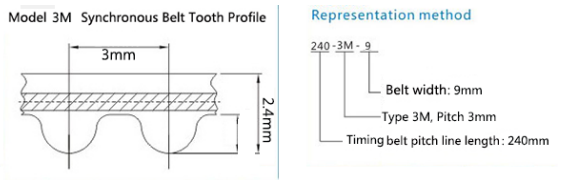


Figure 2: HTD 3M tooth profile and representation method — a 3 mm tooth pitch and about a 2.4 mm belt total thickness, with the code read as pitch line length – type 3M – belt width.

2.2 How the code reads

A 3M belt is designated by its **pitch line length in millimetres** together with the profile code **3M** and the width: **[Pitch Length] - [Pitch Code] - [Belt Width]**, for example **240-3M-9** is a 3M belt with a **240 mm pitch line length** and a **9 mm width**. Our size list and purchase codes write the same belt as **3M-240**; the codes **3M-240 and 240-3M are identical** and both mean a 3M belt with a 240 mm pitch line length. The size chart gives both forms side by side.

The number is the **pitch line length** measured at the cord line, not the outside or inside length. Since the pitch length is always a whole multiple of 3 mm, the tooth count follows directly: teeth = pitch length ÷ 3 mm. So **3M-240** is **240 mm** / 80 teeth, while **3M-90** is 90 mm and **3M-5100** is 5100 mm.

2.3 Belt widths

Four standard widths are stocked, chosen separately from the pitch length to suit the torque transmitted; non-standard widths and custom lengths are supplied on request.

Table 1 HTD 3M standard belt widths

Width (mm)	Typical Drive Duty
6 mm	Light-duty precision positioning, office equipment and small robotics
9 mm	Medium-duty compact drives, medical devices and automation modules
12 mm	Higher-torque compact drives and light industrial mini-drives
15 mm	Widest standard width, highest torque capacity of the 3M range

2.4 Marking & interchangeability

Each belt carries its pitch line length and the profile code 3M on the back, so a belt in service can be re-ordered without measuring the drive. A 3M belt must run on a 3M (HTD) pulley — not on an S3M or other 3 mm pulley, whose flatter tooth form will not mesh correctly.

3. Technical Specifications

All sizes share the same profile, materials and performance; only the pitch length and tooth count change.

Table 2 HTD 3M Synchronous Belt — Profile & Dimensions

Property	Specification
Profile / System	Metric-pitch curvilinear synchronous belt (HTD 3M series)
Tooth Pitch	3 mm
Tooth Height	~1.17 mm
Belt Total Thickness	~2.40 mm
Tooth Profile	Curvilinear (HTD)
Standard Widths	6 / 9 / 12 / 15 mm; non-standard widths on request
Standard	Conforms to ISO 13050 (synchronous belt drives, metric pitch, curvilinear tooth profile)

Table 3 HTD 3M Synchronous Belt — Performance & Ordering Data

Property	Specification
Tensile Member	High-strength glass fiber cord; aramid (Kevlar) cord optional
Body Compound	Premium synthetic chloroprene rubber (CR), with hydrogenated nitrile and rubber additives
Tooth Facing	Specially treated high-elasticity Nylon 66 fabric
Transmission Efficiency	Up to 98%
Maximum Linear Speed	45 m/s
Speed Ratio	Up to 1:10
Operating Temperature	−30 °C to +90 °C
Pitch Length Range	3M-90 to 3M-5100 — 90 mm to 5100 mm (408 standard models)
Minimum Order Quantity	200 pcs per size (standard); custom sizes on request
Indicative Price Range	US$0.50 – US$153.00 per piece (varies by length and width)
Lead Time	15–20 days

Every code in the range maps directly to its dimensions: the **number in the code is the pitch line length in millimetres**, and the **tooth count is that length divided by the 3 mm pitch**. So 3M-90 is 90 mm / 30 teeth, 3M-240 is 240 mm / 80 teeth, and 3M-5100 is 5100 mm / 1700 teeth.

4. Complete HTD 3M Size Chart

The table below lists every stocked HTD 3M belt with its pitch line length and tooth count, in both accepted code forms. The number in a 3M belt code is the pitch line length in millimetres — so **3M-240 and 240-3M are the same belt** — and the tooth count follows as pitch length divided by the 3 mm pitch.

Table 4 Complete HTD 3M Size Chart — 284 standard models, 3M-90 to 3M-969 • both code forms are given (3M-90 = 90-3M)

Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)
3M-90	90-3M	90	30	3M-312	312-3M	312	104	3M-525	525-3M	525	175	3M-738	738-3M	738	246
3M-99	99-3M	99	33	3M-315	315-3M	315	105	3M-528	528-3M	528	176	3M-741	741-3M	741	247
3M-105	105-3M	105	35	3M-318	318-3M	318	106	3M-531	531-3M	531	177	3M-744	744-3M	744	248
3M-108	108-3M	108	36	3M-321	321-3M	321	107	3M-534	534-3M	534	178	3M-747	747-3M	747	249
3M-111	111-3M	111	37	3M-324	324-3M	324	108	3M-537	537-3M	537	179	3M-750	750-3M	750	250
3M-114	114-3M	114	38	3M-327	327-3M	327	109	3M-540	540-3M	540	180	3M-753	753-3M	753	251
3M-117	117-3M	117	39	3M-330	330-3M	330	110	3M-543	543-3M	543	181	3M-756	756-3M	756	252
3M-120	120-3M	120	40	3M-333	333-3M	333	111	3M-546	546-3M	546	182	3M-762	762-3M	762	254
3M-123	123-3M	123	41	3M-336	336-3M	336	112	3M-549	549-3M	549	183	3M-765	765-3M	765	255
3M-126	126-3M	126	42	3M-339	339-3M	339	113	3M-552	552-3M	552	184	3M-768	768-3M	768	256
3M-129	129-3M	129	43	3M-342	342-3M	342	114	3M-555	555-3M	555	185	3M-771	771-3M	771	257
3M-132	132-3M	132	44	3M-345	345-3M	345	115	3M-558	558-3M	558	186	3M-774	774-3M	774	258
3M-135	135-3M	135	45	3M-348	348-3M	348	116	3M-561	561-3M	561	187	3M-777	777-3M	777	259
3M-138	138-3M	138	46	3M-351	351-3M	351	117	3M-564	564-3M	564	188	3M-780	780-3M	780	260
3M-141	141-3M	141	47	3M-354	354-3M	354	118	3M-567	567-3M	567	189	3M-783	783-3M	783	261
3M-144	144-3M	144	48	3M-357	357-3M	357	119	3M-570	570-3M	570	190	3M-786	786-3M	786	262
3M-147	147-3M	147	49	3M-360	360-3M	360	120	3M-573	573-3M	573	191	3M-789	789-3M	789	263
3M-150	150-3M	150	50	3M-363	363-3M	363	121	3M-576	576-3M	576	192	3M-792	792-3M	792	264
3M-153	153-3M	153	51	3M-366	366-3M	366	122	3M-579	579-3M	579	193	3M-795	795-3M	795	265
3M-156	156-3M	156	52	3M-369	369-3M	369	123	3M-582	582-3M	582	194	3M-798	798-3M	798	266
3M-159	159-3M	159	53	3M-372	372-3M	372	124	3M-585	585-3M	585	195	3M-801	801-3M	801	267
3M-162	162-3M	162	54	3M-375	375-3M	375	125	3M-588	588-3M	588	196	3M-804	804-3M	804	268
3M-165	165-3M	165	55	3M-378	378-3M	378	126	3M-591	591-3M	591	197	3M-807	807-3M	807	269
3M-168	168-3M	168	56	3M-381	381-3M	381	127	3M-594	594-3M	594	198	3M-810	810-3M	810	270
3M-171	171-3M	171	57	3M-384	384-3M	384	128	3M-597	597-3M	597	199	3M-813	813-3M	813	271
3M-174	174-3M	174	58	3M-387	387-3M	387	129	3M-600	600-3M	600	200	3M-816	816-3M	816	272
3M-177	177-3M	177	59	3M-390	390-3M	390	130	3M-603	603-3M	603	201	3M-819	819-3M	819	273
3M-180	180-3M	180	60	3M-393	393-3M	393	131	3M-606	606-3M	606	202	3M-822	822-3M	822	274
3M-183	183-3M	183	61	3M-396	396-3M	396	132	3M-609	609-3M	609	203	3M-825	825-3M	825	275
3M-186	186-3M	186	62	3M-399	399-3M	399	133	3M-612	612-3M	612	204	3M-828	828-3M	828	276
3M-189	189-3M	189	63	3M-402	402-3M	402	134	3M-615	615-3M	615	205	3M-831	831-3M	831	277
3M-192	192-3M	192	64	3M-405	405-3M	405	135	3M-618	618-3M	618	206	3M-834	834-3M	834	278
3M-195	195-3M	195	65	3M-408	408-3M	408	136	3M-621	621-3M	621	207	3M-837	837-3M	837	279
3M-198	198-3M	198	66	3M-411	411-3M	411	137	3M-624	624-3M	624	208	3M-840	840-3M	840	280
3M-201	201-3M	201	67	3M-414	414-3M	414	138	3M-627	627-3M	627	209	3M-843	843-3M	843	281
3M-204	204-3M	204	68	3M-417	417-3M	417	139	3M-630	630-3M	630	210	3M-852	852-3M	852	284
3M-207	207-3M	207	69	3M-420	420-3M	420	140	3M-633	633-3M	633	211	3M-855	855-3M	855	285
3M-210	210-3M	210	70	3M-423	423-3M	423	141	3M-636	636-3M	636	212	3M-858	858-3M	858	286
3M-213	213-3M	213	71	3M-426	426-3M	426	142	3M-639	639-3M	639	213	3M-861	861-3M	861	287
3M-216	216-3M	216	72	3M-429	429-3M	429	143	3M-642	642-3M	642	214	3M-864	864-3M	864	288
3M-219	219-3M	219	73	3M-432	432-3M	432	144	3M-645	645-3M	645	215	3M-867	867-3M	867	289
3M-222	222-3M	222	74	3M-435	435-3M	435	145	3M-648	648-3M	648	216	3M-870	870-3M	870	290
3M-225	225-3M	225	75	3M-438	438-3M	438	146	3M-651	651-3M	651	217	3M-873	873-3M	873	291
3M-228	228-3M	228	76	3M-441	441-3M	441	147	3M-654	654-3M	654	218	3M-876	876-3M	876	292
3M-231	231-3M	231	77	3M-444	444-3M	444	148	3M-657	657-3M	657	219	3M-879	879-3M	879	293
3M-234	234-3M	234	78	3M-447	447-3M	447	149	3M-660	660-3M	660	220	3M-882	882-3M	882	294
3M-237	237-3M	237	79	3M-450	450-3M	450	150	3M-663	663-3M	663	221	3M-885	885-3M	885	295
3M-240	240-3M	240	80	3M-453	453-3M	453	151	3M-666	666-3M	666	222	3M-888	888-3M	888	296
3M-243	243-3M	243	81	3M-456	456-3M	456	152	3M-669	669-3M	669	223	3M-891	891-3M	891	297
3M-246	246-3M	246	82	3M-459	459-3M	459	153	3M-672	672-3M	672	224	3M-894	894-3M	894	298
3M-249	249-3M	249	83	3M-462	462-3M	462	154	3M-675	675-3M	675	225	3M-897	897-3M	897	299
3M-252	252-3M	252	84	3M-465	465-3M	465	155	3M-678	678-3M	678	226	3M-900	900-3M	900	300
3M-255	255-3M	255	85	3M-468	468-3M	468	156	3M-681	681-3M	681	227	3M-903	903-3M	903	301
3M-258	258-3M	258	86	3M-471	471-3M	471	157	3M-684	684-3M	684	228	3M-906	906-3M	906	302
3M-261	261-3M	261	87	3M-474	474-3M	474	158	3M-687	687-3M	687	229	3M-909	909-3M	909	303
3M-264	264-3M	264	88	3M-477	477-3M	477	159	3M-690	690-3M	690	230	3M-912	912-3M	912	304
3M-267	267-3M	267	89	3M-480	480-3M	480	160	3M-693	693-3M	693	231	3M-915	915-3M	915	305
3M-270	270-3M	270	90	3M-483	483-3M	483	161	3M-696	696-3M	696	232	3M-918	918-3M	918	306
3M-273	273-3M	273	91	3M-486	486-3M	486	162	3M-699	699-3M	699	233	3M-921	921-3M	921	307
3M-276	276-3M	276	92	3M-489	489-3M	489	163	3M-702	702-3M	702	234	3M-930	930-3M	930	310
3M-279	279-3M	279	93	3M-492	492-3M	492	164	3M-705	705-3M	705	235	3M-933	933-3M	933	311
3M-282	282-3M	282	94	3M-495	495-3M	495	165	3M-708	708-3M	708	236	3M-936	936-3M	936	312
3M-285	285-3M	285	95	3M-498	498-3M	498	166	3M-711	711-3M	711	237	3M-939	939-3M	939	313
3M-288	288-3M	288	96	3M-501	501-3M	501	167	3M-714	714-3M	714	238	3M-945	945-3M	945	315
3M-291	291-3M	291	97	3M-504	504-3M	504	168	3M-717	717-3M	717	239	3M-948	948-3M	948	316
3M-294	294-3M	294	98	3M-507	507-3M	507	169	3M-720	720-3M	720	240	3M-951	951-3M	951	317
3M-297	297-3M	297	99	3M-510	510-3M	510	170	3M-723	723-3M	723	241	3M-954	954-3M	954	318
3M-300	300-3M	300	100	3M-513	513-3M	513	171	3M-726	726-3M	726	242	3M-957	957-3M	957	319
3M-303	303-3M	303	101	3M-516	516-3M	516	172	3M-729	729-3M	729	243	3M-960	960-3M	960	320
3M-306	306-3M	306	102	3M-519	519-3M	519	173	3M-732	732-3M	732	244	3M-966	966-3M	966	322
3M-309	309-3M	309	103	3M-522	522-3M	522	174	3M-735	735-3M	735	245	3M-969	969-3M	969	323

Table 5 Complete HTD 3M Size Chart — 124 standard models, 3M-975 to 3M-5100 • both code forms are given (3M-975 = 975-3M)

Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)	Belt Code	Equivalent Code	Pitch Length (mm)	Teeth (n)
3M-975	975-3M	975	325	3M-1170	1170-3M	1170	390	3M-1416	1416-3M	1416	472	3M-1863	1863-3M	1863	621
3M-981	981-3M	981	327	3M-1176	1176-3M	1176	392	3M-1425	1425-3M	1425	475	3M-1890	1890-3M	1890	630
3M-987	987-3M	987	329	3M-1185	1185-3M	1185	395	3M-1428	1428-3M	1428	476	3M-1896	1896-3M	1896	632
3M-990	990-3M	990	330	3M-1188	1188-3M	1188	396	3M-1431	1431-3M	1431	477	3M-1905	1905-3M	1905	635
3M-996	996-3M	996	332	3M-1194	1194-3M	1194	398	3M-1440	1440-3M	1440	480	3M-1950	1950-3M	1950	650
3M-1002	1002-3M	1002	334	3M-1200	1200-3M	1200	400	3M-1446	1446-3M	1446	482	3M-1980	1980-3M	1980	660
3M-1026	1026-3M	1026	342	3M-1209	1209-3M	1209	403	3M-1458	1458-3M	1458	486	3M-1998	1998-3M	1998	666
3M-1029	1029-3M	1029	343	3M-1221	1221-3M	1221	407	3M-1467	1467-3M	1467	489	3M-2001	2001-3M	2001	667
3M-1038	1038-3M	1038	346	3M-1224	1224-3M	1224	408	3M-1479	1479-3M	1479	493	3M-2040	2040-3M	2040	680
3M-1053	1053-3M	1053	351	3M-1230	1230-3M	1230	410	3M-1494	1494-3M	1494	498	3M-2100	2100-3M	2100	700
3M-1062	1062-3M	1062	354	3M-1236	1236-3M	1236	412	3M-1500	1500-3M	1500	500	3M-2121	2121-3M	2121	707
3M-1068	1068-3M	1068	356	3M-1239	1239-3M	1239	413	3M-1512	1512-3M	1512	504	3M-2160	2160-3M	2160	720
3M-1071	1071-3M	1071	357	3M-1245	1245-3M	1245	415	3M-1530	1530-3M	1530	510	3M-2220	2220-3M	2220	740
3M-1074	1074-3M	1074	358	3M-1260	1260-3M	1260	420	3M-1548	1548-3M	1548	516	3M-2301	2301-3M	2301	767
3M-1080	1080-3M	1080	360	3M-1263	1263-3M	1263	421	3M-1569	1569-3M	1569	523	3M-2349	2349-3M	2349	783
3M-1083	1083-3M	1083	361	3M-1266	1266-3M	1266	422	3M-1572	1572-3M	1572	524	3M-2388	2388-3M	2388	796
3M-1089	1089-3M	1089	363	3M-1290	1290-3M	1290	430	3M-1587	1587-3M	1587	529	3M-2460	2460-3M	2460	820
3M-1092	1092-3M	1092	364	3M-1302	1302-3M	1302	434	3M-1599	1599-3M	1599	533	3M-2499	2499-3M	2499	833
3M-1095	1095-3M	1095	365	3M-1323	1323-3M	1323	441	3M-1626	1626-3M	1626	542	3M-2640	2640-3M	2640	880
3M-1098	1098-3M	1098	366	3M-1332	1332-3M	1332	444	3M-1638	1638-3M	1638	546	3M-3000	3000-3M	3000	1000
3M-1101	1101-3M	1101	367	3M-1335	1335-3M	1335	445	3M-1650	1650-3M	1650	550	3M-3120	3120-3M	3120	1040
3M-1104	1104-3M	1104	368	3M-1344	1344-3M	1344	448	3M-1656	1656-3M	1656	552	3M-3240	3240-3M	3240	1080
3M-1107	1107-3M	1107	369	3M-1350	1350-3M	1350	450	3M-1662	1662-3M	1662	554	3M-3360	3360-3M	3360	1120
3M-1110	1110-3M	1110	370	3M-1359	1359-3M	1359	453	3M-1668	1668-3M	1668	556	3M-3420	3420-3M	3420	1140
3M-1113	1113-3M	1113	371	3M-1368	1368-3M	1368	456	3M-1674	1674-3M	1674	558	3M-3600	3600-3M	3600	1200
3M-1116	1116-3M	1116	372	3M-1374	1374-3M	1374	458	3M-1677	1677-3M	1677	559	3M-3990	3990-3M	3990	1330
3M-1119	1119-3M	1119	373	3M-1398	1398-3M	1398	466	3M-1680	1680-3M	1680	560	3M-4020	4020-3M	4020	1340
3M-1125	1125-3M	1125	375	3M-1401	1401-3M	1401	467	3M-1698	1698-3M	1698	566	3M-4200	4200-3M	4200	1400
3M-1131	1131-3M	1131	377	3M-1404	1404-3M	1404	468	3M-1764	1764-3M	1764	588	3M-4284	4284-3M	4284	1428
3M-1140	1140-3M	1140	380	3M-1407	1407-3M	1407	469	3M-1788	1788-3M	1788	596	3M-4698	4698-3M	4698	1566
3M-1146	1146-3M	1146	382	3M-1413	1413-3M	1413	471	3M-1800	1800-3M	1800	600	3M-5100	5100-3M	5100	1700

All **408** codes from **3M-90** to **3M-5100** are listed above; custom lengths and widths on request. Download the specification PDF from the product page: drive-belt.com/timing-belts/3m-belt.

5. Materials & Construction

> **Layer 01 — Tensile member**
> High-strength glass fiber cord with very low elongation (aramid / Kevlar optional), keeping the pitch length stable under load.

> **Layer 02 — Body compound**
> Premium synthetic chloroprene rubber (CR) with hydrogenated nitrile and additives; bonds and protects the cord and resists heat, cold, oil, water, acid, alkali, ozone and flex fatigue.

> **Layer 03 — Tooth facing**
> Specially treated high-elasticity Nylon 66 fabric; low friction and high wear resistance protect the tooth profile and keep the drive quiet.

5.1 Application

HTD 3M belts drive compact precision equipment such as laser printers, copiers, scanners, ATMs, medical devices and small automation modules.

6. Contact & Ordering Information

Company: Pingxiang Husheng Rubber Products Co.,Ltd • **Brand:** Shusheng
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