

# DIN ISO 10823:2006-10 (E)

## Guidelines for the selection of roller chain drives (ISO 10823:2004)

---

<b>Contents</b>		<b>Page</b>
National foreword .....		3
1	Scope .....	5
2	Normative references .....	5
3	Symbols .....	5
4	Basic equations .....	5
4.1	Input power .....	5
4.2	Corrected power .....	5
5	Drive design specifications .....	6
6	Sprocket selection .....	7
7	Chain calculations and selection .....	7
7.1	Normal operating conditions and drive capacities for chains .....	7
7.2	Correction for other operating conditions for chains .....	11
7.3	Chain selection .....	13
7.4	Chain length .....	13
7.5	Chain speed .....	13
8	Maximum sprocket centre distance .....	14
9	Lubrication .....	15
9.1	Methods of lubrication .....	15
9.2	Oil viscosity .....	16
10	Good practice in drive design .....	16
10.1	Sprocket centre distance .....	16
10.2	Chain adjustment .....	18
10.3	Idlers .....	18
10.4	Drive layout .....	19
Annex A (informative) Example of chain drive selection .....		20
A.1	Given parameters .....	20
A.2	Sprocket selection .....	20
A.3	Chain calculations and selection .....	21
A.4	Maximum sprocket centre distance .....	22
A.5	Lubrication .....	22
Annex B (informative) Power rating equations .....		23
B.1	Power rating graph .....	23
B.2	Equations for power ratings limited by plate fatigue .....	24
B.3	Equations for power limited by roller and bush impact fatigue .....	25
B.4	Equation for power limited by pin-bush galling .....	25
B.5	Equations for lubrication speed limits .....	26

<b>Figures</b>	<b>Figure 1 -- Typical capacity chart for selection of Type A simplex chains based on a 19-tooth sprocket conforming with ISO 606 .....</b>	<b>8</b>
	<b>Figure 2 -- Typical capacity chart for selection of Type A heavy-series simplex chains based on a 19-tooth sprocket conforming with ISO 606 .....</b>	<b>9</b>
	<b>Figure 3 -- Typical capacity chart for selection of Type B simplex chains based on a 19-tooth sprocket conforming with ISO 606 .....</b>	<b>10</b>
	<b>Figure 4 -- Factor f2 allowing for the number of teeth on the small sprocket zs .....</b>	<b>12</b>
	<b>Figure 5 -- Lubrication ranges selection chart .....</b>	<b>17</b>
<b>DIN ISO 10823:2006-10</b>	<b>Figure 6 -- Chain slack adjustment .....</b>	<b>18</b>
	<b>Figure 7 -- Commonly used drive arrangements .....</b>	<b>19</b>
	<b>Figure A.1 -- Chain drive layout .....</b>	<b>20</b>
	<b>Figure B.1 -- Roller chain power rating elements for a 19-tooth sprocket .....</b>	<b>23</b>
<b>Tables</b>	<b>Table 1 -- Symbols, designations and units .....</b>	<b>6</b>
	<b>Table 2 -- Application factor f1 .....</b>	<b>11</b>
	<b>Table 3 -- Definitions of characteristics of driver machines .....</b>	<b>11</b>
	<b>Table 4 -- Definitions of characteristics of driven machines .....</b>	<b>11</b>
	<b>Table 5 -- Calculated values of factor f3 .....</b>	<b>14</b>
	<b>Table 6 -- Calculated values of factor f4 .....</b>	<b>15</b>
	<b>Table 7 -- Chain drive lubrication oil viscosity class .....</b>	<b>16</b>