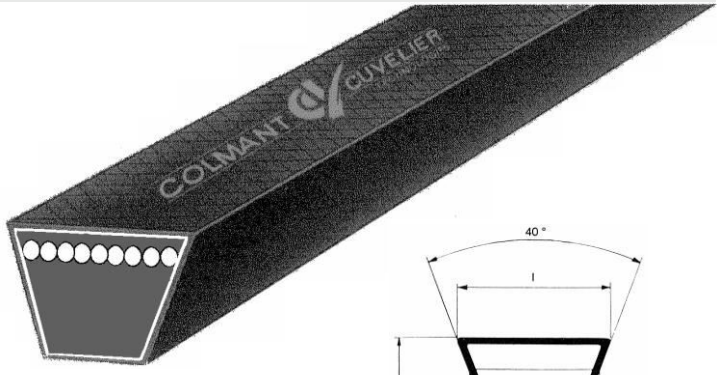
Function

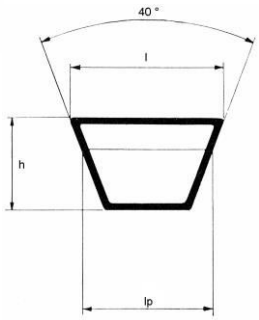
Flexible link between the motor and the machine which allows to transmit installed power in very good conditions. The VECO 100 belts, which are also called “classical belts”, are often used on working machines. For a new transmission, think of VECO 200 belts’ advantages and performances (see technical data sheet n°10001).



Conception

Endless V belts are made of:

- synthetic rubbers which guarantee a constant hardness
- polyester cord with controlled elasticity and high capacity of traction
- single wrapping (for Z, A and B sections) and double wrapping (for C and D sections) impregnated with polychloroprene compound which resists heat, oil, abrasion and ozone.



General Specifications

- Working temperature: -35° to +100°C
- antistatic following standard NF T 47 104 / ISO1813
- V belt sections following standard E 24 – 213
- Resistant to oil projection, hydrocarbure and diluted acids. ISO1817
- endure centrifugal strength

SECTION	l	h	lp
Z	10	6	8,5
A	13	8	11
B	17	11	14
C	22	14	19
D	32	19	27

Stocking conditions

See Technical data sheet n°10001-2

Stabilisation Process "ST"

The stabilisation process "ST" guarantees a small and continuous margin on the length. The length of V. belts follows the standard NF ISO 4184.

It means:

- easy to install
- even distribution of loads on multiple belt drives
- eliminate vibrations

Marking

6 C MADE IN EU VECO 100 A 1545 - A 60 DYNAM ® ST
COLMANT CUVELIER

On our DYNAM belts, you can read :

- the production date (codes month and year) : 6C
- ST mark
- the pitch length measured under strength, as well as the section : 1545 A60

THE " DYNAM LABEL "

Design

The DYNAM® system allows us to supply a pre-tensionned belt. This system ensures the correct tension by a simple reading of a length between 2 points. This measure only needs to be done once when you install your belt. There is no need to check it a second time. (see data sheet n°10003)

Performance

- The 1 % slip guarantees a performance of 95 %
- Better transmitted power : this system improves the efficiency of V. belt by 20 %
- Optimum performance is obtained when the linear speed is between 30 m/s and 33 m/s

Pitch lengths of our V.belts (in mm)

The sections of V.belts VECO 100® with "label DYNAM" that we can supply are : Z, A, B, C,D. Only the sizes in yellow are available with the DYNAM System.

Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.
Z (10 x 6)		A (13 x 8)				B (17 x 11)				C (22 x 14)			
Z15	400	A17 1/2	441	A59	1525	B28	745	B90	2322	C43	1135	C236	6053
Z16	430	A18 3/4	497	A60	1545	B30	790	B91	2340	C48	1244	C258	6065
Z17 1/4	455	A20	550	A61	1585	B31	825	B92	2380	C50	1315	C240	6101
Z17 3/4	480	A21 3/4	570	A62	1600	B32 1/4	860	B93	2400	C51	1341	C248	6345
Z18	487	A22 1/4	595	A62	1610	B34	900	B94	2423	C55	1441	C265	6790
Z19 1/2	515	A23	608	A63	1625	B35	919	B95	2455	C60	1565	C270	6861
Z20 1/2	530	A23 1/2	625	A64	1650	B35 1/4	930	B96	2477	C61	1608	C283	7145
Z21 3/4	578	A24	642	A64 1/2	1670	B35 1/4	934	B96 1/2	2500	C62 1/4	1630	C285	7295
Z23 3/4	621	A25	663	A65	1680	B36 3/4	970	B98	2535	C63 1/4	1670	C297	7600
Z24	640	A26	684	A66	1700	B38	1000	B100	2575	C65 1/4	1705	C300	7621
Z25 1/2	670	A27	716	A67	1730	B39	1026	B102	2626	C68	1776	C316	8045
Z27	714	A28	748	A68	1756	B40	1060	B102	2640	C70	1850	C330	8381
Z28	735	A29	767	A69	1780	B41	1085	B104	2688	C71 3/4	1881	C336	8592
Z28 1/2	750	A30	794	A70	1800	B42	1100	B105	2706	C73	1890	C345	8821
Z30	787	A30 3/4	810	A71	1830	B43	1125	B108	2790	C75	1951	C360	9146
Z30 3/4	800	A31	815	A72	1854	B44	1150	B110	2828	C79	2058	C394	10045
Z32	838	A32	835	A73	1880	B44 1/4	1165	B112	2884	C79 1/2	2076	C420	10670
Z32 1/2	850	A33	857	A74	1905	B45	1185	B114	2941	C80	2095	C441	11245
Z34 1/4	887	A33 1/2	883	A75	1931	B46	1200	B116	2995	C81	2105		
Z34 1/2	900	A34	900	A76	1955	B47 1/4	1236	B118	3034	C83	2145		
Z35	914	A35	912	A77	1980	B48	1261	B120	3087	C84	2165		
Z36	925	A36	945	A78	2000	B49	1280	B124	3182	C85	2210		
Z36 1/2	950	A37	960	A79	2030	B50	1305	B128	3290	C87 1/2	2279		
Z36 3/4	970	A37 1/4	971	A80	2060	B51	1328	B128 1/2	3308	C90	2335		
Z38	990	A38	993	A81	2085	B52	1365	B131 1/2	3387	C93	2406		
Z38 1/4	1000	A38 1/4	1000	A82	2120	B53	1385	B134	3420	C95	2470		
Z39	1020	A38 1/2	1010	A84	2150	B54	1407	B135	3465	C96	2490		
Z40	1040	A39	1021	A85	2190	B55	1428	B140	3582	C100	2575		
Z40 1/2	1060	A40	1045	A87	2235	B56	1465	B144	3698	C103	2675		
Z41 1/2	1075	A41	1060	A88	2250	B57	1490	B147	3774	C105	2719		
Z42	1082	A41 1/2	1085	A89	2296	B58	1500	B151	3896	C108	2805		
Z42 1/2	1105	A42	1093	A90	2315	B58 1/2	1533	B154	3941	C110	2838		
Z43 1/4	1125	A43	1110	A91	2336	B60	1552	B155 1/4	3990	C112	2897		
Z44	1145	A43 1/2	1127	A92	2387	B61	1580	B158	4052	C116	3000		
Z46	1180	A44	1150	A94	2415	B62	1620	B162	4150	C118	3041		
Z47	1200	A45	1165	A96	2470	B64	1670	B167	4277	C120	3100		
Z48	1250	A46	1193	A97	2489	B66 1/4	1720	B173	4432	C124	3195		
Z51	1340	A47	1220	A98	2525	B67 1/4	1763	B175	4490	C128	3303		
Z52 1/2	1362	A48	1244	A103 3/4	2667	B68	1774	B180	4612	C132	3397		
Z54	1400	A48 1/2	1260	A105	2699	B70	1810	B192	4920	C134	3448		
Z55	1420	A49	1275	A110	2819	B71	1838	B195	4992	C136	3515		
Z56	1450	A49 1/2	1280	A112	2877	B72	1864	B204	5225	C140	3600		
Z59	1525	A50	1300	A120	3080	B73	1885	B210	5370	C141	3655		
Z60	1550	A50 1/4	1310	A124	3175	B74	1925	B224	5698	C144	3711		
Z65	1675	A51	1321	A128	3283	B75	1938	B240	6098	C148	3830		
		A52	1346	A137	3507	B76	1960	B248	6332	C153	3940		
		A52	1355	A139	3574	B78	2010	B270	6858	C158	4045		
		A53 1/4	1380	A141	3614	B80	1070	B274	7000	C162	4163		
		A53 1/4	1385	A144	3691	B81	1092	B281	7132	C165 3/4	4270		
		A54	1400	A162	4143	B82	2120	B282	7155	C173	4445		
		A55	1421	A180	4600	B83	2160	B285	7285	C177	4555		
		A55 3/4	1447	A188	4810	B84	2180	B300	7618	C180	4625		
		A56	1450	A196	5000	B85	2197			C195	5005		
		A57	1475	A203	5130	B86	2210			C204	5226		
		A58	1500	A220	5614	B87	2245			C210	5410		
		A58 1/2	1515			B88	2270			C220	5645		
Lp = li + 24 Lp = le - 16		Lp = li + 30 Lp = le - 20				Lp = li + 44 Lp = le - 26				Lp = li + 54 Lp = le - 36			
Weigth / metre 0,070 kg		Weigth / metre 0,130 kg				Weigth / metre 0,200 kg				Weigth / metre 0,370 kg			

Code R.M.A	Réf C.C.	Code R.M.A	Réf C.C.
D (32 x 19)			
D120	3118		
D125	3213		
D128	3321		
D136	3533		
D140	3636		
D144	3729		
D158	4063		
D162	4181		
D173	4463		
D180	4643		
D195	5023		
D198	5076		
D212	5420		
D220	5663		
D240	6103		
D250	6363		
D270	6863		
D280	7163		
D300	7623		
D316	8063		
D330	8383		
D360	9148		
D371	9500		
D394	10063		
D420	10673		
D441	11263		
D480	12193		
D540	13718		
D600	15243		
D660	16784		
Lp = li + 70 Lp = le - 50			
Weigth / metre 0,710 kg			

Lp : pitch length ; li : internal length ; le : external length

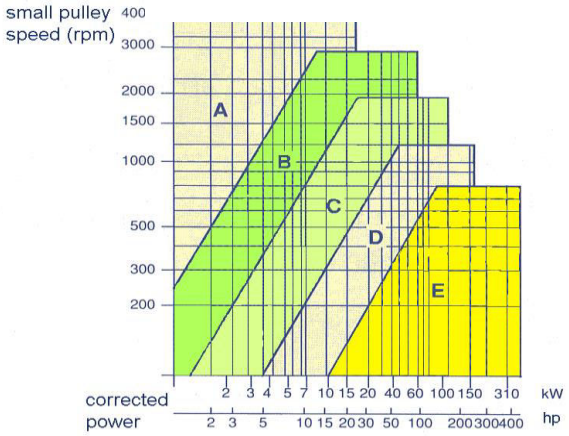
Estimating corrected power :

Use the above correction coefficients on the basis of the operating rating, the type of machine to be driven and the nature of the drive force.
The corrected power is : Pc = Power x Power correction.

DRIVE POWER	Electric motor with Cs / Cn ≤ 2 Heat engine with 2 or more cylinders			Electric motor with Cs / Cn >2 Heat engine with 1 cylinder only		
Power operating machines — Rating	8 hrs	16 hrs	24 hrs	8 hrs	16 hrs	24 hrs
LOW INERTIA : Rotary machine tools, light conveyors, agitators, small fans, centrifugal pumps.	1	1,1	1,2	1,2	1,3	1,4
AVERAGE INERTIA : Alternators, alternate machine tools, large conveyors, fans.	1,1	1,2	1,3	1,3	1,4	1,5
HIGH INERTIA : Hammer mills, mixers, piston pumps, wood cutting machines, paper mill machines.	1,2	1,3	1,4	1,4	1,5	1,6
VERY HIGH INERTIA : Rotary crushers, cylinder crushers, jar mills, roller mills.	1,3	1,4	1,5	1,7	1,8	1,9

Calculation example : electric motor - 30 kW - 1500 rpm - 60 mm ∅ shaft. Mixer : 750 rpm - 60 mm ∅ shaft.
Rating : 24 hrs per day. Infrequent start-ups. Distance between axes : 1100 mm.
Power correction : Pc = 30 x 1,3 = 39 kW.

Choosing the belt cross-section :



Using the belt selection charts, draw a vertical line up from the corrected power value, to the intersection with the horizontal line which gives the highest pulley speed.
The intersection gives the belt cross-section to use together with the diameter of the smallest transmission pulley.

Calculation example : speed : 1500 rpm
corrected power : 39 kW
the recommended cross-section is C

Selecting the pulley diameters :

Choose the pulley diameter keeping in mind that the greater the diameter, the greater the transmitted power. Conversely, do not select a diameter lower than those indicated below :

Section	Z	A	B	C	D
∅ mini	63	75	106	180	315

Calculation example : driver pulley = ∅250 - driven pulley = 250 x 2 = ∅500

Calculating the transmission ratio :

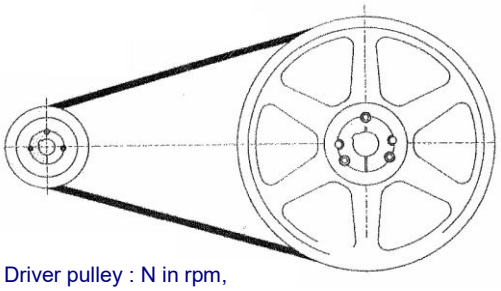
$$\text{Ratio} = \frac{\text{High shaft speed (rpm)}}{\text{Low shaft ratio (rpm)}} \quad \frac{N}{n}$$

Calculation example : r = 1500/750 = 2

Distances between axes :

If the distance between axes E is not given, use as a minimum :

- for a ratio less than 3 : $\frac{D + d}{2} + d$
- for a ratio greater than 3 : 1,2 D



Driver pulley : N in rpm, working diameterd in mm
r = N/n = D/d

Driven pulley : n in rpm, working diameter D in mm

Determining drive belt length (L) :

The following formula must be used :

$$Lo = 2E + 3{,}14 \frac{D + d}{2} + \frac{(D - d)^2}{4E}$$

Calculation example :
$Lo = 2 \times 1100 + 3{,}14 \times (500 + 250)/2 + (500 - 250)^2 / (4 \times 1100) = 3392$ mm

Selected length L = 3397 mm

Select the standard length L which is the closest to the calculated length Lo. The new distance between axes thus become :

$$E + \frac{L - Lo}{2} \text{ si } L > Lo \text{ ou } E - \frac{Lo - L}{2} \text{ si } L < Lo$$

E = 1100- (3397 - 3392) / 2 = 1103 mm

Determining the actual power belt drive :

Use the belt transmissible power tables (see technical data sheet n°10006 - 3, 4, 5 et 6) to find the gross transmissible power as function of the diameter of the small pulley. Correct this power by multiplying it by the length correction coefficient and the correction factor (see technical data sheet n°10006 - 3, 4, 5 et 6). Irrespective of whether a reduction or multiplication transmission is used, always lower these to the values corresponding to the small diameter pulley.

Calculation example : Using the table on sheet 10006 - 3, gross power per belt is 16,2 kW.
Length coefficient : 0,90
Arc correction factor : (D - d) / E = (500-250) / 1103 = 0,23, where the arc correction factor equals : 0,97
Actual transmissible power : 16,2 kW x 0,90 x 0,97 = 14,1 kW.

Number of VECO 200® DYNAM® sytem drive belt :

Divide the corrected power by the actual power transmitted by one belt. The result is rounded up to the next whole number

Calculation example : Nc = 39/14,1 = 2,77 belts, rounded up to 3 belts

Static load on the pulleys :

- Tension per strand T : $45 \times \frac{2{,}5 - G}{G} \times \frac{Pc}{Nc \times V} + MV^2$ (daN)

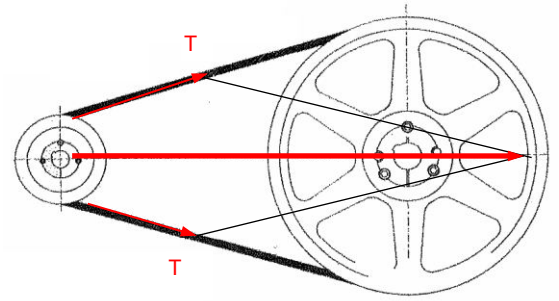
- Load on bearing R : 2 T xNc x sinus (β/2) (daN)
  G : arc correction factor (see table opposite)
  Pc : corrected power, kW
  Nc : number of belts
  V : belt linear speed in m/s : $\frac{d \times N \times}{60}$
  M : constant (see table below)

Section	A	B	C	D
M	0,011	0,018	0,031	0,06

(D - d) / E	β °	Factor G
0,00	180	1,00
0,10	174	0,99
0,20	169	0,97
0,30	163	0,96
0,40	157	0,94
0,50	151	0,92
0,60	145	0,90
0,70	139	0,88
0,80	133	0,87
0,90	127	0,85
1,00	120	0,83
1,10	113	0,80
1,20	106	0,77

DYNAM tensioning helps to ensure minimal bearing loads, obtaining effective bearing and roller to race contact, improving the installation overall efficiency.

Calculation example : tension per strand (C) = T = 45 x (2,5 - 0,97) / 0,97 x 39 / (3 x 19,63) + (0,031 x $19{,}63^2$) = 58,95
Static bearing load : R = 2 x 59,95 x 3 sin (169° / 2) = 352,1 daN



Power rating for a V-belt (A section) :

Ø small	500		720		950		1200		1450		2000		2500		2850		3500		4000	
pulley	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV
75	0,51	0,70	0,69	0,94	0,80	1,09	0,92	1,25	1,04	1,41	1,15	1,56	1,26	1,72	1,32	1,80	1,30	1,77	1,23	1,67
80	0,67	0,91	0,92	1,25	1,10	1,49	1,26	1,72	1,44	1,96	1,73	2,35	1,96	2,66	2,07	2,82	2,12	2,89	2,15	2,92
85	0,75	1,02	0,99	1,35	1,26	1,72	1,44	1,96	1,61	2,19	2,01	2,74	2,18	2,97	2,36	3,21	2,46	3,35	2,59	3,52
90	0,87	1,19	1,15	1,56	1,44	1,96	1,70	2,31	1,96	2,66	2,41	3,28	2,76	3,75	2,97	4,04	3,20	4,35	3,28	4,46
95	0,96	1,31	1,26	1,72	1,61	2,19	1,90	2,58	2,15	2,92	2,65	3,60	3,04	4,14	3,22	4,38	3,56	4,85	3,76	5,11
100	1,08	1,47	1,46	1,99	1,82	2,47	2,16	2,94	2,41	3,28	3,10	4,22	3,56	4,85	3,81	5,19	4,17	5,68	4,31	5,87
106	1,15	1,56	1,61	2,19	2,01	2,74	2,36	3,21	2,73	3,71	3,34	4,54	3,91	5,32	4,26	5,79	4,60	6,26	4,81	6,54
112	1,32	1,80	1,78	2,42	2,21	3,00	2,70	3,68	3,10	4,22	3,91	5,32	4,51	6,13	4,83	6,57	5,28	7,19	5,47	7,44
125	1,55	2,11	2,18	2,97	2,70	3,68	3,22	4,38	3,73	5,08	4,71	6,41	5,50	7,48	5,89	8,01	6,36	8,65	6,60	8,98
140	1,87	2,55	2,53	3,44	3,22	4,38	3,85	5,24	4,42	6,02	5,63	7,66	6,52	8,87	7,07	9,62	7,56	10,3	7,74	10,5
160	2,28	3,10	3,10	4,22	3,91	5,32	4,71	6,41	5,33	7,25	6,78	9,23	7,82	10,6	8,39	11,4	8,87	12,1	8,74	11,9
180	2,65	3,60	3,62	4,93	4,60	6,26	5,48	7,46	6,32	8,60	7,93	10,8	8,97	12,2	9,60	13,1	9,9	13,5	9,54	13,0
200	3,04	4,14	4,20	5,71	5,23	7,12	6,26	8,52	7,30	9,93	8,97	12,2	10,1	13,8	10,5	14,3	10,8	14,7	10,0	13,6

Power rating for a V-belt (B section) :

Ø small	400		500		720		950		1200		1450		2000		2500		2850		3500		4000	
pulley	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV
106	1,10	1,50	1,26	1,72	1,69	2,30	2,04	2,78	2,34	3,19	2,61	3,55	3,04	4,14	3,26	4,44	3,29	4,47	3,10	4,22	2,65	3,60
112	1,18	1,60	1,35	1,83	1,78	2,42	2,16	2,94	2,47	3,36	2,76	3,75	3,22	4,38	3,45	4,69	3,47	4,72	3,28	4,46	2,82	3,83
118	1,30	1,77	1,49	2,03	2,01	2,74	2,41	3,28	2,76	3,75	3,10	4,22	3,68	5,00	3,91	5,32	4,02	5,47	3,91	5,32	2,99	4,07
125	1,49	2,03	1,78	2,42	2,36	3,21	2,87	3,91	3,36	4,57	3,85	5,24	4,54	6,18	5,00	6,80	5,12	6,96	5,03	6,85	4,54	6,18
132	1,67	2,27	1,96	2,66	2,59	3,52	3,16	4,30	3,79	5,16	4,20	5,71	5,06	6,88	5,69	7,74	5,87	7,98	5,75	7,82	4,95	6,73
140	1,90	2,58	2,24	3,05	2,99	4,07	3,68	5,00	4,37	5,94	5,00	6,80	6,09	8,29	6,67	9,07	6,89	9,38	6,81	9,27	6,32	8,60
150	2,09	2,85	2,47	3,36	3,39	4,61	4,14	5,63	4,95	6,73	5,58	7,59	6,89	9,38	7,59	10,3	7,82	10,6	7,93	10,8	6,89	9,38
160	2,41	3,28	2,87	3,91	3,90	5,30	4,77	6,49	5,69	7,74	6,55	8,91	7,93	10,8	8,74	11,9	9,08	12,4	8,93	12,2	8,05	11,0
180	2,92	3,97	3,51	4,77	4,71	6,41	5,85	7,96	6,95	9,46	7,93	10,8	9,77	13,3	10,7	14,6	11,1	15,1	10,4	14,2		
200	3,42	4,65	4,09	5,57	5,52	7,51	6,89	9,38	8,22	11,2	9,42	12,8	11,4	15,5	12,4	16,9	12,6	17,1	11,5	15,6		
224	4,02	5,47	4,83	6,57	6,50	8,84	8,05	11,0	9,60	13,1	11,0	15,0	13,2	18,0	14,2	19,3	13,9	19,0				
250	4,60	6,26	5,54	7,54	7,59	10,3	9,48	12,9	11,1	15,2	12,6	17,2	14,9	20,3	15,7	21,3	15,1	20,5				
280	5,38	7,32	6,44	8,76	8,79	12,0	10,8	14,7	12,8	17,4	14,5	19,7	16,7	22,7	16,9	23,0						
315	6,21	8,45	7,38	10,0	10,1	13,7	12,4	16,9	14,6	19,9	16,3	22,2	18,3	24,9								

Power rating for a V-belt (C section) :

Ø small	200		400		500		600		720		950		1200		1450		2000		2500		2850	
pulley	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV
180	1,96	2,66	3,43	4,66	4,08	5,55	4,71	6,41	5,40	7,35	6,55	8,91	7,59	10,3	8,50	11,6	9,66	13,1	9,66	13,1	9,19	12,5
190	2,12	2,89	3,79	5,16	4,48	6,10	5,34	7,27	6,03	8,21	7,36	10,0	8,62	11,7	9,66	13,1	11,1	15,1	11,0	15,0	10,5	14,3
200	2,39	3,25	4,26	5,79	5,06	6,88	5,87	7,98	6,78	9,23	8,28	11,3	9,60	13,1	10,8	14,7	12,4	16,8	12,3	16,7	11,8	16,0
212	2,59	3,52	4,71	6,41	5,63	7,66	6,55	8,91	7,53	10,2	9,25	12,6	10,8	14,7	12,1	16,5	13,8	18,8	13,8	18,8	13,2	18,0
224	2,90	3,94	5,17	7,04	6,21	8,45	7,24	9,85	8,39	11,4	10,2	13,9	12,0	16,3	13,5	18,3	15,4	21,0	15,4	21,0	14,1	19,2
236	3,10	4,22	5,58	7,59	6,73	9,15	7,87	10,7	9,08	12,4	11,1	15,2	13,2	17,9	14,7	19,9	16,8	22,8	16,7	22,7	15,1	20,5
250	3,46	4,71	6,21	8,45	7,47	10,2	8,7	11,8	10,1	13,7	12,3	16,8	14,4	9,6	16,2	22,1	18,3	24,9	17,8	24,2	16,1	21,9
280	4,09	5,57	7,38	10,0	8,87	12,1	10,3	14,1	12,0	16,3	14,7	20,0	17,2	23,4	19,1	26,0	21,2	28,8	19,8	27,0		
300	4,42	6,02	8,14	11,1	9,77	13,3	11,4	15,5	13,2	18,0	16,1	21,9	18,9	25,7	20,9	28,5	22,6	30,8	20,1	27,4		
315	4,83	6,57	8,74	11,9	10,5	14,3	12,2	16,6	14,1	19,2	17,2	23,5	20,1	27,4	22,2	30,3	23,7	32,2				
355	5,64	7,68	10,2	13,9	12,3	16,8	14,3	19,5	16,6	22,5	20,2	27,5	23,3	31,7	25,4	34,6	25,6	34,9				
400	6,55	8,91	11,9	16,2	14,3	19,5	16,6	22,5	19,2	26,1	23,2	31,5	26,4	36,0	28,3	38,5						
450	7,56	10,3	13,7	18,6	16,5	22,4	19,0	25,9	22,0	29,9	26,2	35,7	29,4	40,0	30,7	41,8						

Power rating for a V-belt (D section) :

Ø small	100		200		300		400		500		600		720		800		950		1200		1450	
pulley	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV	kW	CV
315	3,68	5,00	6,67	9,07	9,31	12,7	11,7	15,9	13,9	18,9	15,9	21,6	18,1	24,6	19,3	26,2	21,3	29,0	23,7	32,3	24,7	33,6
335	4,14	5,63	7,45	10,1	10,4	14,2	13,0	17,8	15,5	21,1	17,8	24,2	20,4	27,8	21,7	29,6	24,1	32,8	26,8	36,4	27,6	37,5
355	4,54	6,18	8,28	11,3	11,5	15,6	14,5	19,8	17,2	23,5	19,8	27,0	22,8	31,0	24,1	32,8	26,8	36,4	29,7	40,4	30,6	41,6
375	4,95	6,73	9,03	12,3	12,6	17,2	16,0	21,7	19,0	25,9	21,8	29,7	24,8	33,8	26,6	36,1	29,4	40,0	32,4	44,1	34,5	46,9
400	5,46	7,43	9,94	13,5	14,0	19,0	17,7	24,1	21,1	28,7	24,1	32,8	27,8	37,8	29,4	40,0	32,5	44,3	35,8	48,6	36,1	49,1
450	6,50	8,84	11,8	16,1	16,7	22,8	21,2	28,8	25,2	34,3	28,9	39,3	32,8	44,6	35,0	47,6	38,5	52,3	41,4	56,3	40,7	55,3
500	7,53	10,2	13,7	18,7	19,3	26,3	24,5	33,3	29,2	39,7	33,3	45,4	38,1	51,8	40,2	54,7	43,7	59,4	46,1	62,7	43,5	59,1
560	8,68	11,8	15,9	21,7	22,5	30,7	28,5	38,7	33,9	46,1	38,6	52,6	43,7	59,4	45,9	62,4	49,3	67,1	50,2	68,3		
630	10,1	13,8	18,5	25,2	26,0	35,4	33,0	44,9	38,9	52,9	44,3	60,2	49,7	67,6	51,7	70,4	54,6	74,3	52,4	71,3		
710	11,6	15,8	21,3	29,0	30,1	41,0	37,8	51,5	44,6	60,7	50,1	68,2	55,6	75,7	57,5	78,2	58,7	79,9				

Speed 30 to 33 : dynamic balancing necessary

Beyond 33 m/s : accurate dynamic balancing necessary

Belt length correction factor :

A Section		B Section		C/D Section	
Pitch length	Coeff.	Pitch length	Coeff.	Pitch length	Coeff.
0,800 à 0,950	0,80	1,250 à 1,400	0,80	2,240 à 2,360	0,80
1,000 à 1,250	0,85	1,500 à 1,900	0,85	2,500 à 3,000	0,85
1,320 à 1,700	0,90	2,000 à 2,500	0,90	3,150 à 4,000	0,90
1,800 à 2,360	0,95	2,650 à 3,350	0,95	4,250 à 5,300	0,95
2,500 à 3,150	1,00	3,550 à 4,500	1,00	5,600 à 7,100	1,00
3,350 à 4,000	1,05	4,750 à 5,300	1,05	7,500 à 9,500	1,05
				10,000 à 12,500	1,10

Arc of contact factor:

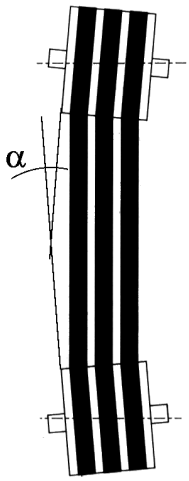
(D - d) / E	0,00	0,10	0,20	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,10	1,20	1,30	1,40	1,50
2 grooved pulleys	1,00	0,99	0,97	0,96	0,94	0,92	0,90	0,88	0,87	0,85	0,83	0,80	0,78	0,75	0,72	0,69

Keep if possible in the non coloured area

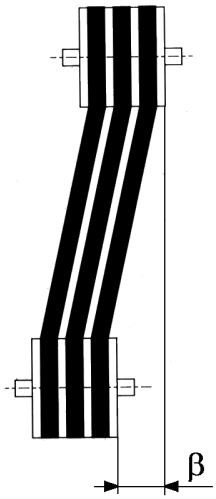
A proper installation is an important aspect for transmitting power with a transmission with Veco V-belts.
It must respect the parallelism of the shafts, the alignment of the pulleys and the correct setting of the DYNAM® tension device. The installation must also respect the following instructions :

- Use identical grooves profiles according to usual norms and tolerances. Make sure that grooves are clean and adequate to the belt's section used.
- Do not force when installing the belt in the grooves of the pulleys. Any kind of excessive effort can damaged the tensile cord. If necessary, reduce distance between shafts.
- If more than one belt are used, it is necessary to change them all in case of problem with one of them.
- Never use greasy or dissolving products which reduces considerably the adhesion factor of the VECO belt.

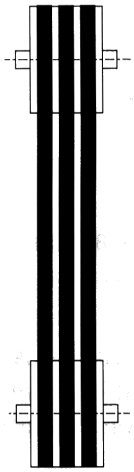
Shaft's parallelism and alignment of the pulleys :



Non parallel shafts



Parallel shafts, not aligned pulleys



Correct installation

Maximum Misalignment

α maxi = 0,5° OU β maxi = 8 mm per meter of distance between shafts

Installation tension :

The DYNAM label allows the proper tension thanks to a mark printed on the back of the belt.
- Tense the belt progressively controlling the length between the two marks.
- When length between marks is reached, start the transmission for a few revolutions.
- Check the length between the marks again, the tension of the belt is completed.

Attention : Always measure this length between the outside of the marks.

Following this instructions will guaranty the optimum working of your transmission.

< Tension of the installation / Init tension = 350 mm >

Use of tensile rollers

With V-belts, the rollers can be used to set the tension when none of the shafts can be moved, or to limit the vibrations.
A tensile roller can be flat or with grooves, set on the driven belts (preferably) or on the driving belts, inside (preferably) or outside of the belts. This leads to 6 current positions, shown of the drafts below. The roller's diameter must be the biggest possible, at least the diameter of the small pulley.

Roller on driven belts :

When roller can be blocked, this device is the most secure to avoid belts slipping. A mobile roller with weight or sping can be used if there is not risks that the torque be inverted.

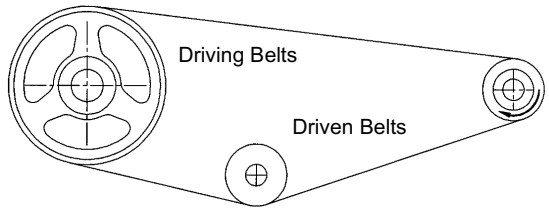


Figure 1 : Roller with inside grooves
Compulsory with wedge belts.
Location and direction : to be determinded by design in order to insure that the contact of belt with pulley is almost the same.(afterwards, the roller will be closer to the bigger pulley than the small one).

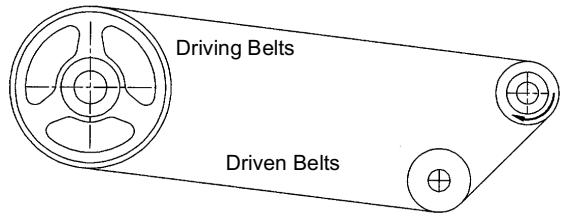


Figure 2 : Flat inside roller
The closest possible to the driving pulley making sure that the contact is sufficient.

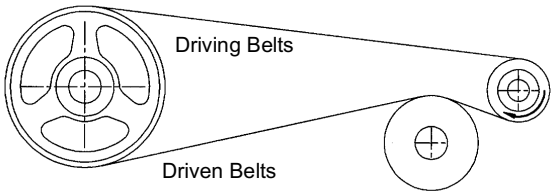


Figure 3 : Flat outside roller

Rollers on driving belts :

The roller must necessarily be blocked in that position.

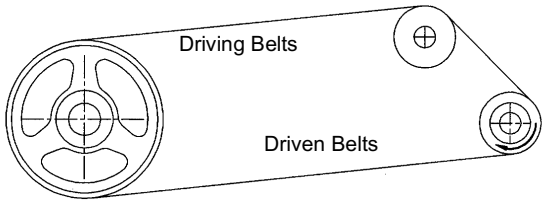


Figure 4 : Roller with grooves
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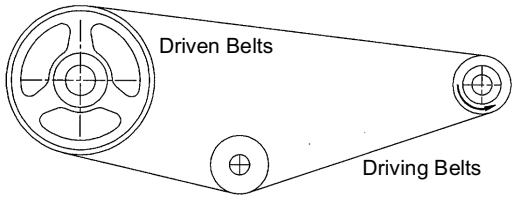

Figure 5 : Flat inside roller
Use of the rollers with double setting; taking into account the efforts on the belts

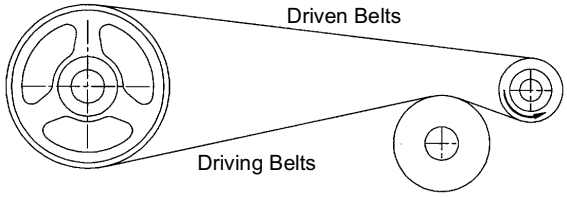

Figure 6 : Flat outside roller

TROUBLES AND SOLUTIONS

Troubles	Causes	Remedies
Belt breaking after fitting	- Forcing belt over pulley when fitting, damaging cord and cover - Ingress of a foreign body - Insufficient belts for drive	- Change the belt without forcing - Check drive details
Cuts and splits in the base of the belt	- Outside idler pulley in use - Use of the internal face of the belt - Pulley diameter too small	- Replace with inside idler pulley - Using the recommended minimum pulley pitch diameter
Belt cannot be retensioned	- Regulation is too small - Excessive stretch - Belts from different manufacturers used on the same drive	- Increase the regulation possibility - Recalculate drive design and modify - Replace with new matched set of belts - Change the complete set
Friction, belt turn over in pulleys	- Poor drive alignment - Incorrect pulley groove section - Use of the grooves - Vibrations - Low belt tension - Excessive wear on belts flanks	- Realign or replace the pulleys - Retension belt - Renew the belt - Use banded belt VECOBAND®
Excessive wear on belts flanks	- Incorrect pulley groove angle - Incorrect pulley section - Excessive wear in pulley grooves - Poor drive alignment	- Renew pulleys - Realign
Break of belts flanks	- Heating of the belt - Too high temperature (> 80 °C) - Slid	- Remove source of heat - Use "LONGUE DUREE®" belts - Retension belt
Excessive noise	- Incorrect belt tension - Overload drive	- Retension belt - Check drive details and redesign if necessary
Overload of bearings	- Overload or overdimensionned drive - Belt tension too high	- Redesign drive - Control the tension again
Belt swelling or softening	- Contamination by oil or other chemicals - Temperature too high > 80 °C	- Protect drive from contamination - Clean pulley's grooves - Use "LONGUE DUREE®" belts
Inegal use of the wrapping	- Rough pulleys - Excessive dust	- Change the pulleys - Equalize the surfaces of the pulleys
Separation of the belts	- Non standard pulleys - Excessive belt tension	- Redesign drive - Do the installation of belts again
Return of the belts	- Misalignment of pulleys - Excessive vibrations - Used pulleys	- Renew pulleys - Control the alignment
To long or to short belts	- Wrong belts - Wrong drive installation - Low belt tension	- Renew belts - Check drive installation
Lenght problems	- Used pulleys - Mix of new and old belts - Non parallel shafts - Belts provided by several suppliers	- Replace with new matched set of belts - Renew the pulleys - Check alignment - Use only new belts - Use VECOBAND® belts