TIMKEN



Timken®



2
5
9
10
12

13
14
20
22
28
29
37
51
55

65
66
69
75
85
93





14000





11

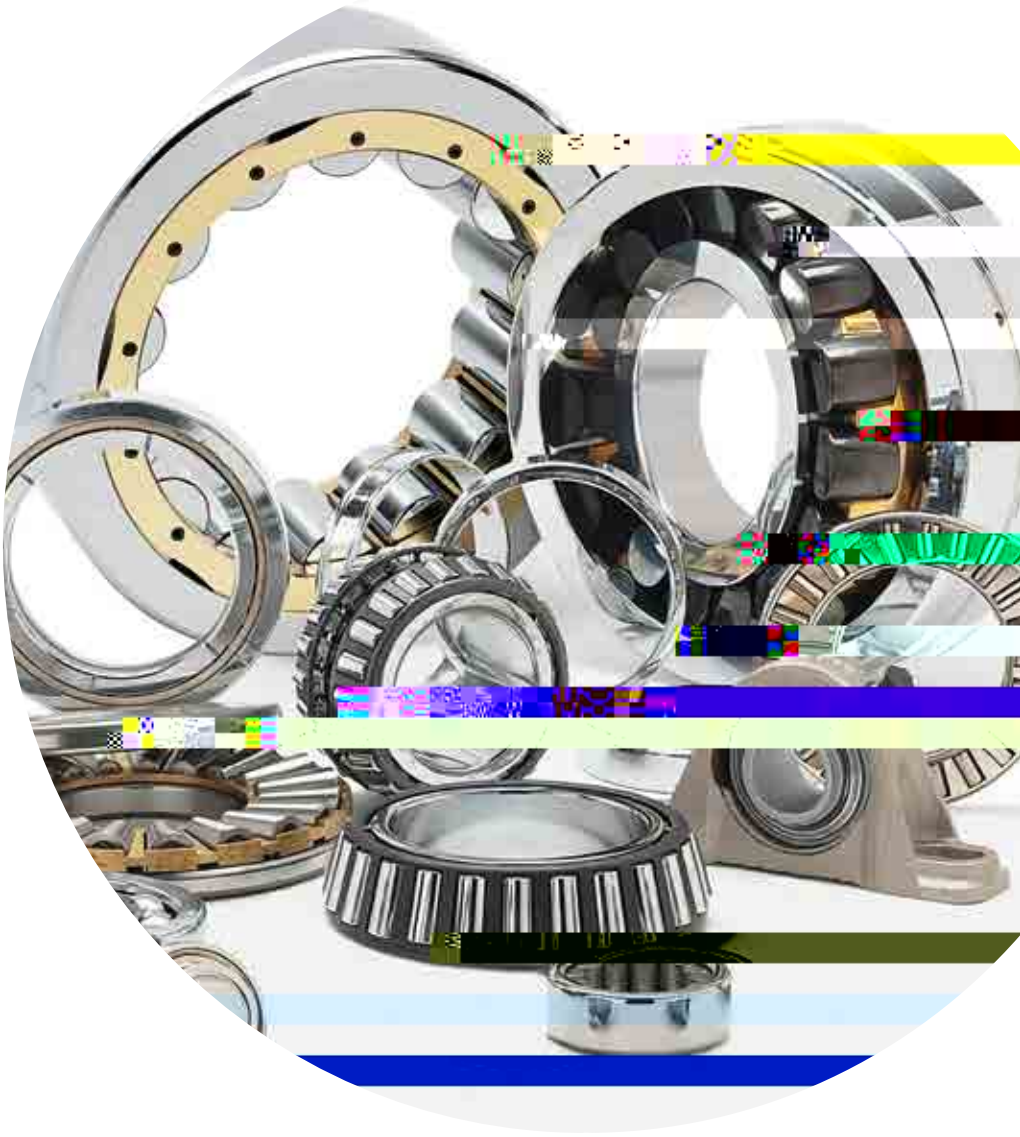


(OEM)

OEM



Timken



- /

Timken®

AquaSpexx® DuraSpexx

- Timken®

Timken®

Timken

Type E

Timken®

Timken®

Type E 55%

SNT SAF

Timken®







Timken® Quick-Flex

Timken

Quick-Flex

Timken® Mill Grease

Timken®







ISO ANSI/ABMA “
” “ ”/“ ”



/ (

“ ”)

/

-
-
-
-
-
-
- 0º C (32º F) 40º C (104º F)

/



- 60%
-
-
-

( )

149˚ C (300 ˚ F)

1010 1020

www.timken.com.cn

TIMKEN (10424C)

REACH (EC 1907/2006 RoHS (2011/65/EU) ATEX (94/9/EC) “CE” (93/68/EEC) (-

Timken TIMKEN (1502) 10424C)

TIMKEN
www.timken.com.cn

Timken

http://www.timken.com/termsandconditionsofsale

“ ”

www.timken.com.cn

TIMKEN (

10424C)

..... 14

..... 20

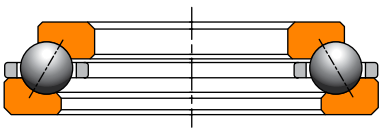
..... 22

/ 28

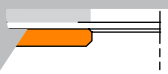
..... 29

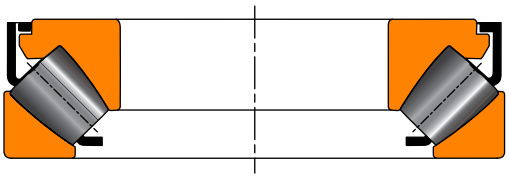
T, L –

DT, L – (











(Pa)

Pa

(Fr)

(Fa)

/ /

/ /

(Fa)

$P_a = X F_r + Y F_a$

50 ° TVL DTVL X = 0.76
Y = 1.00 F_a/F_r
1.56

$P_a = 1.2F_r + F_a$

Fr
Fa Fr≤0.55Fa
Fai = 1.2Fr
Fai

(F_{ac})

$$F_{ac} = Kc\ n^2 \times 10^{-5}\ (lbf/RPM)$$

Kc = **87-91**

(Fa min)

$$F_{a\ min} = 1.2\ F_r + F_{ac} >= C_{0a}/1000\ (lbf)$$

(Fa min)

(C_{0a}) **0.1%**

(a_1)

"

" " "

R (%)	L_n	a_1
90	*L_{10}*	*1,00*
95	**L_5**	**0,64**
96	**L_4**	**0,55**
97	**L_3**	**0,47**
98	**L_2**	**0,37**
99	**L_1**	**0,25**
99,5	**$L_{0,5}$**	**0,175**
99,9	**$L_{0,1}$**	**0,093**

(a_2)

Timken®

a_2 1.0

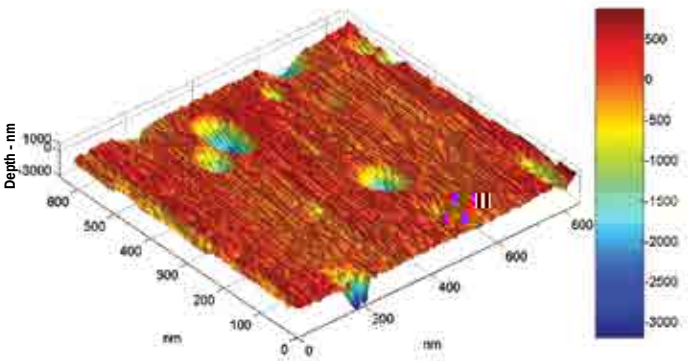
(

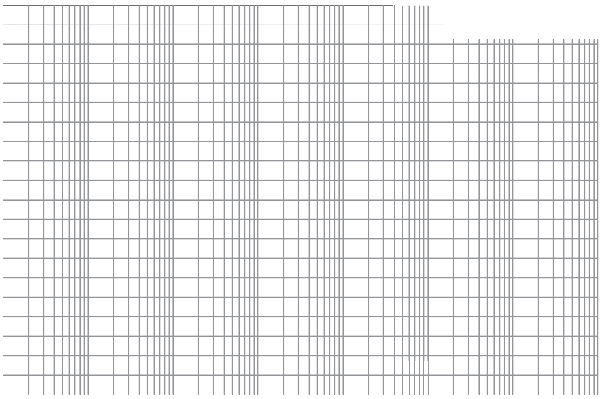
DuraSpexx®)

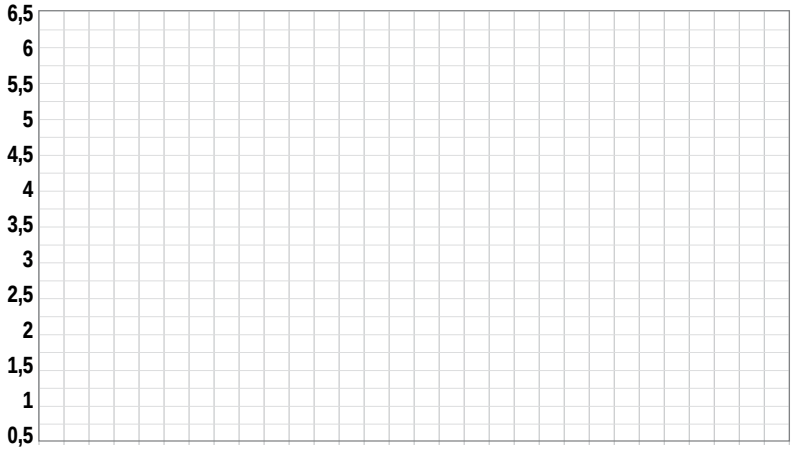
2400 Mpa (350 ksi)

(a_{3d})

40



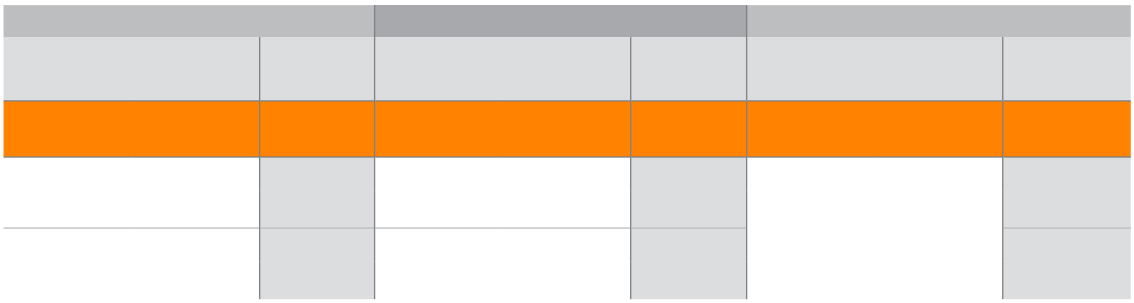


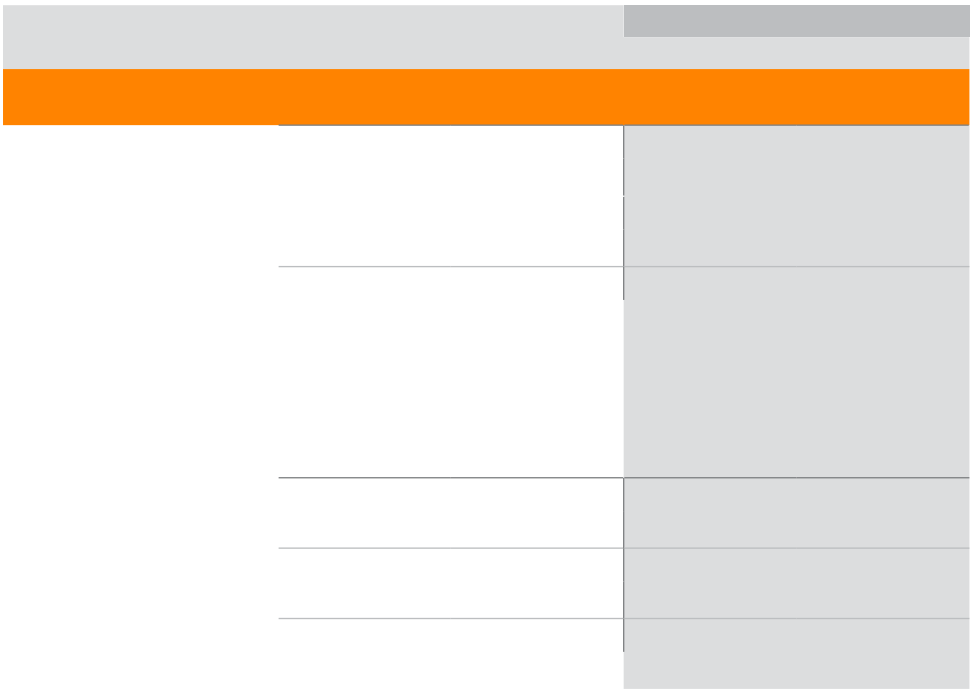

6,5
6
5,5
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
a_{3I}

$L_{10(\quad)} = [(1/L_1$

ISO Timken®

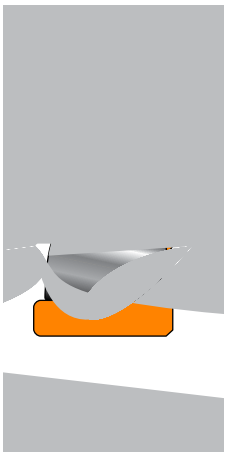
ABMA





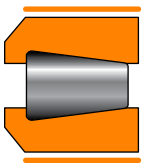
8. **–**

	mm in.	mm in.	mm in.	mm in.
TTHD TTHDFL TTHDFLSA TTDW TTDK TTHDSX-1 TTHDSX-2 TTHDSV-1 TTHDSV-2	0,000 0,0000	304,800 12,0000	+0,025 +0,0010	+0,000 +0,0000
	304,800 12,0000	609,600 24,0000	+0,051 +0,0020	+0,000 +0,0000
	609,600 24,0000	914,400 36,0000	+0,076 +0,0030	+0,000 +0,0000
	914,400 36,0000	1219,200 48,0000	+0,102 +0,0040	+0,000 +0,0000
	1219,200 48,0000	–	+0,127 +0,0050	+0,000 +0,0000
TTHDFLSX-1 TTHDFLSX-2 TTHDFLSX-3 TTHDFLSV-1 TTHDFLSV-2 TTHDDV	0,000 0,0000	317,500 12,5000	+0,000 +0,0000	-0,025 -0,0010
	317,500 12,5000	647,700 25,5000	+0,000 +0,0000	-0,051 -0,0020
TTHDFLSX-1 TTHDFLSX-2 TTHDFLSX-3 TTHDFLSV-1 TTHDFLSV-2 TTHDDV	0,000 0,0000	520,700 20,5000	+0,000 +0,0000	-0,127 -0,0050
	520,700 20,5000	647,700 25,5000	+0,000 +0,0000	-0,254 -0,0100
TTSP TTSPS TTC TTCS TTCL	0,000 0,0000	127,000 5,0000	+0,254 +0,0100	0,000 0,0000
	127,000 5,0000	203,200 8,0000	+0,381 +0,0150	0,000 0,0000
	203,200 8,0000	–	+0,508 +0,2000	0,000 0,0000



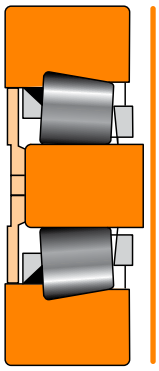
9. **– ( )**

	mm **in.**	**mm** **in.**	**mm** **in.**	**mm** **in.**
TTHD **TTHDFL** **TTHDFLSA** **TTHDSX-1** **TTHDSX-2** **TTHDSV-1** **TTHDSV-2** **TTHDFLSX-1** **TTHDFLSX-2** **TTHDFLSX-3** **TTHDFLSV-1** **TTHDFLSV-2** **TTHDDV**			**+0,381** **+0,015**	**-0,381** **-0,015**
TTDW **TTDK**			**+0,762** **+0,030**	**-0,762** **-0,030**
TTSP **TTSPS** **TTC** **TTCS** **TTCL**	**0,000** **0,0000**	**76,200** **3,0000**	**+0,254** **+0,0100**	**-0,254** **-0,0100**
	76,200 **3,0000**	**127,000** **5,0000**	**+0,381** **+0,0150**	**-0,381** **-0,0150**
	127,000 **5,0000**	–	**+0,508** **+0,2000**	**-0,508** **-0,2000**



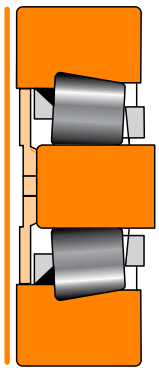
10. –

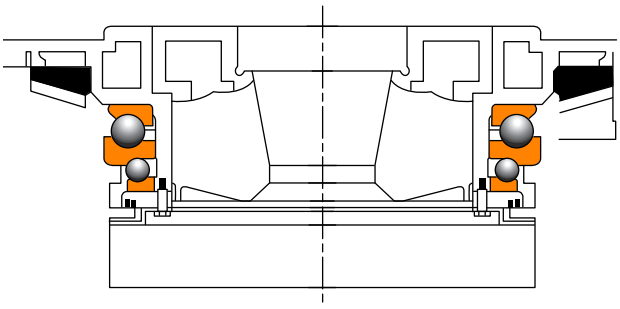
	mm in.	mm in.	mm in.	mm in.
TTDFLK	80,000 3,1496	120,000 4,7244	+0,000 +0,0000	-0,020 -0,0008
	120,000 4,7244	180,000 7,0866	+0,000 +0,0000	-0,025 -0,0010
	180,000 7,0866	250,000 9,8425	+0,000 +0,0000	-0,030 -0,0012
	250,000 9,8425	315,000 12,4016	+0,000 +0,0000	-0,035 -0,0014
	315,000 12,4016	400,000 15,7480	+0,000 +0,0000	-0,040 -0,0016
	400,000 15,7480	500,000 19,6850	+0,000 +0,0000	-0,045 -0,0018
	500,000 19,6850	630,000 24,8031	+0,000 +0,0000	-0,050 -0,0020

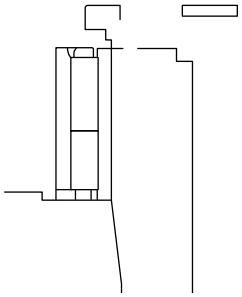


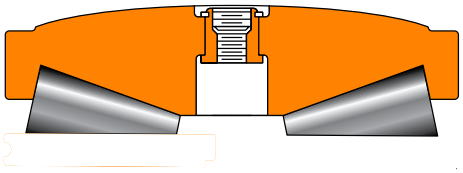
11. –

	mm in.	mm in.	mm in.	mm in.
TTDFLK	80,000 3,1496	120,000 4,7244	+0,000 +0,0000	-0,022 -0,0009
	120,000 4,7244	180,000 7,0866	+0,000 +0,0000	-0,025 -0,0010
	180,000 7,0866	250,000 9,8425	+0,000 +0,0000	-0,030 -0,0012
	250,000 9,8425	315,000 12,4016	+0,000 +0,0000	-0,035 -0,0014
	315,000 12,4016	400,000 15,7480	+0,000 +0,0000	-0,040 -0,0016
	400,000 15,7480	500,000 19,6850	+0,000 +0,0000	-0,045 -0,0018
	500,000 19,6850	630,000 24,8031	+0,000 +0,0000	-0,050 -0,0020
	630,000 24,8031	800,000 31,4961	+0,000 +0,0000	-0,075 -0,0030
	800,000 31,4961	1000,000 39,3701	+0,000 +0,0000	-0,100 -0,0039
	1000,000 39,3701	1250,000 49,2126	+0,000 +0,0000	-0,125 -0,0049
	1250,000 49,2126	1600,000 62,9921	+0,000 +0,0000	-0,160 -0,0063



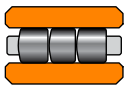




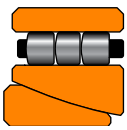




		(1)		(2)	
mm in	mm in	mm in	mm in	mm in	mm in
0,000	504,825	+0,076	+0,000	-0,152	-0,076



TP



TPS

14. – – TP TPS

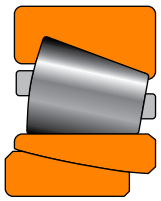
		.	
mm in	mm in	mm in	mm in
47,625 1,8750	53,975 2,1250	-0,025 -0,0010	-0,051 -0,0020
53,975 2,1250	63,500 2,5000	-0,028 -0,0011	-0,053 -0,0021
63,500 2,5000	76,200 3,0000	-0,030 -0,0012	-0,056 -0,0022
76,200 3,0000	88,900 3,5000	-0,033 -0,0012	-0,058 -0,0023
88,900 3,5000	177,800 7,0000	-0,038 -0,0015	-0,064 -0,0025
177,800 7,0000	228,600 9,0000	-0,038 -0,0015	-0,076 -0,0030
228,600 9,0000	304,800 12,0000	-0,046 -0,0018	-0,084 -0,0330
304,800 12,0000	381,000 15,0000	-0,051 -0,0020	-0,089 -0,0035
381,000 15,0000	482,600 19,0000	-0,051 -0,0020	-0,102 -0,0040
482,600 19,0000	584,200 23,0000	-0,064 -0,0025	-0,114 -0,0045
584,200 23,0000	762,000 30,0000	-0,076 -0,0030	-0,140 -0,0055

15. – – TP

		D .	
mm in	mm in	mm in	mm in
115,092 4,5312	254,000 10,0000	+0,076 +0,0030	+0,038 +0,0015
254,000 10,0000	457,200 18,0000	+0,102 +0,0040	+0,051 +0,002
457,200 18,0000	558,800 22,0000	+0,127 +0,0050	+0,064 +0,0025
558,800 22,0000	660,400 26,0000	+0,140 +0,0055	+0,064 +0,0025
660,400 26,0000	711,200 28,0000	+0,152 +0,0060	+0,076 +0,0030
711,200 28,0000	863,600 34,0000	+0,178 +0,0070	+0,076 +0,0030
863,600 34,0000	965,200 38,0000	+0,203 +0,0080	+0,089 +0,0035
965,200 38,0000	1117,600 44,0000	+0,229 +0,0090	+0,102 +0,0040

16. – – TPS

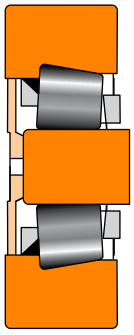
		D .	
mm in	mm in	mm in	mm in
50,800 2,0000	60,325 2,3750	+0,038 +0,0015	+0,013 +0,0005
60,325 2,3750	82,550 3,2500	+0,043 +0,0017	+0,018 +0,0007
82,550 3,2500	93,663 3,6875	+0,048 +0,0019	+0,023 +0,0009
93,663 3,6875	101,600 4,0000	+0,053 +0,0021	+0,028 +0,0011
101,600 4,0000	115,092 4,5312	+0,071 +0,0028	+0,033 +0,0013
115,092 4,5312	254,000 10,0000	+0,076 +0,0030	+0,038 +0,0015
254,000 10,0000	457,200 18,0000	+0,102 +0,0040	+0,051 +0,0020
457,200 18,0000	558,800 22,0000	+0,127 +0,0050	+0,064 +0,0025
558,800 22,0000	660,400 26,0000	+0,140 +0,0055	+0,064 +0,0025
660,400 26,0000	711,200 28,0000	+0,152 +0,0060	+0,076 +0,0030
711,200 28,0000	863,600 34,0000	+0,178 +0,0070	+0,076 +0,0030
863,600 34,0000	965,200 38,0000	+0,203 +0,0080	+0,089 +0,0035
965,200 38,0000	1117,600 44,0000	+0,229 +0,0090	+0,102 +0,0040



TTHD

TTHDFLS

(1) +0

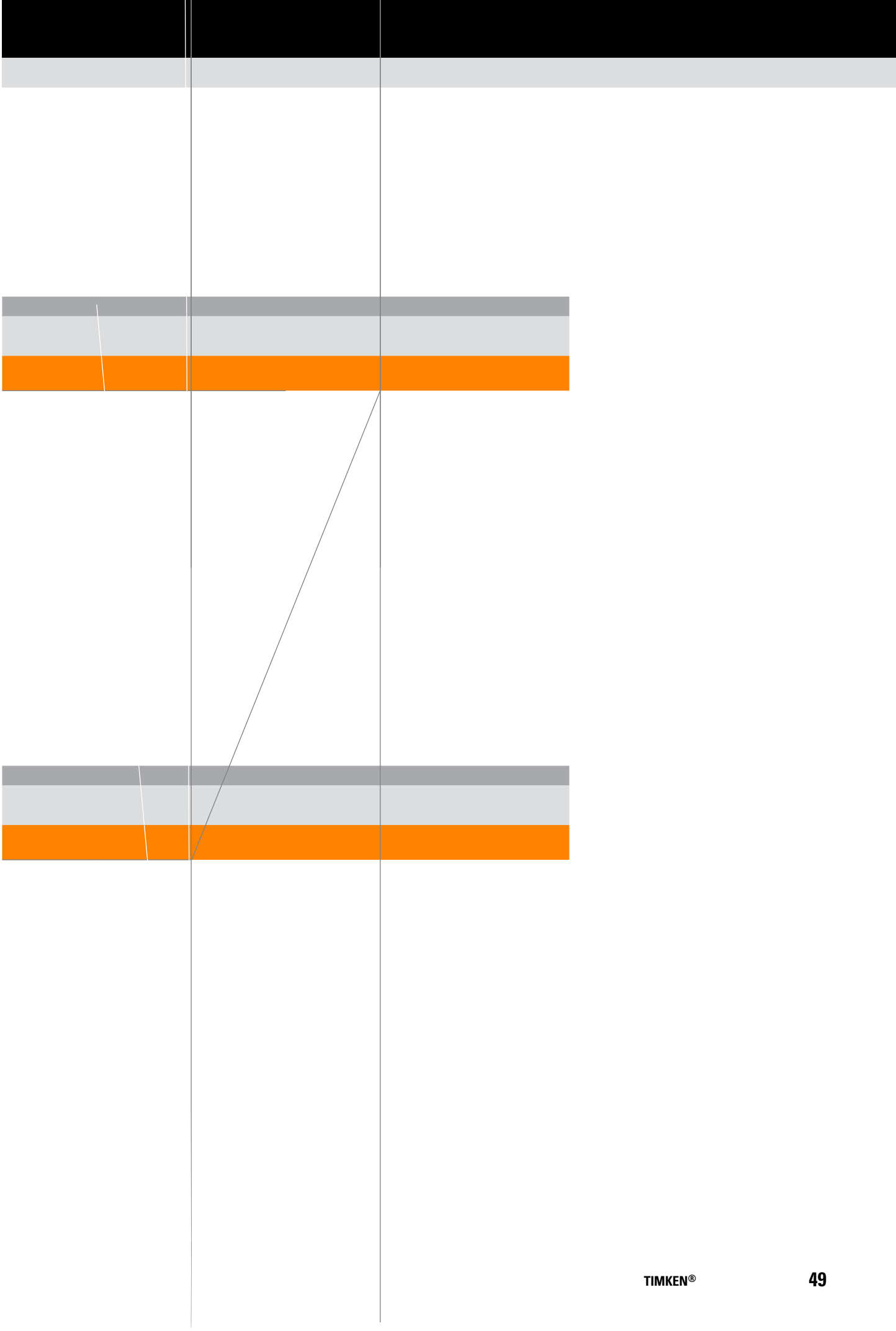


TTDFLK



		S		P	
mm in	mm in	mm in	mm in	mm in	mm in
– –	50,000 1,9685	0,020T 0,0008T	0,007T 0,0003T	0,014T 0,0006T	0,004T 0,0002T
50,000 1,9685	80,000 3,1496	0,025T 0,0010T	0,010T 0,0004T	0,017T 0,0007T	0,004T 0,0002T
80,000 3,1496	120,000 4,7244	0,033T 0,0013T	0,013T 0,0005T	0,017T 0,0007T	0,004T 0,0002T
120,000 4,7244	180,000 7,0866	0,052T 0,0021T	0,027T 0,0011T	0,017T 0,0007T	0,004T 0,0002T
180,000 7,0866	250,000 9,8425	0,060T 0,0024T	0,030T 0,0012T	0,020T 0,0008T	0,004T 0,0002T
250,000 9,8425	315,000 12,4016	0,070T 0,0028T	0,035T 0,0014T	0,022T 0,0009T	0,004T 0,0002T
315,000 12,4016	400,000 15,7480	0,077T 0,0030T	0,037T 0,0015T	0,024T 0,0009T	0,004T 0,0002T
400,000 15,7480	500,000 19,6850	0,085T 0,0034T	0,040T 0,0016T	0,030T 0,0012T	0,004T 0,0002T

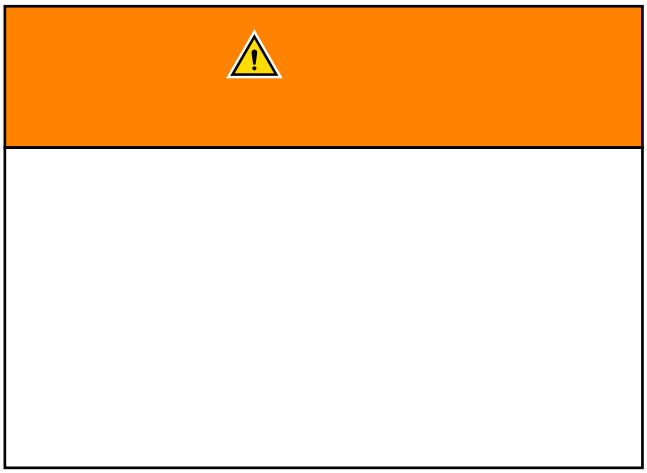
		S		P	
mm in	mm in	mm in	mm in	mm in	mm in
– –	50,000 1,9685	0,020T 0,0008T	0,007T 0,0003T	0,014T 0,0006T	0,004T 0,0002T
50,000 1,9685	80,000 3,1496	0,025T 0,0010T	0,010T 0,0004T	0,017T 0,0007T	0,004T 0,0002T
80,000 3,1496	120,000 4,7244	0,033T 0,0013T	0,013T 0,0005T	0,017T 0,0007T	0,004T 0,0002T
120,000 4,7244	180,000 7,0866	0,052T 0,0021T	0,027T 0,0011T	0,017T 0,0007T	0,004T 0,0002T
180,000 7,0866	250,000 9,8425	0,060T 0,0024T	0,030T 0,0012T	0,020T 0,0008T	0,004T 0,0002T
250,000 9,8425	315,000 12,4016	0,070T 0,0028T	0,035T 0,0014T	0,022T 0,0009T	0,004T 0,0002T
315,000 12,4016	400,000 15,7480	0,077T 0,0030T	0,037T 0,0015T	0,024T 0,0009T	0,004T 0,0002T
400,000 15,7480	500,000 19,6850	0,085T 0,0034T	0,040T 0,0016T	0,030T 0,0012T	0,004T 0,0002T

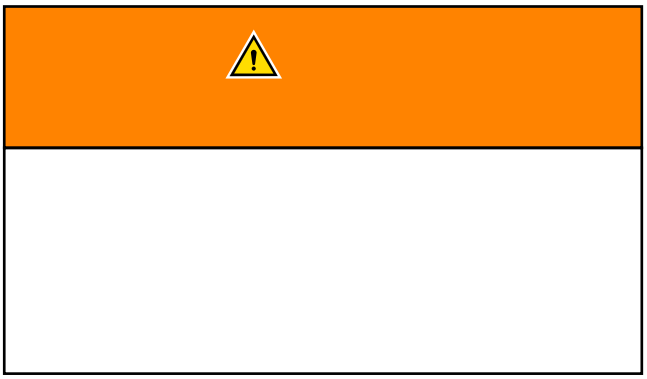


120 ℃(250 ℉)

-55 ℃ (-65 ℉) 65 ℃

(150 ℉) -30 ℃ (-20 ℉)





$$Q_{oil} = 1{,}67 \times 10^{-5} \; v \; C_p \; \rho \; (\theta_i - \theta_i)$$

V = (L/min)
Cp = (J/(kg- ℃)
ρ = (kg/m3)
θ_i =
θ_o =

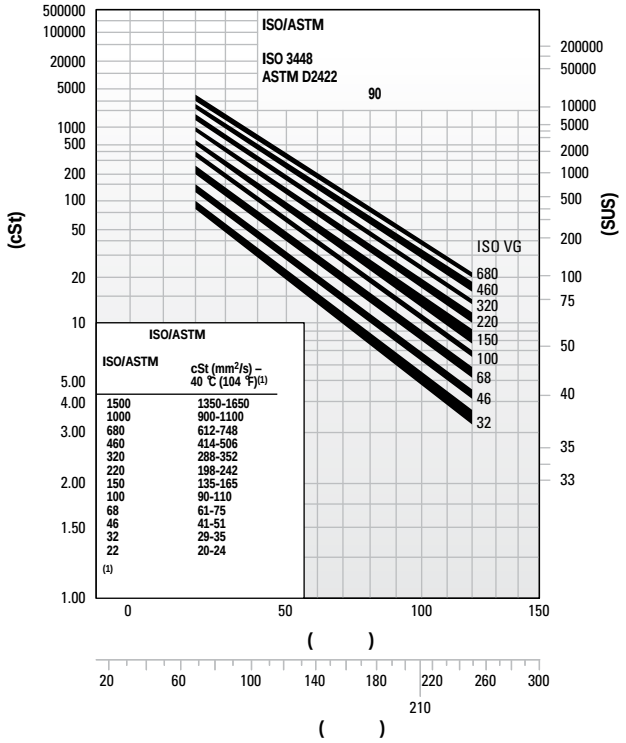

TIMKEN

-
-
- ( )
-

30

ASTM/ISO

ISO



50.

Timken®

31.

	80 ( )
	-10 °C ( )(14 °F)
	ISO/ASTM 32 - 220

/

/

(EP)

Timken®

32.

	(1) –15.8 kg (35 lb.) ( )
	80 ( )
	-10 °C ( )(14 °F)
	ISO/ASTM 100, 150, 220, 320, 460

(1) ASTM D 2782

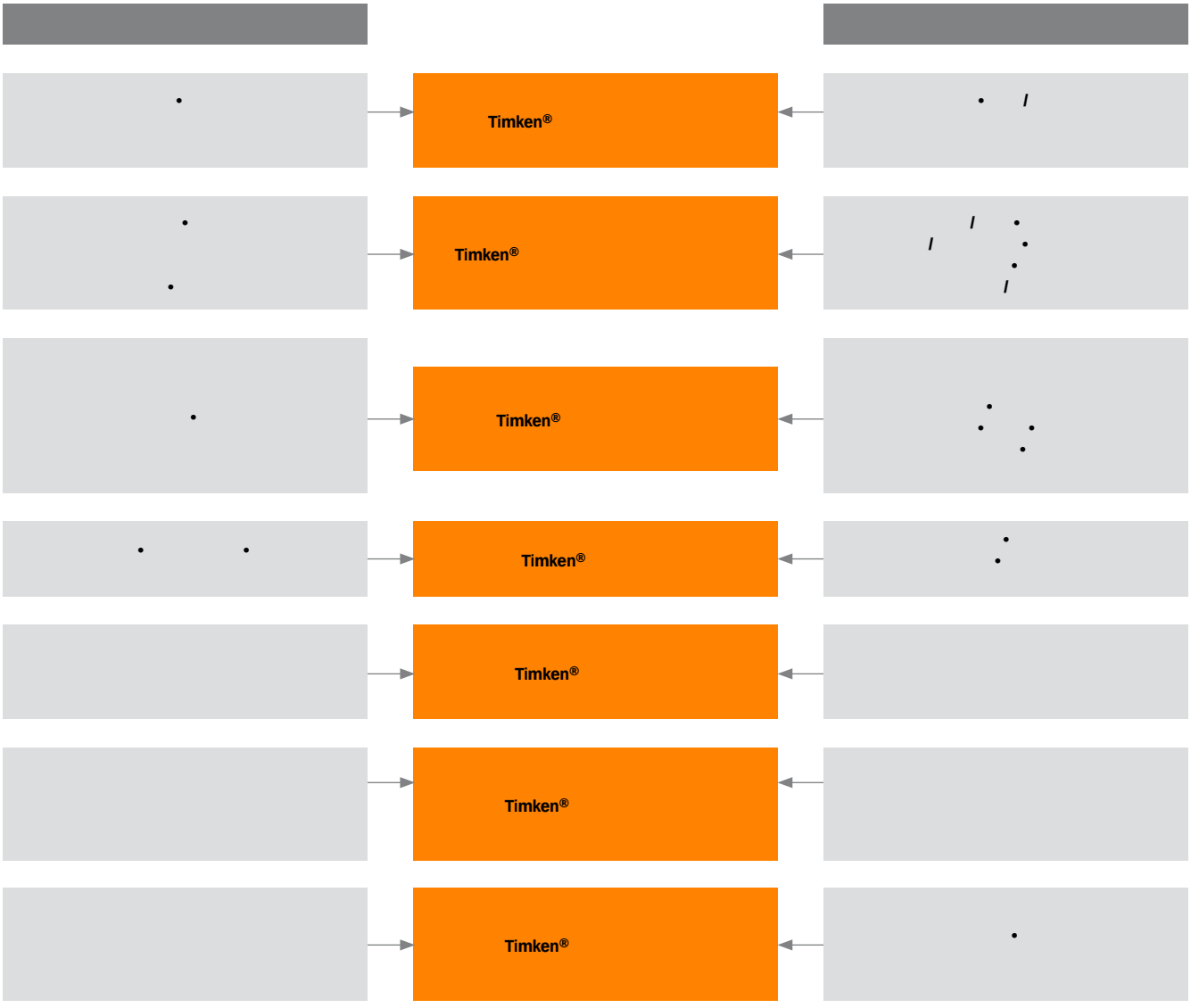
/

/

ę ȯ ŦTIMKEN®

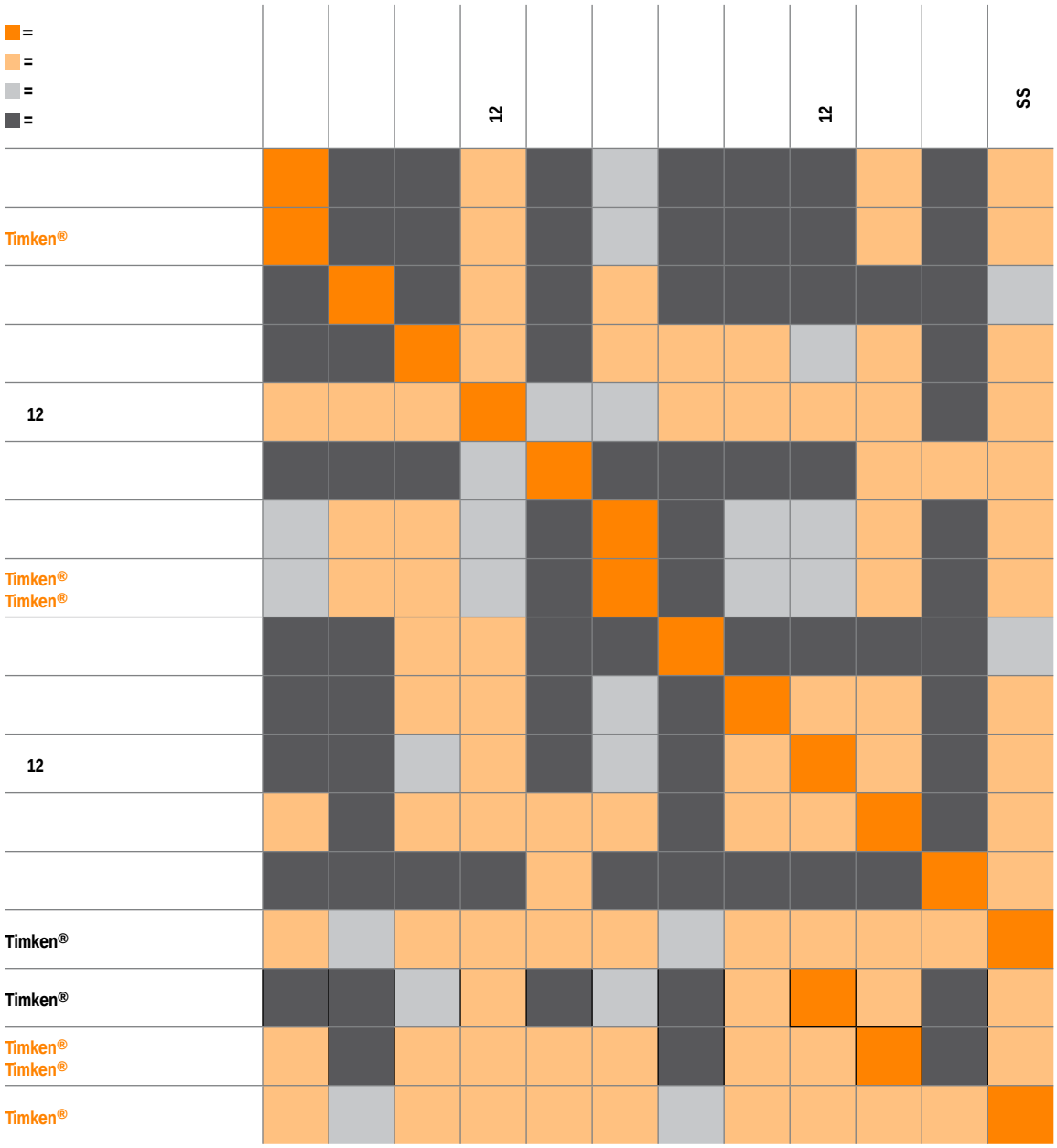
121 ℃ (250 ℉)

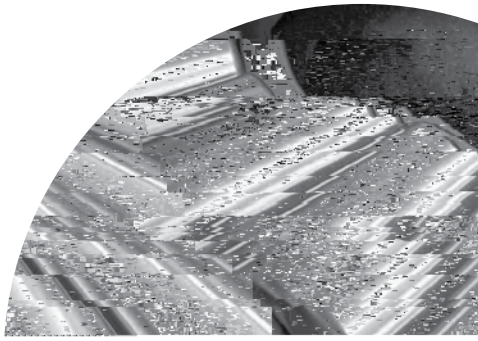
36.



(

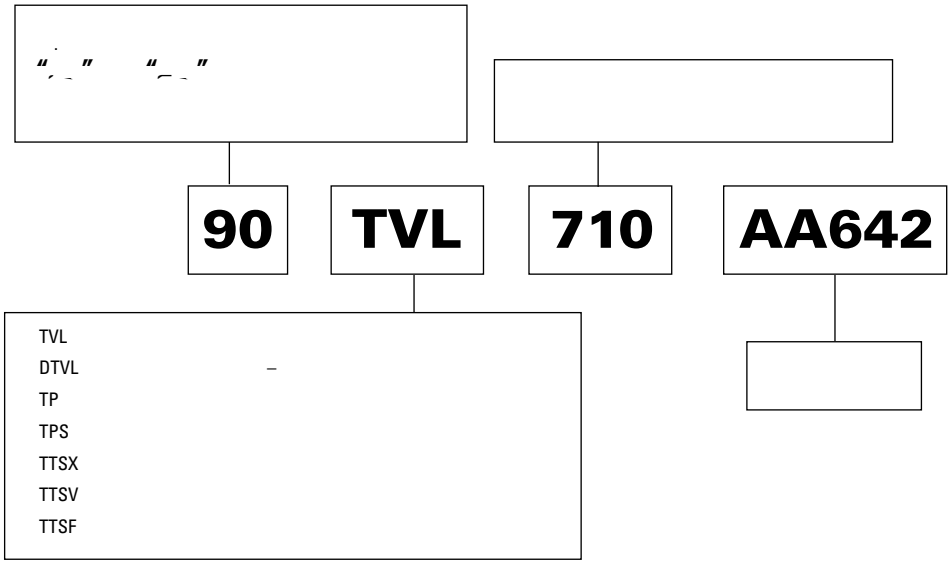
38.


=
=
=
=
12
12
SS
Timken®
12
Timken®
Timken®
12
Timken®
Timken®
Timken®
Timken®

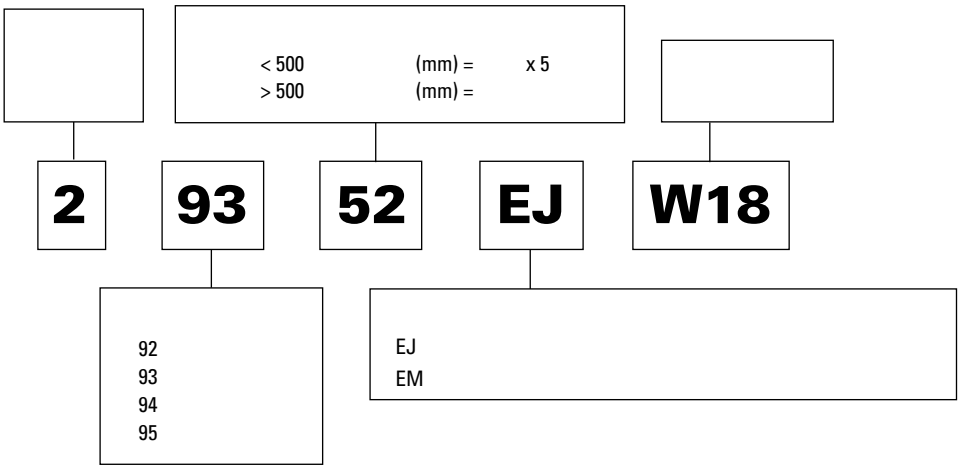




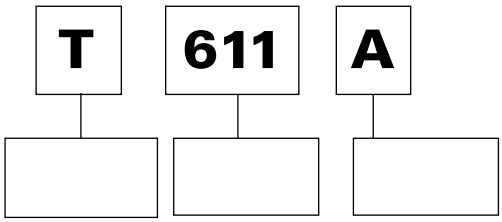
/


90
TVL
710
AA642
TVL
DTVL
TP
TPS
TTSX
TTSV
TTSF

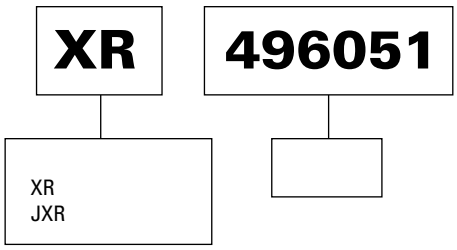
53. /


< 500 (mm) = x 5
> 500 (mm) =
2
93
52
EJ
W18
92
93
94
95
EJ
EM

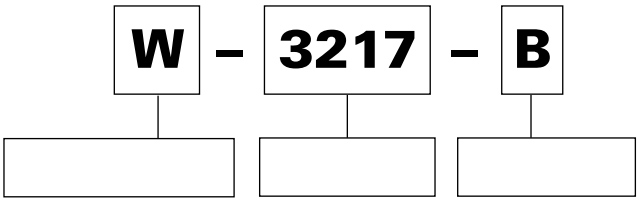
54.



55.

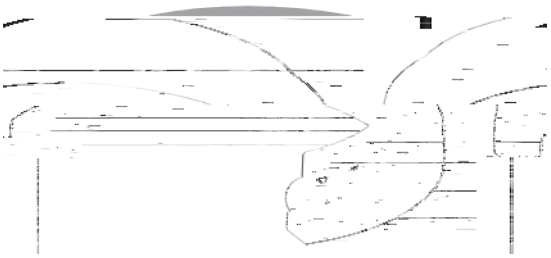


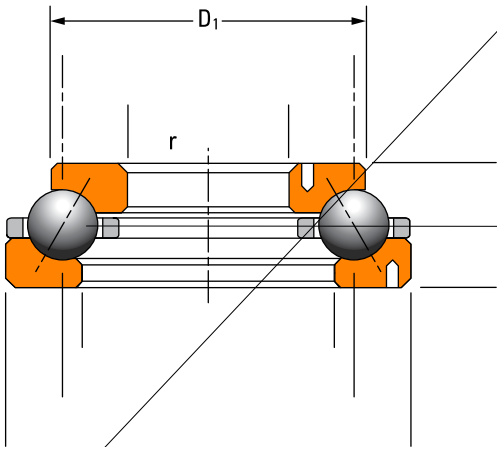
56.



57.

TVL





d –

D –

T –

d_1 –

D_1 –

E –

H –

r – /

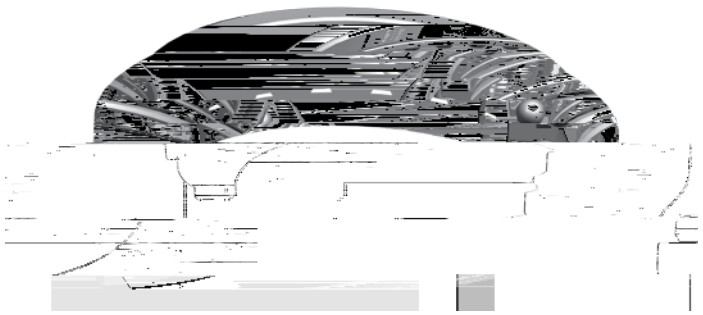
						( )	( )		( )		(1) ( )			
	d	D	T	D_1	d_1	H	E				r	C_{a0}	C_a	
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.	**kg** lbs.
90TVL710	**228,600** 9,0000	**295,275** 11,6250	**38,100** 1,5000	**277,81** 10,938	**246,06** 9,688	**261,9** 10,31	**261,9** 10,31	– –	– –	– –	**3,2** 0,12	**480** 108260	**140** 32070	**6,2** 13,6
120TVL700	**304,800**	**406,400**	**57,150**	**368,30**	**342,90**	**355,6**	**355,6**	**9,5**	**165,1**	**191073**	**9 -67220**			

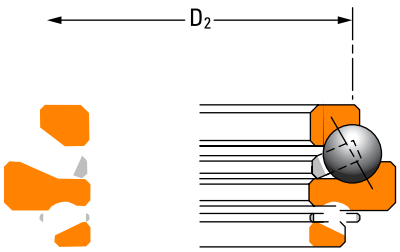


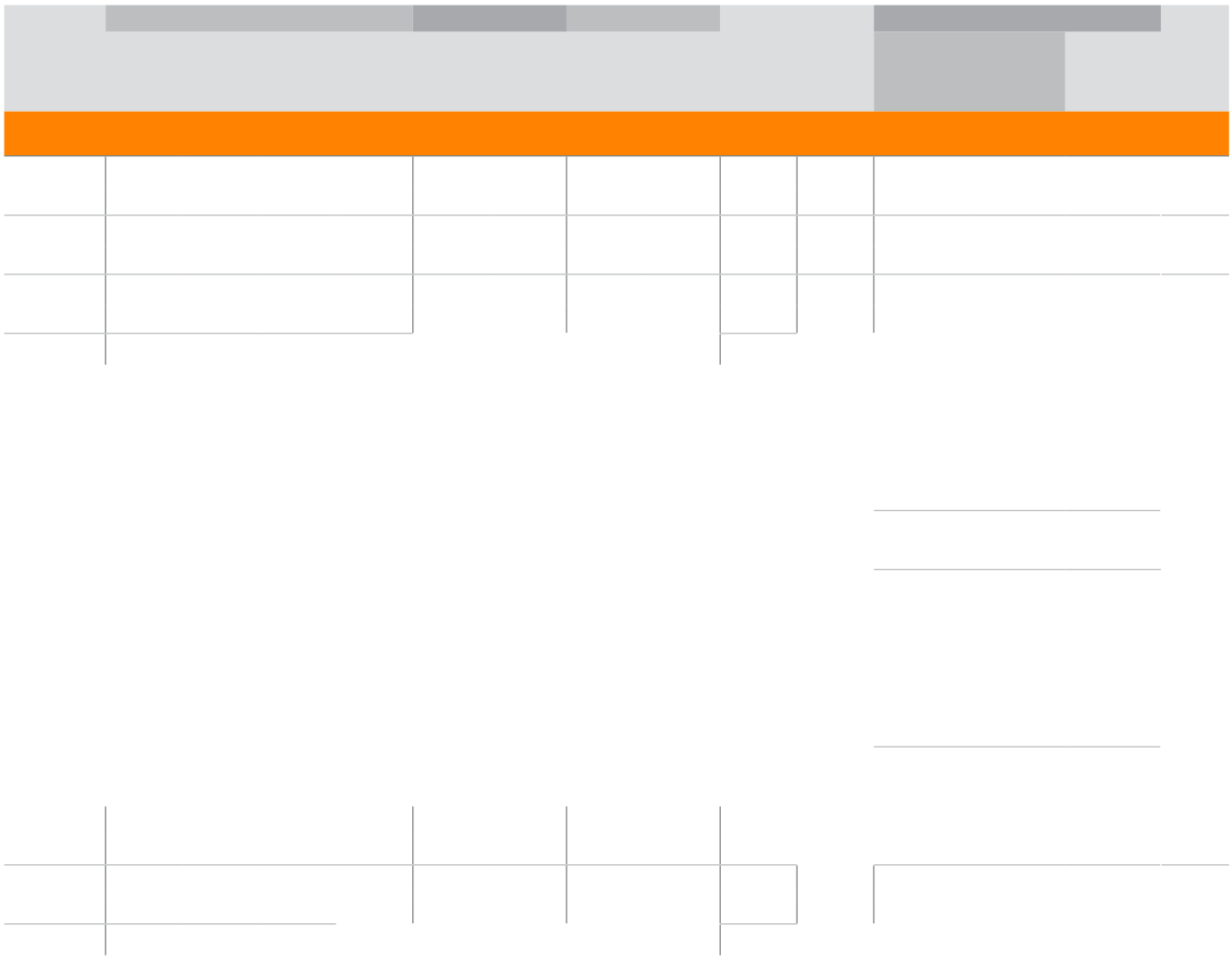
	d	D	T	D_1	d_1	H	E				r	C_{a0}	C_a	
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.	**kg** lbs.
252TVL505	**341,350** 25,2500	**793,750** 31,2500	**88,900** 3,5000	**746,12** 29,375	**708,02** 27,875	**717,6** 28,25	**717,6** 28,25	**12,7** 0,50	**342,9** 13,50	**376,2** 14,81	**6,4** 0,25	**4120** 925070	**710** 159440	**89,3** 197,0
260TVL635	**660,400** 26,0000	**893,350** 35,2500	**133,350** 5,2500	**790,58** 31,125	**727,08** 28,625	**777,9** 30,62	**777,9** 30,62	**20,6** 0,81	**355,6** 14,00	**422,3** 16,62	**6,4** 0,25	**7030** 1580800	**1150** 259090	**226,9** 500,4
302TVL510	**768,350** 30,2500	**920,750** 36,2500	**88,900** 3,5000	**873,12** 34,375	**835,02** 32,875	**844,6** 33,25	**844,6** 33,25	**12,7** 0,50	**408,0** 16,06	**439,7** 17,31	**6,4** 0,25	**4850** 1089700	**750** 168910	**105,2** 231,9
302TVL624	**768,350** 30,2500	**1006,475** 39,6250	**139,700** 5,5000	**901,70** 35,500	**838,20** 33,000	**887,4** 34,94	**887,4** 34,94	**22,2** 0,88	**409,6** 16,12	**476,2** 18,75	**6,4** 0,25	**7870** 1770010	**1190** 267400	**271,1** 597,8
303TVL706	**771,525** 30,3750	**898,525** 35,3750	**63,500** 2,5000	**860,42** 33,875	**809,62** 31,875	**835,0** 32,88	**835,0** 32,88	**12,7** 0,50	**403,2** 15,88	**431,8** 17,00	**6,4** 0,25	**3040** 682650	**460** 102250	**58,0** 128,0
309TVL707	**785,812** 30,9375	**952,500** 37,5000	**95,250** 3,7500	**882,65** 34,750	**857,25** 33,750	**870,0** 34,25	**870,0** 34,25	**15,9** 0,63	**415,9** 16,38	**454,0** 17,88	**6,4** 0,25	**3240** 727460	**570** 127850	**117,9** 260,0
310TVL625	**787,400** 31,0000	**1025,525** 40,3750	**139,700** 5,5000	**917,58** 36,125	**893,76** 35,188	**906,5** 35,69	**906,5** 35,69	**22,2** 0,88	**422,3** 16,62	**485,8** 19,12	**6,4** 0,25	**8140** 1829670	**1210** 271790	**263,5** 581,0
317TVL307	**806,450** 31,7500	**1025,525** 40,3750	**127,000** 5,0000	**933,45** 36,750	**873,12** 34,375	**914,4** 36,00	**914,4** 36,00	**22,2** 0,88	**427,0** 16,81	**476,2** 18,75	**6,4** 0,25	**8140** 1829670	**1210** 271790	**240,6** 530,6
402TVL717	**1022,350** 40,2500	**1181,100** 46,5000	**88,900** 3,5000	**1133,48** 44,625	**1069,98** 42,125	**1101,7** 43,38	**1101,7** 43,38	**19,1** 0,75	**530,2** 20,88	**571,5** 22,50	**6,4** 0,25	**6310** 1418330	**820** 185160	**147,8** 326,0
410TVL718	**1041,400** 41,0000	**1260,475** 49,6250	**127,000** 5,0000	**1189,04** 46,812	**1112,84** 43,812	**1150,9** 45,31	**1150,9** 45,31	**19,1** 0,75	**544,5** 21,44	**606,4** 23,88	**6,4** 0,25	**10590** 2380340	**1340** 301160	**308,8** 681,0
420TVL721	**1066,800** 42,0000	**1285,875** 50,6250	**127,000** 5,0000	**1214,44** 47,812	**1138,24** 44,812	**1176,3** 46,31	**1176,3** 46,31	**22,2** 0,88	**560,4** 22,06	**616,0** 24,25	**6,4** 0,25	**10600** 2383620	**1330** 299290	**315,2** 695,0
530TVL719	**1346,200** 53,0000	**1517,650** 59,7500	**104,775** 4,1250	**1457,32** 57,375	**1406,52** 55,375	**1431,9** 56,38	**1431,9** 56,38	**22,2** 0,88	**695,3** 27,38	**733,4** 28,88	**6,4** 0,25	**7080** 1590850	**810** 183060	**230,0** 506,0
540TVL720	**1371,600** 54,0000	**1619,250** 63,7500	**139,700** 5,5000	**1533,52** 60,375	**1457,32** 57,375	**1495,4** 58,88	**1495,4** 58,88	**22,2** 0,88	**714,4** 28,12	**781,0** 30,75	**6,4** 0,25	**13880** 3119420	**1470** 331050	**480,3** 1059,0

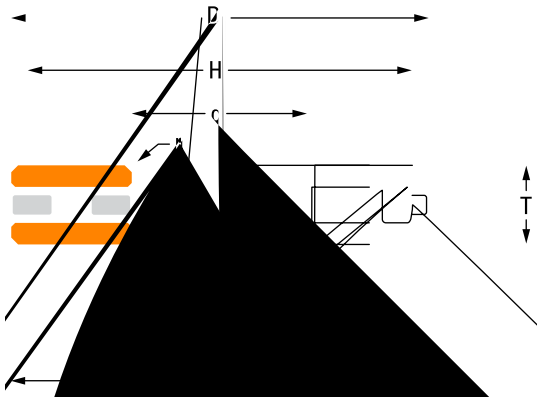
(1)

DTVL



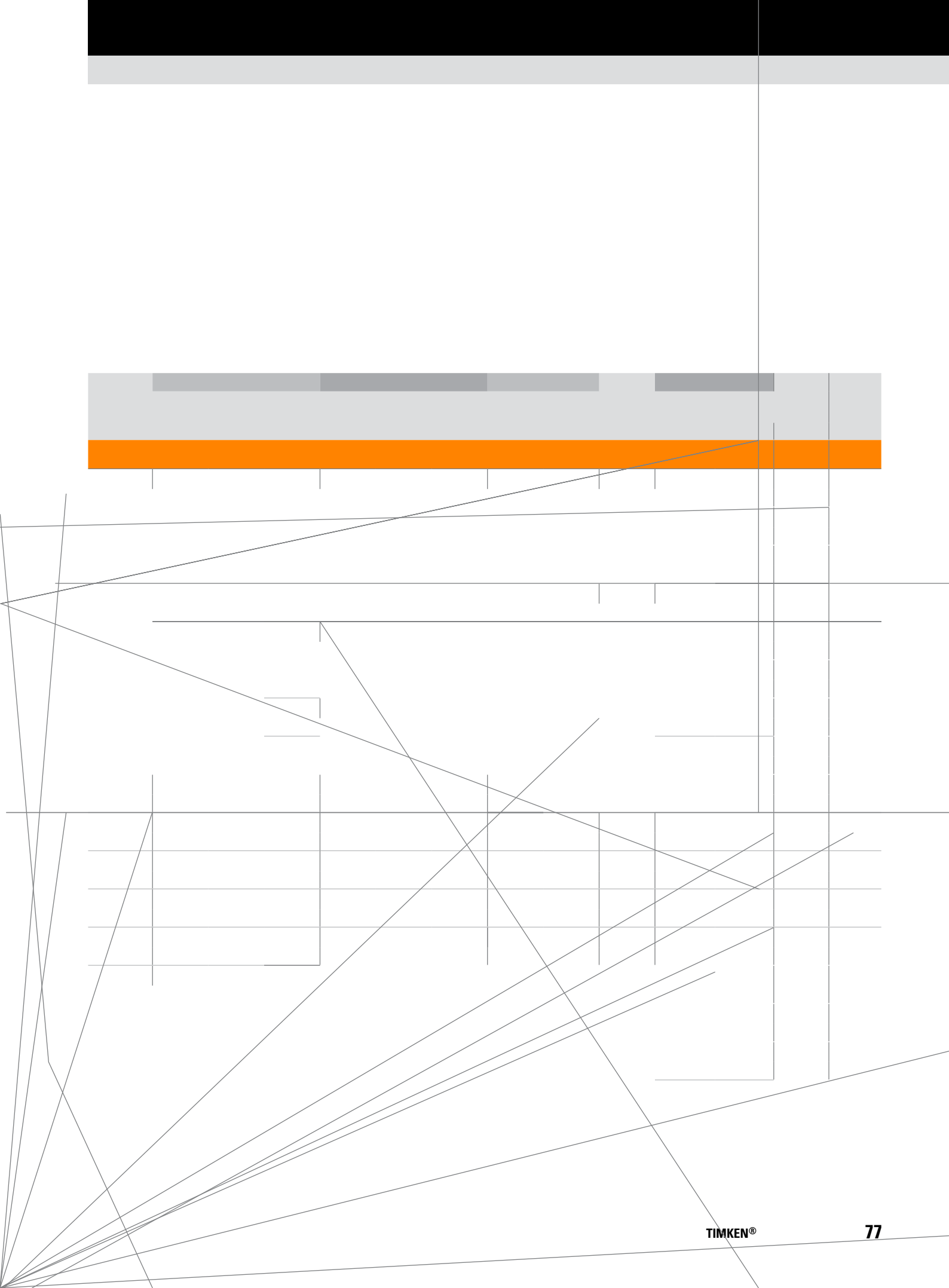




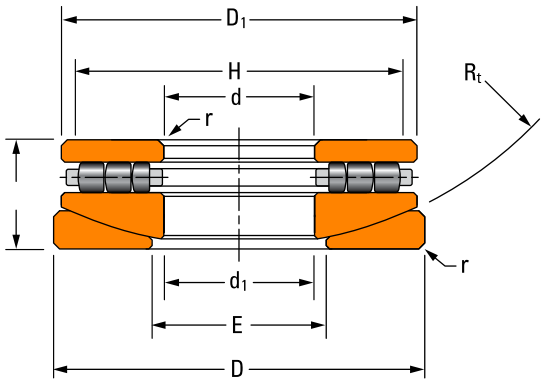


41. TP

	d	D	T	T_1	D_1	d_1	( ) H	(E	(1) ( ) r	C_{a0}	C_a	RPM	
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.		**kg** lbs.
20TP103	**50,800** 2,0000	**152,400** 6,0000	**34,925** 1,3750	**9,52** 0,375	**150,81** 5,938	**52,39** 2,062	**141,3** 5,56	**61,9** 2,44	**1,6** 0,06	**1400** 315400	**400** 84300	1900	**3,7** 8,1
20TP104	**50,800** 2,0000	**177,800** 7,0000	**34,925** 1,3750	**9,52** 0,375	**176,21** 6,938	**52,39** 2,062	**163,5** 6,44	**65,1** 2,56	**1,6** 0,06	**1700** 384200	**400** 95700	1630	**5,1** 11,3
30TP106	**76,200** 3,0000	**152,400** 6,0000	**34,925** 1,3750	**9,52** 0,375	**150,81** 5,938	**77,79** 3,062	**142,9** 5,62	**85,7** 3,38	**1,6** 0,06	**1200** 279500	**300** 74200	1900	**3,2** 7,0
30TP107	**76,200** 3,0000	**177,800** 7,0000	**34,925** 1,3750	**9,52** 0,375	**176,21** 6,938	**77,79** 3,062	**166,7** 6,56	**87,3** 3,44	**1,6** 0,06	**1800** 401500	**400** 96100	1630	**4,6** 10,2
30TP108	**76,200** 3,0000	**203,200** 8,0000	**34,925** 1,3750	**9,52** 0,375	**201,61** 7,938	**77,79** 3,062	**188,9** 7,44	**90,5** 3,56	**1,6** 0,06	**2300** 523800	**500** 115500	1420	**6,3** 13,9
30TP109	**76,200** 3,0000	**228,600** 9,0000	**34,925** 1,3750	**9,52** 0,375	**227,01** 8,938	**77,79** 3,062	**212,7** 8,38	**92,1** 3,62	**1,6** 0,06	**3100** 698300	**600** 141400	1260	**8,2** 18,1
35TP113	**88,900** 3,5000	**132,558** 5,2188	**25,400** 1,0000	**7,14** 0,281	**130,97** 5,156	**90,49** 3,562	**123,8** 4,88	**97,6** 3,84	**1,6** 0,06	**700** 146200	**200** 37000	2190	**1,4** 3,0
40TP114	**101,600** 4,0000	**177,800** 7,0000	**44,450** 1,7500	**12,70** 0,500	**176,21** 6,938	**103,19** 4,062	**168,3** 6,62	**111,1** 4,38	**1,6** 0,06	**1700** 372500	**400** 97200	1630	**5,0** 11,0
40TP115	**101,600** 4,0000	**203,200** 8,0000	**44,450** 1,7500	**12,70** 0,500	**201,61** 7,938	**103,19** 4,062	**190,5** 7,50	**114,3** 4,50	**1,6** 0,06	**2300** 515700	**500** 122800	1420	**7,1** 15,6
40TP116	**101,600** 4,0000	**228,600** 9,0000	**44,450** 1,7500	**12,70** 0,500	**227,01** 8,938	**103,19** 4,062	**214,3** 8,44	**115,9** 4,56	**1,6** 0,06	**3000** 683500	**700** 150200	1260	**9,5** 21,0
40TP117	**101,600** 4,0000	**254,000** 10,0000	**44,450** 1,7500	**12,70** 0,500	**252,41** 9,938	**103,19** 4,062	**238,1** 9,38	**117,5** 4,62	**1,6** 0,06	**3700** 827600	**800** 171400	1140	**11,6** 25,6
50TP119	**127,000** 5,0000	**203,200** 8,0000	**44,450** 1,7500	**12,70** 0,500	**201,61** 7,938	**128,59** 5,062	**190,5** 7,50	**139,7** 5,50	**1,6** 0,06	**2100** 465800	**500** 110700	1420	**5,9** 13,1
50TP120	**127,000** 5,0000	**228,600** 9,0000	**44,450** 1,7500	**12,70** 0,500	**227,01** 8,938	**128,59** 5,062	**215,9** 8,50	**139,7** 5,50	**1,6** 0,06	**2900** 645200	**600** 140400	1260	**8,3** 18,4
50TP121	**127,000** 5,0000	**254,000** 10,0000	**50,800** 2,0000	**14,29** 0,562	**252,41** 9,938	**128,59** 5,062	**239,7** 9,44	**141,3** 5,56	**3,2** 0,12	**3700** 835900	**800** 184000	1140	**12,4** 27,4
50TP122	**127,000** 5,0000	**279,400** 11,0000	**50,800** 2,0000	**14,29** 0,562	**277,81** 10,938	**128,59** 5,062	**261,9** 10,31	**144,5** 5,69	**3,2** 0,12	**4800** 1073500	**1000** 220000	1030	**15,8** 34,8
50TP123	**127,000** 5,0000	**304,800** 12,0000	**50,800** 2,0000	**14,29** 0,562	**303,21** 11,938	**128,59** 5,062	**288,9** 11,38	**146,0** 5,75	**3,2** 0,12	**5600** 1248900	**1100** 244200	950	**19,4** 42,8






D1
H
d
r
Rt
r
d1
E
D

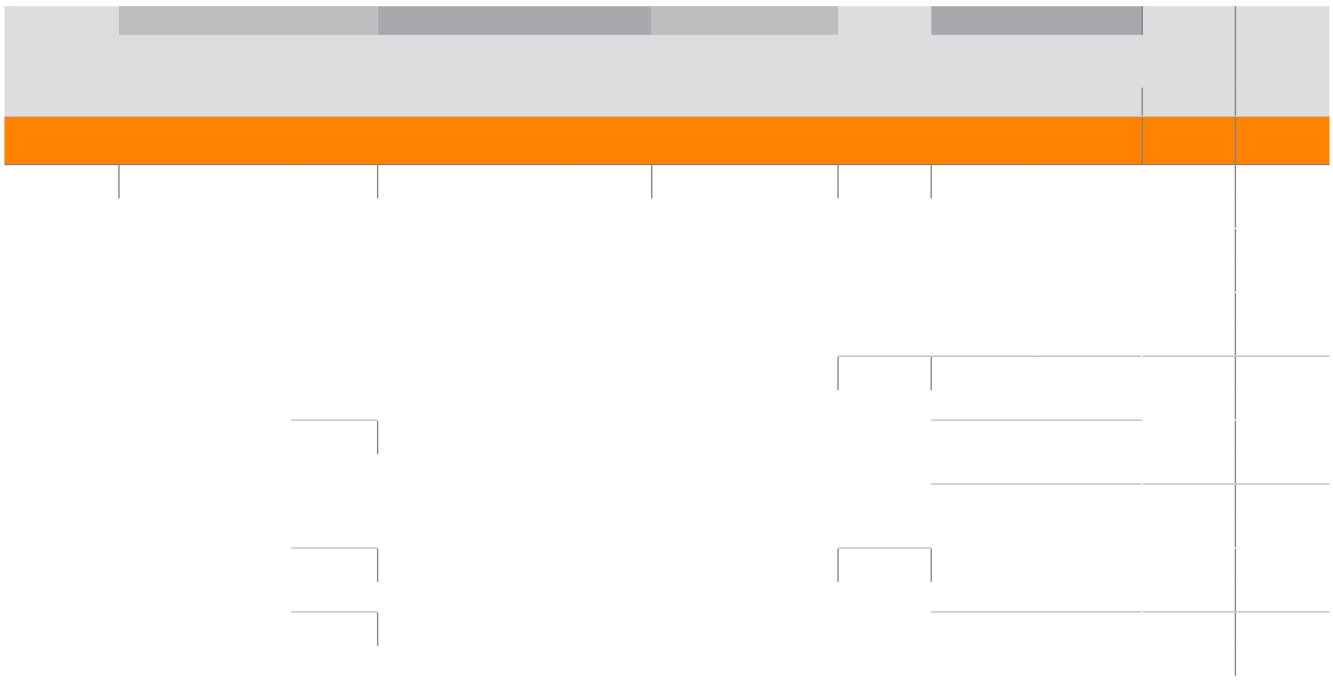


42. – TPS

	d	D	T	R_t	D_1	d_1	( ) H	( ) E	(1) ( ) r	C_{a0}	C_a		
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.	RPM	**kg** lbs.
20TPS103	**50,800** 2,0000	**160,325** 6,3120	**46,038** 1,8125	**190,50** 7,500	**150,81** 5,938	**52,39** 2,062	**141,3** 5,56	**85,7** 3,38	**1,6** 0,06	**1400** 315400	**400** 83600	1900	**5,2** 11,4
20TPS104	**50,800** 2,0000	**185,725** 7,3120	**46,038** 1,8125	**241,30** 9,500	**176,21** 6,938	**52,39** 2,062	**163,5** 6,44	**108,0** 4,25	**1,6** 0,06	**1700** 384200	**400** 95000	1630	**7,1** 15,7
30TPS106	**76,200** 3,0000	**160,325** 6,3120	**46,038** 1,8125	**152,40** 6,000	**150,81** 5,938	**77,79** 3,062	**142,9** 5,62	**101,6** 4,00	**1,6** 0,06	**1200** 279500	**300** 73700	1900	**4,5** 9,9
30TPS107	**76,200** 3,0000	**185,725** 7,3120	**46,038** 1,8125	**241,30** 9,500	**176,21** 6,938	**77,79** 3,062	**166,7** 6,56	**111,1** 4,38	**1,6** 0,06	**1800** 401500	**400** 95500	1630	**6,4** 14,2
30TPS108	**76,200** 3,0000	**211,125** 8,3120	**46,038** 1,8125	**304,80** 12,000	**201,61** 7,938	**77,79** 3,062	**188,9** 7,44	**133,4** 5,25	**1,6** 0,06	**2300** 523800	**500** 114800	1420	**8,7** 19,2
35TPS113	**88,900** 3,5000	**138,908** 5,4688	**33,338** 1,3125	**127,00** 5,000	**130,97** 5,156	**91,28** 3,594	**123,8** 4,88	**103,2** 4,06	**1,6** 0,06	**700** 146400	**200** 36800	2190	**1,9** 4,1
40TPS114	**101,600** 4,0000	**187,327** 7,3750	**58,738** 2,3125	**161,93** 6,375	**176,21** 6,938	**103,93** 4,094	**168,3** 6,62	**127,0** 5,00	**1,6** 0,06	**1700** 372500	**400** 96500	1630	**7,0** 15,4
40TPS115	**101,600** 4,0000	**212,725** 8,3750	**58,738** 2,3125	**215,90** 8,500	**201,61** 7,938	**103,98** 4,094	**190,5** 7,50	**133,4** 5,25	**1,6** 0,06	**2300** 515700	**500** 122000	1420	**10,0** 22,1
40TPS116	**101,600** 4,0000	**238,125** 9,3750	**58,738** 2,3125	**254,00** 10,000	**227,01** 8,938	**103,98** 4,094	**214,3** 8,44	**149,2** 5,88	**1,6** 0,06	**3000** 683500	**700** 149200	1260	**13,4** 29,5
40TPS117	**101,600** 4,0000	**266,700** 10,5000	**58,738** 2,3125	**355,60** 14,000	**252,41** 9,938	**103,98** 4,094	**238,1** 9,38	**165,1** 6,50	**1,6** 0,06	**3700** 827600	**800** 171400	1140	**17,1** 37,7
50TPS119	**127,000** 5,0000	**215,900** 8,5000	**58,738** 2,3125	**187,33** 7,375	**201,61** 7,938	**130,18** 5,125	**190,5** 7,50	**152,4** 6,00	**1,6** 0,06	**2100** 465800	**500** 109800	1420	**8,4** 18,5
50TPS120	**127,000** 5,0000	**241,300** 9,5000	**58,738** 2,3125	**266,70** 10,500	**227,01** 8,938	**130,18** 5,125	**215,9** 8,50	**155,6** 6,12	**1,6** 0,06	**2900** 645200	**600** 139300	1260	**11,8** 26,1
50TPS121	**127,000** 5,0000	**266,700** 10,5000	**66,675** 2,6250	**323,85** 12,750	**252,41** 9,938	**130,18** 5,125	**239,7** 9,44	**158,8** 6,25	**3,2** 0,12	**3700** 835900	**800** 182600	1140	**17,6** 38,7
50TPS122	**127,000** 5,0000	**292,100** 11,5000	**66,675** 2,6250	**406,40** 16,000	**277,81** 10,938	**130,18** 5,125	**261,9** 10,31	**177,8** 7,00	**3,2** 0,12	**4800** 1073500	**1000** 218400	1030	**22,1** 48,8
50TPS123	**127,000** 5,0000	**317,500** 12,5000	**66,675** 2,6250	**501,65** 19,750	**303,21** 11,938	**130,18** 5,125	**288,9** 11,38	**184,1** 7,25	**3,2** 0,12	**5600** 1248900	**1100** 242600	950	**27,2** 60,0
60TPS124	**152,400** 6,0000	**241,300** 9,5000	**66,675** 2,6250	**171,45** 6,750	**227,01** 8,938	**155,58** 6,125	**217,5** 8,56	**184,1** 7,25	**3,2** 0,12	**2400** 543800	**600** 130200	1260	**10,8** 23,8

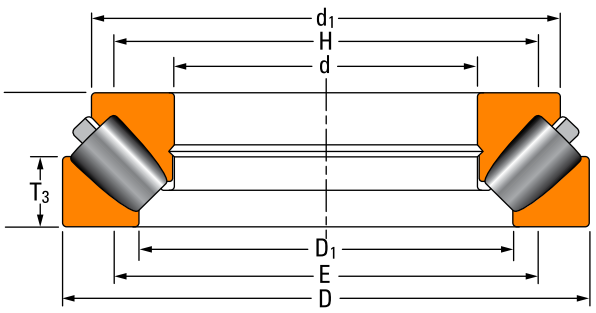


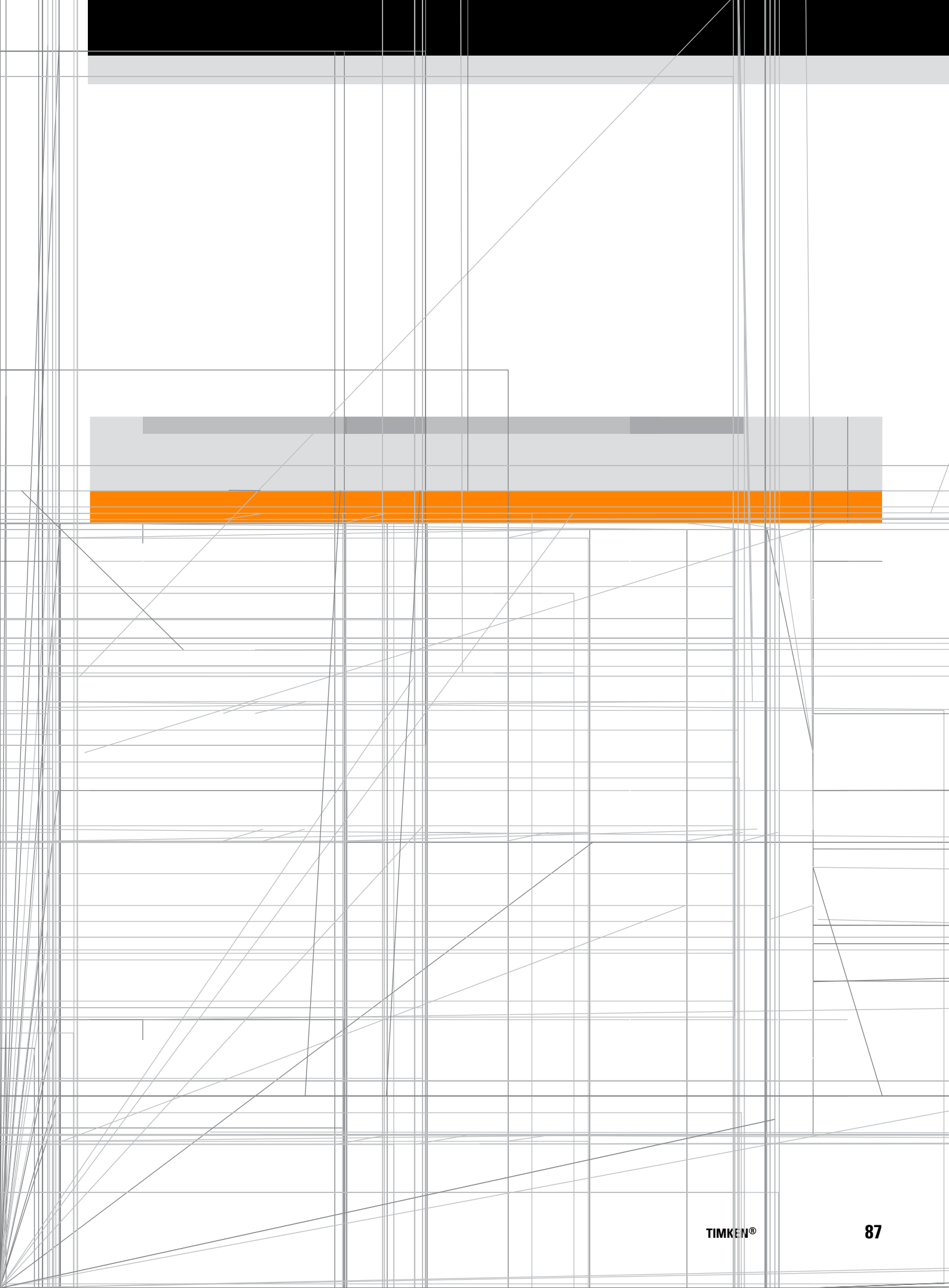


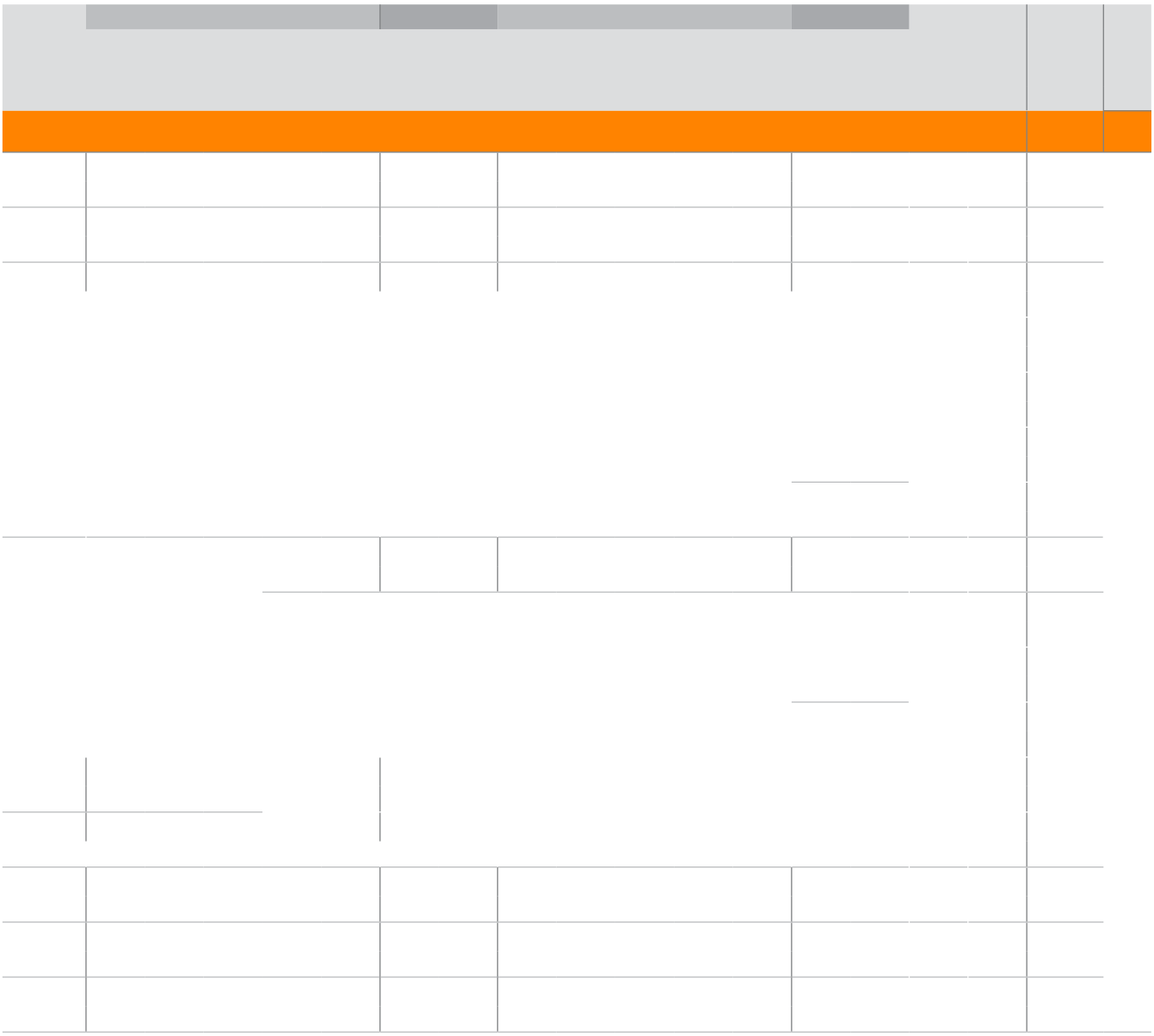


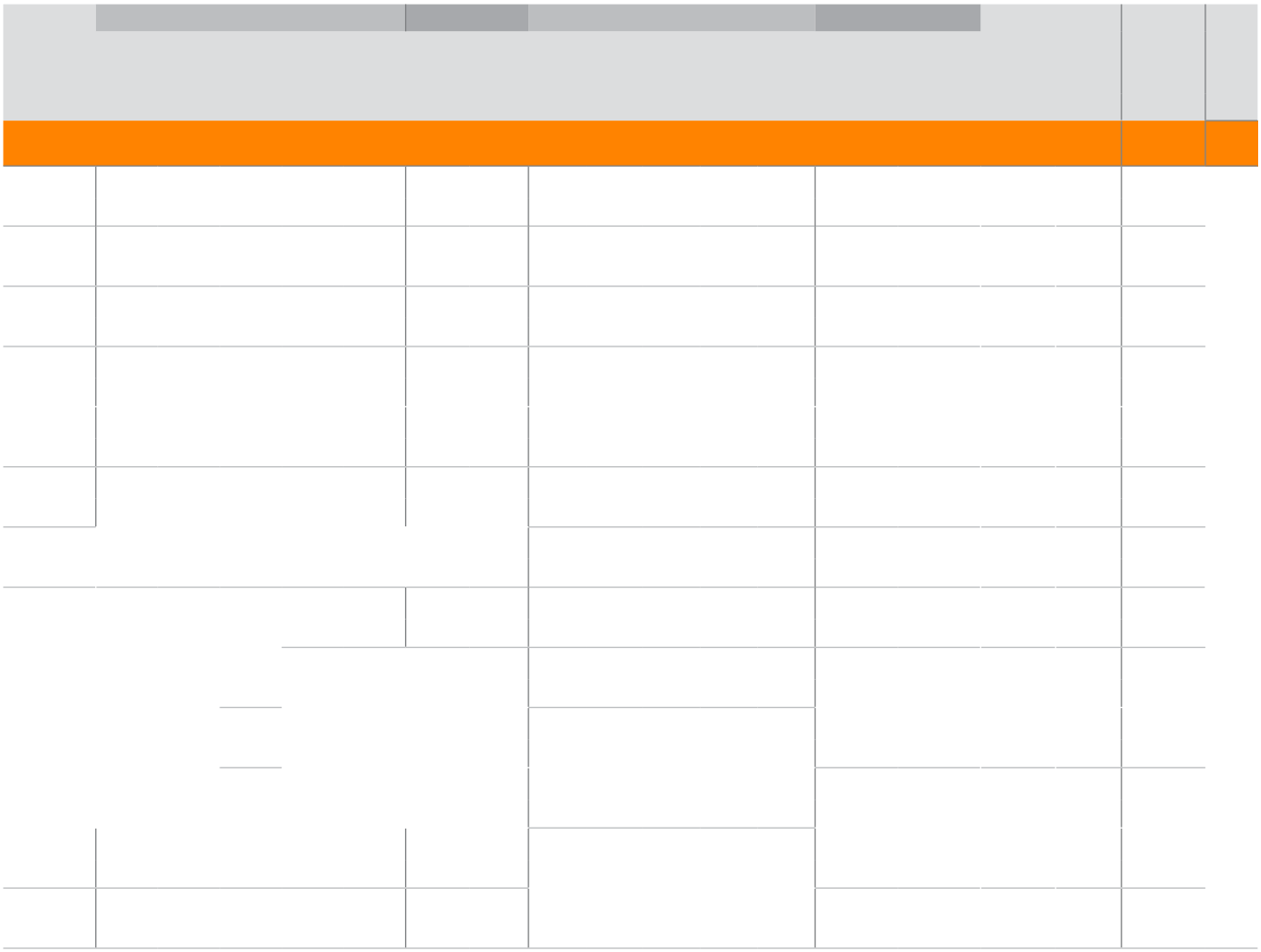
TSR-EJ

TSR-EM





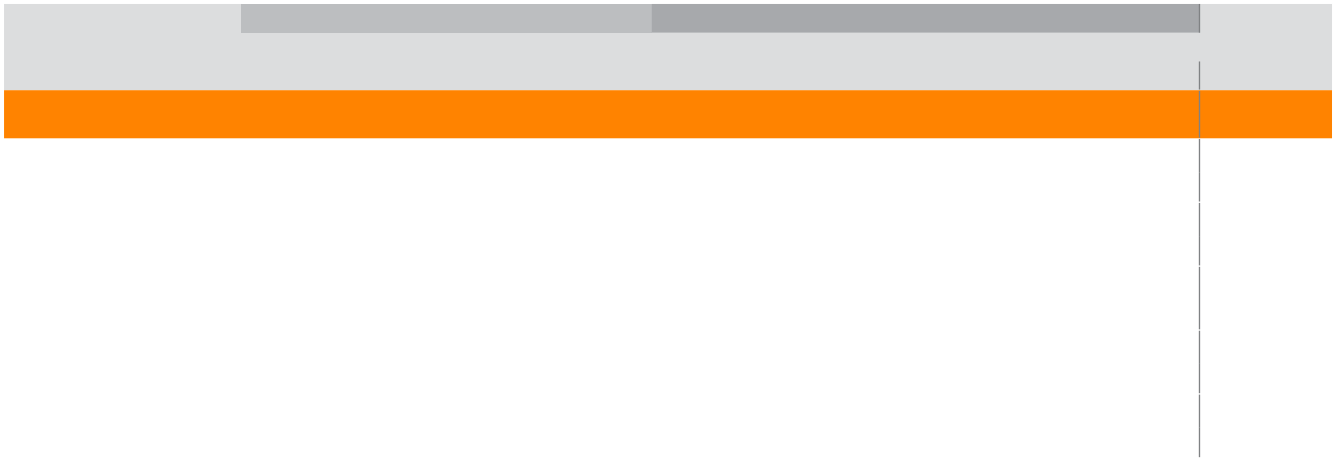




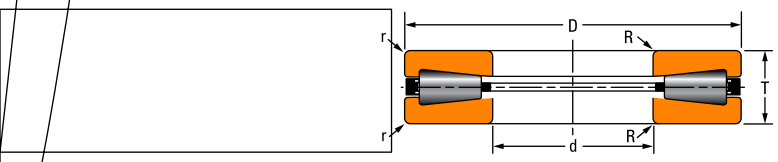
TTHD



■

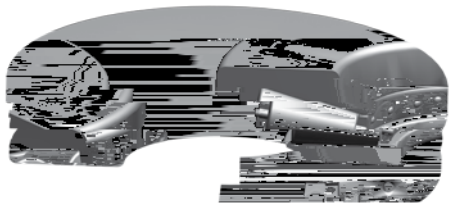




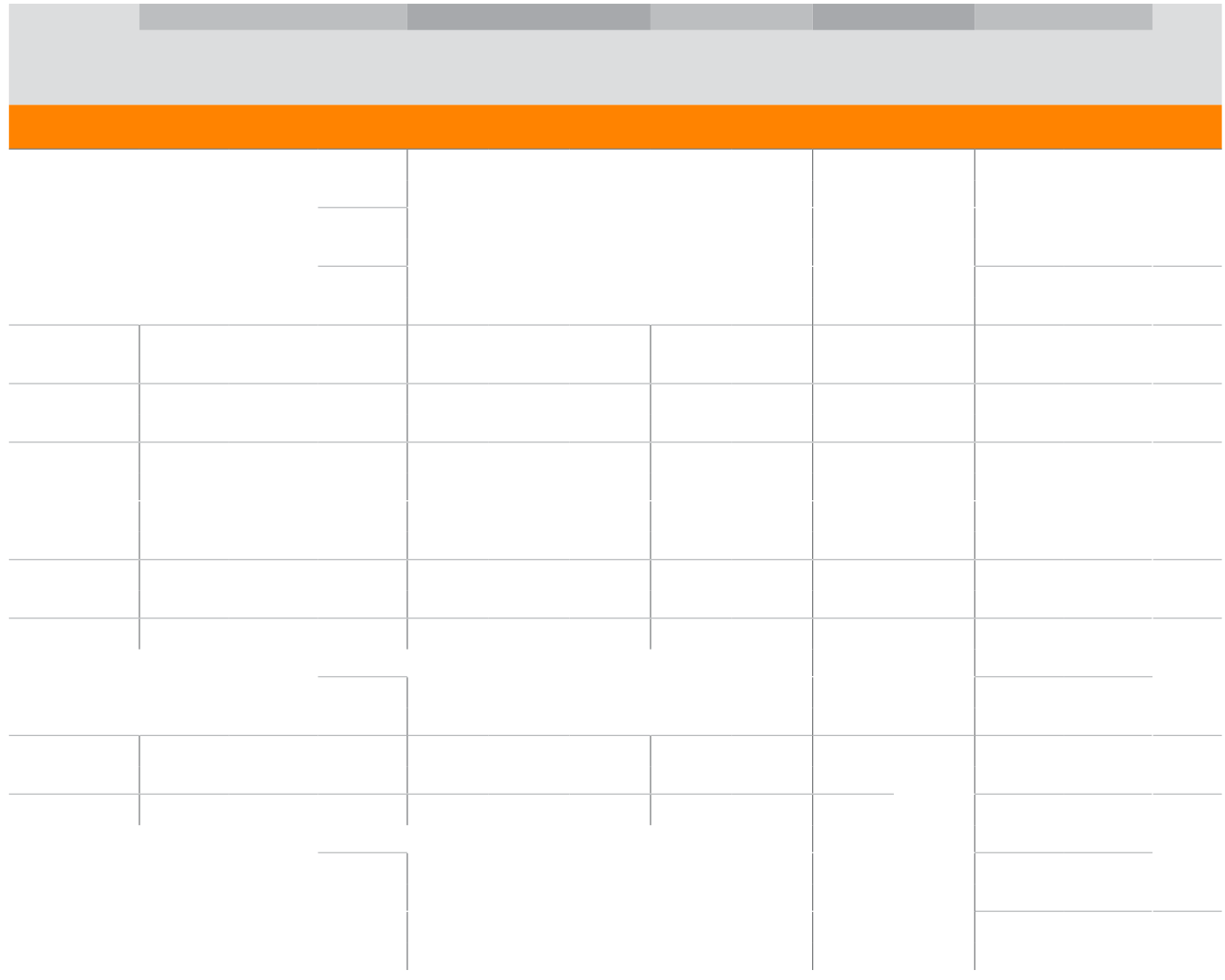


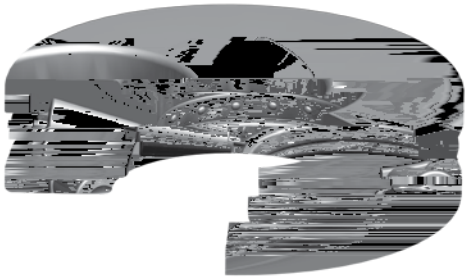
					(1)				
					( )	( )			
		d	D	T	R	r	C_{a0}	C_a	
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.	**kg** lbs.
B-8948-G	4	**406,400** 16,0000	**914,400** 36,0000	**190,500** 7,5000	**5,0** 0,20	**5,0** 0,20	**81000** 18200000	**5430** 1220000	**721,0** 1590,0
T20020	4	**508,000** 20,0000	**990,600** 39,0000	**196,850** 7,7500	**1,5** 0,06	**1,5** 0,06	**66700** 15000000	**4530** 1020000	**735,0** 1620,0
XC2102	3	**1003,070** 39,4910	**1117,600** 44,0000	**50,800** 2,0000	**3,3** 0,13	**3,3** 0,13	**14900** 3350000	**530** 119000	**64,2** 141,4
XC2101	3	**1162,050** 45,7500	**1282,700** 50,5000	**52,388** 2,0625	**3,3** 0,13	**3,3** 0,13	**19000** 4280000	**620** 139000	**79,9** 176,2
T48000	4	**1219,200** 48,0000	**1524,000** 60,0000	**136,525** 5,3750	**1,5** 0,06	**9,7** 0,38	**74800** 16800000	**3450** 775000	**596,0** 1314,0

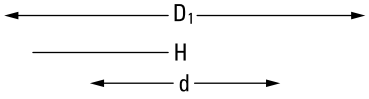
TTHDFL



			(1)			
			( ) ( )	) ( )		

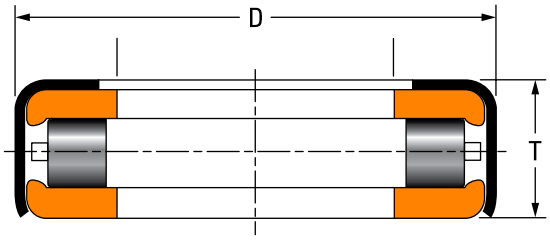





D1
H
d

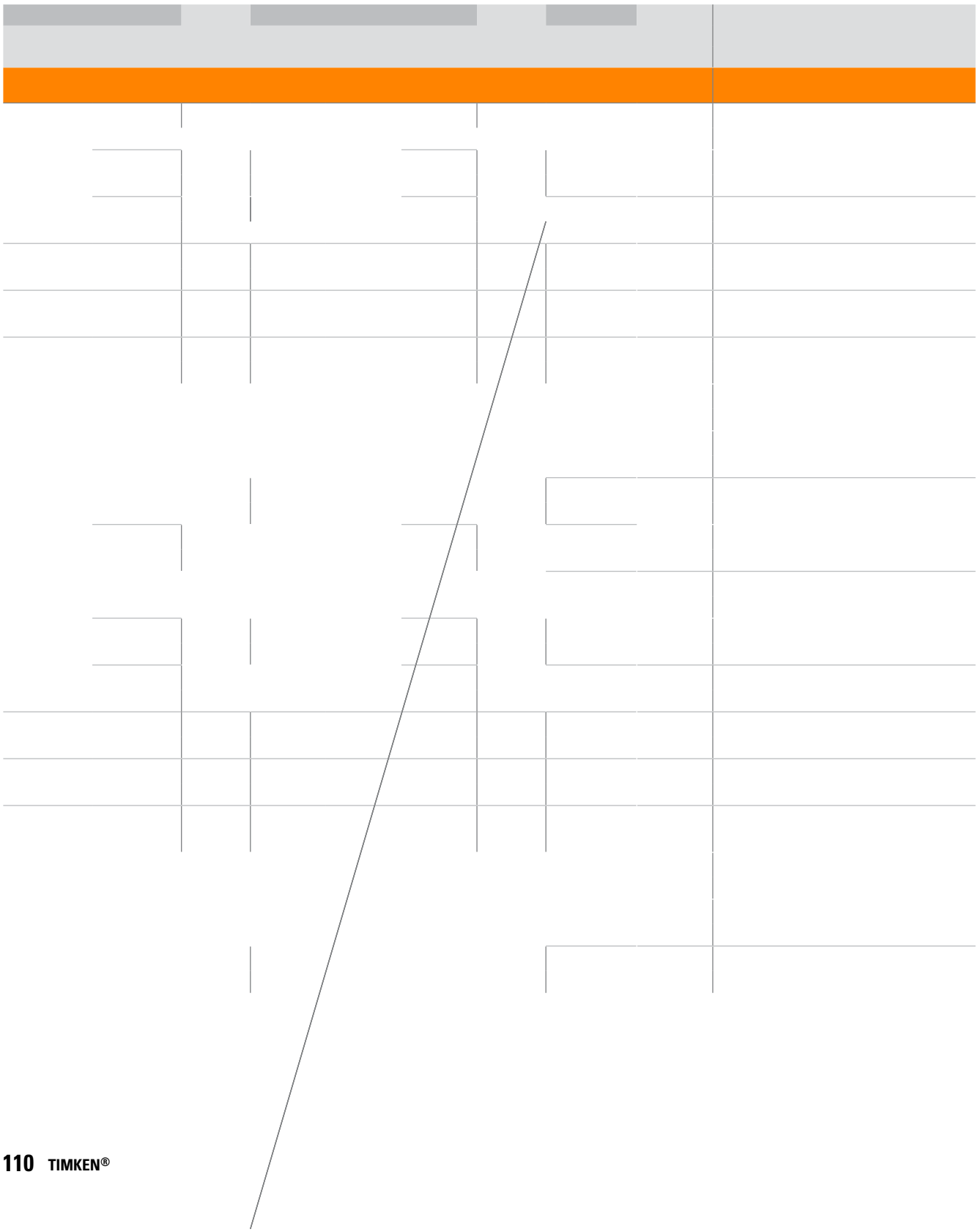
	d	D	T	T_1	D_1	d_1	(1) ( ) r	( ) H	( ) E	C_{a0}	C_a	
	mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**kN** lbf.	**kg** lbs.
A–5934–B	**101,600** 4,0000	**203,200** 8,0000	**47,625** 1,8750	**15,37** 0,605	**203,20** 8,000	**101,60** 4,000	**1,5** 0,06	**182,6** 7,19	**119,1** 4,69	**2300** 517000	**200** 44200	(2)
C–7862–C	**127,000** 5,0000	**266,700** 10,5000	**71,425** 2,8120	**25,40** 1,000	**266,70** 10,500	**128,59** 5,063	**3,6** 0,14	**238,2** 9,38	**149,4** 5,88	**4920** 1110000	**400** 91200	**27,0** 59,0
B–7976–C	**184,150** 7,2500	**406,400** 16,0000	**203,200** 8,0000	**66,68** 2,625	**404,81** 15,938	**187,32** 7,375	**6,1** 0,24	**346,1** 13,62	**228,6** 9,00	**15000** 3380000	**1370** 308000	**157,4** 347,0
B–8824–C	**199,374** 7,8730	**399,948** 15,7460	**121,841** 4,7969	**36,40** 1,433	**396,88** 15,625	**203,20** 8,000	**4,1** 0,16	**358,8** 14,12	**240,5** 9,47	**13000** 2920000	**1060** 237000	**82,7** 182,4
S–3806–B	**199,975** 7,8730	**399,975** 15,7470	**121,881** 4,7985	**36,40** 1,433	**399,98** 15,747	**203,20** 8,000	**4** 0,16	**360,7** 14,20	**240,5** 9,47	**13000** 2920000	**1060** 237000	(2)
E–2004–C	**228,600** 9,0000	**482,549** 18,9980	**158,750** 6,2500	**44,91** 1,768	**479,55** 18,880	**231,78** 9,125	**4,8** 0,19	**419,1** 16,50	**282,6** 11,12	**20000** 4500000	**1670** 375000	**170,1** 375,0
H–2212–A	**228,600** 9,0000	**482,600** 19,0000	**158,750** 6,2500	**44,91** 1,768	**479,55** 18,880	**257,18** 10,125	**6,4** 0,25	**431,8** 17,00	**282,6** 11,13	**20000** 4500000	**1670** 375000	**142,2** 313,5
H–1685–C	**241,300** 9,5000	**488,899** 19,2480	**152,400** 6,0000	**57,15** 2,250	**482,60** 19,000	**242,09** 9,531	**6,1** 0,24	**431,8** 17,00	**279,4** 11,00	**18900** 4240000	**1460** 329000	**155,9** 343,7
P–1739–C	**304,800** 12,0000	**609,600** 24,0000	**215,900** 8,5000	**61,90** 2,437	**608,01** 23,938	**307,98** 12,125	**9,7** 0,38	**536,6** 21,12	**349,2** 13,75	**31100** 6990000	**2610** 586000	**305,6** 673,8
B–8750–G	**355,600** 14,0000	**660,400** 26,0000	**254,000** 10,0000	**76,20** 3,000	**657,23** 25,875	**358,78** 14,125	**10,2** 0,4	**577,9** 22,75	**412,8** 163878-3420.0477090000	**34200**	**2900**	(2)
	B–4824–C	**406,400** 9,5000	**241,300** 099	**16,2** 8925,0	**20337** 0625		863878-1985.03164500000					
		B–0734–C		**7,91** 26250	**11,** 40,5	**9,7** 22,19						

TTSP



TTSPS

TTSPL

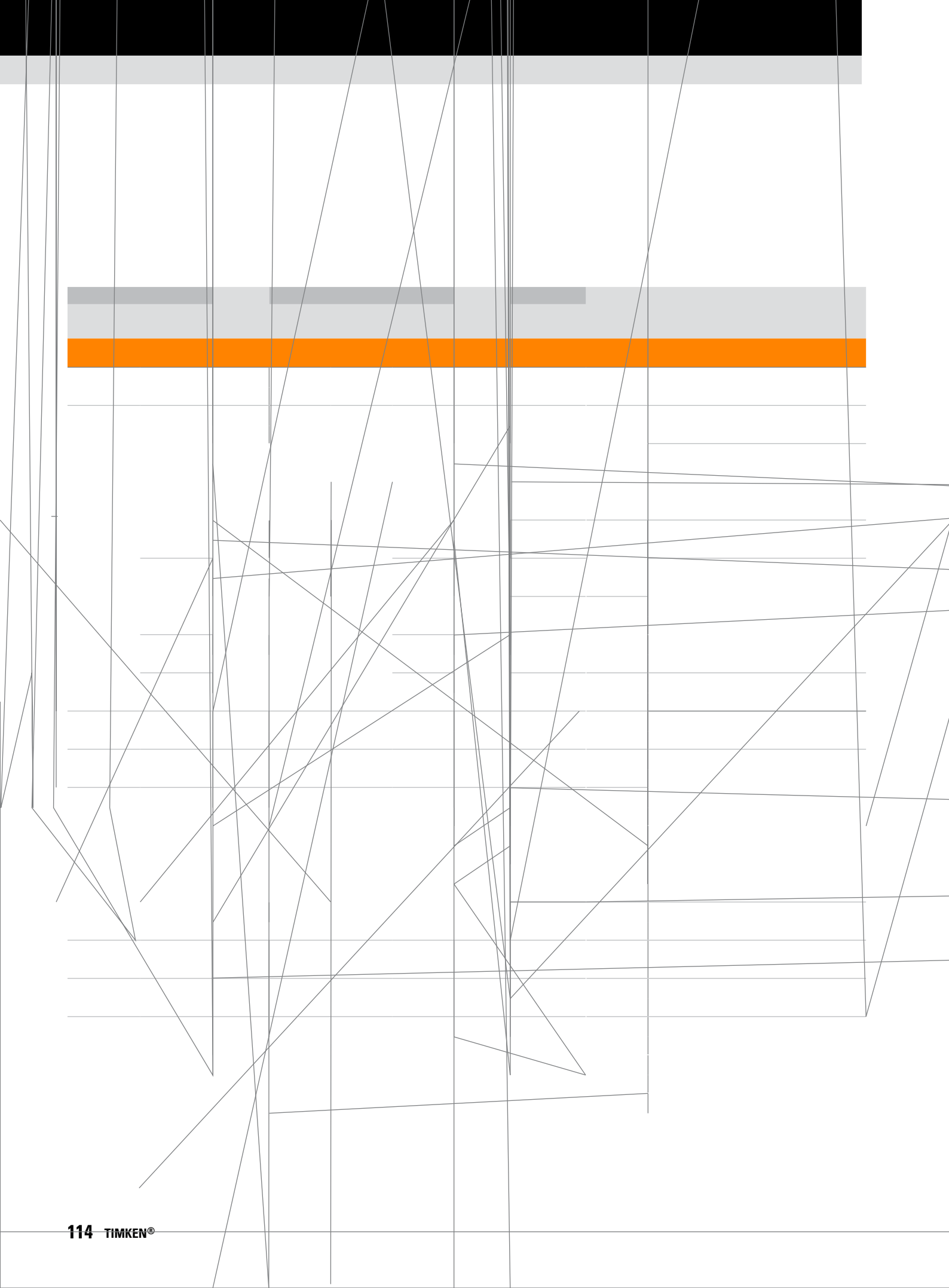


TTC

TTCS

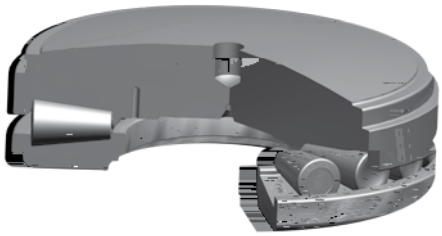
TTCL

48. – TTC TTCS TTCL

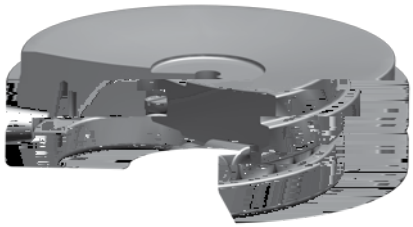


– TTHDSX/SV TTHDFLSX/SV

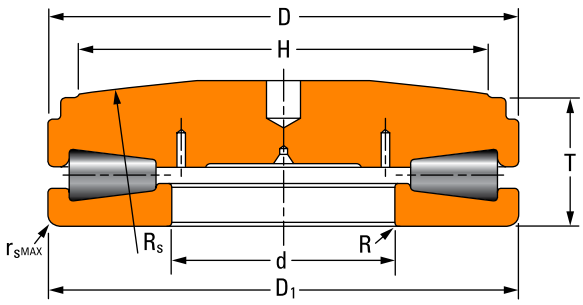
¬



87. TTHDSX



88. TTHDSV



89. TTHDSX

d – (TTHDSX TTHDSV)

D –

D_1 –

T –

H –

R_s –

R –

$r_{s\,max}$ –

TTHDFLSV-1



95. TTHDFLSV-1

TTHDFLSV-2



96. TTHDFLSV-2



97. TTHDSV-1



98. TTHDSV-2

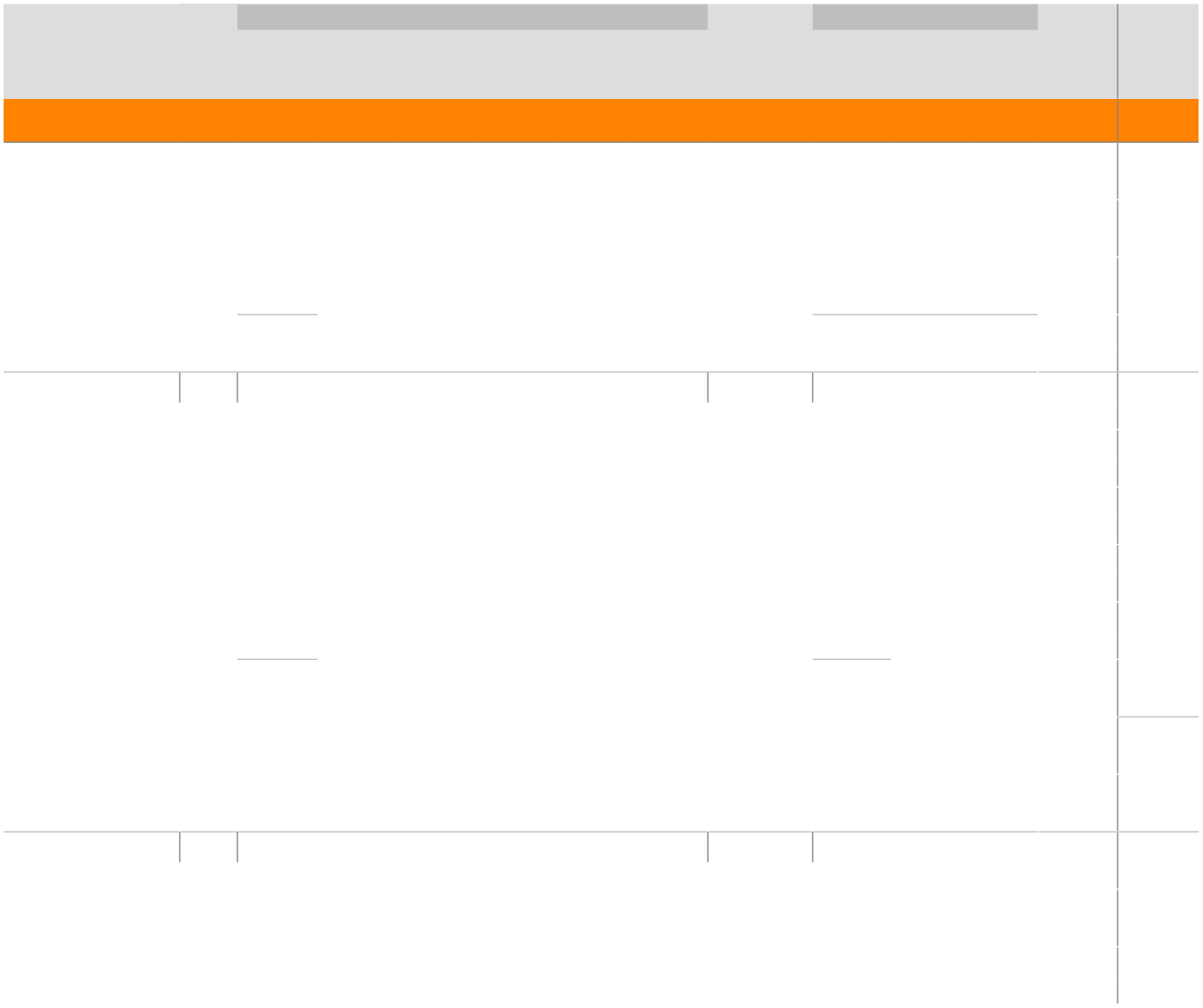
99. TTHDDV

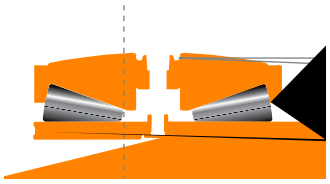
TTHDFV-1 **TTHDFV-1**

49. **– TTHDSX/SV** **TTHDFLSX/SV**

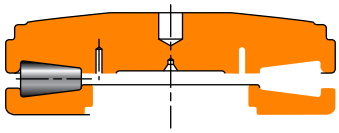
		D	D_1	T	T_1	d	H	C_{a0}	R_s	$r_{s\,max}$	R		
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	
B-7461-B	1	**123,825**	**120,650**	**43,332**	**38,100**	–	**101,600**	**1500**	**457,2**	**1,5**	–	(1)	10, 11

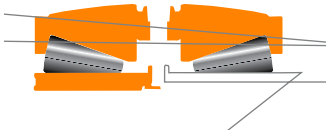






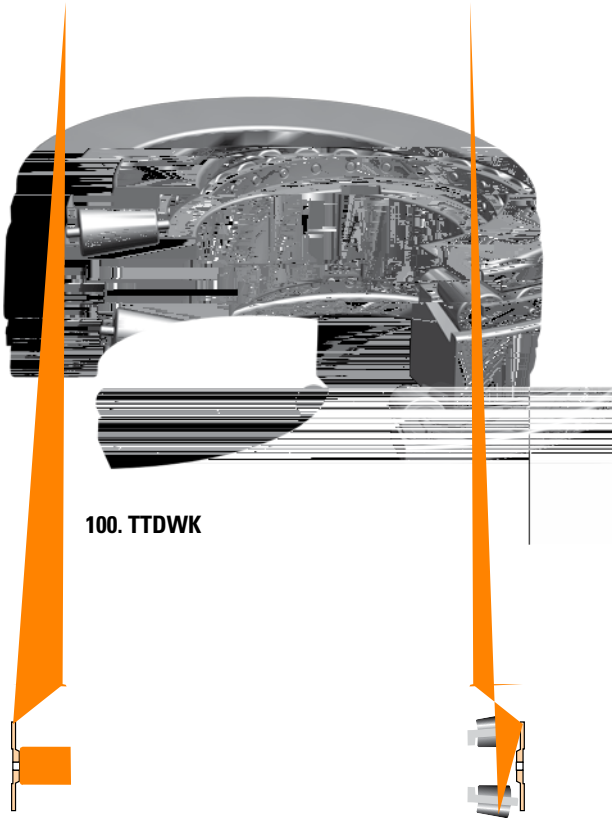
		D	D_1	T	T_1	d	H	C_{a0}	R_s	$r_{s\ max}$	R		
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	
210 TTSX 944 BA1479	1	**533,400** 21,0000	**533,400** 21,0000	**177,800** 7,0000	**31,750** 1,2500	–	**457,200** 18,0000	**36650** 8240000	**1981,2** 78,00	–	–	**271,0** 598,0	10, 11
B-6435-C	7	**533,400** 21,0000	–	**190,500** 7,5000	**50,991** 2,0075	–	–	**37630** 8460000	**1270,0** 50,00	–	–	(1)	
D-2272-C	1	**533,400** 21,0000	**533,400** 21,0000	**190,500** 7,5000	**31,750** 1,2500	–	**469,392** 18,4800	**39190** 8810000	**1220,8** 48,06	**2,5** 0,10	–	**224,2** 494,3	
A-6639-A	1	**533,451** 21,0020	**533,400** 21,0000	**190,500** 7,5000	**31,750** 1,2500	–	**469,392** 18,4800	**39190** 8810000	**1235,5** 48,64	**2,5** 0,10	–	**287,0** 673,0	
210 TTSF 944	10	**535,991** 21,1020	**535,991** 21,1020	**189,992** 7,4800	**31,750** 1,2500	–	–	**36650** 8240000	–	**2,0** 0,08	–	**274,0** 604,0	
212 TTSV 942 EB1876	7	**539,750** 21,2500	**539,750** 21,2500	**196,850** 7,7500	**41,275** 1,6250	–	**406,400** 16,0000	**35630** 8010000	**635,0** 25,00	**11,2** 0,44	–	**288,0** 635,0	
T1011FS-T1011S	4	**539,750** 21,2500	**539,750** 21,2500	**149,225** 5,8750	–	**254,000** 10,0000	**447,751** 17,6280	**25670** 5770000	**1066,8** 42,00	**11,2** 0,44	–	**225,8** 497,8	9, 10, 11
T9250FS-T9250S	9	**546,100** 21,5000	**546,100** 21,5000	**168,275** 6,6250	–	**234,950** 9,2500	**457,200** 18,0000	**29980** 6740000	**641,4** 25,25	**16,0** 0,63	–	**222,2** 489,8	9, 10, 11
T9250FAS-T9250SA	4	**549,275** 21,6250	**546,100** 21,5000	**155,575** 6,1250	–	**139,700** 5,5000	**457,200** 18,0000	**29980** 6740000	**1295,4** 51,00	**16,0** 0,63	–	**265,7** 585,8	9, 10, 11
M-4153-C	7	**551,688** 21,7200	**539,750** 21,2500	**158,369** 6,2350	**25,400** 1,0000	–	**406,400** 16,0000	**35900** 8070000	**635,0** 25,00	**3,0** 0,12	–	**294,8** 650,0	10, 11
218 TTSV 946	7	**555,625** 21,8750	**553,263** 21,7820	**165,100** 6,5000	**38,100** 1,5000	–	**482,600** 19,0000	**38340** 8620000	**635,0** 25,00	**3,2** 0,13	–	**288,4** 635,7	10, 11
218 TTSX 946	1	**555,625** 21,8750	**553,263** 21,7820	**190,856** 7,5140	**38,100** 1,5000	–	**482,600** 19,0000	**38340** 8620000	**1270,0** 50,00	**3,0** 0,12	–	**284,4** 626,9	10, 11
B-6903-C	1	**555,625** 21,8750	**553,263** 21,7820	**227,787** 8,9680	**63,500** 2,5000	–	**425,450** 16,7500	**32870** 7390000	**1930,4** 76,00	–	–	**352,5** 777,1	
B-8867-G	1	**555,625** 21,8750	**553,263** 21,7820	**201,828** 7,9460	**38,100** 1,5000	–	**482,600** 19,0000	**37540** 8440000	**1930,4** 76,00	– –	–	**373,0** 867,0	10, 11
S-4674-G	10	**577,850** 22,7500	**581,025** 22,8750	**228,600** 9,0000	**50,800** 2,0000	–	–	**43500** 9780000	–	–	–	**434,0** 957,0	



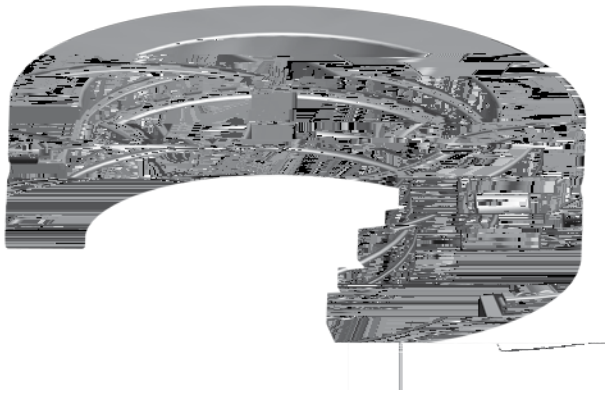


		D	D_1	T	T_1	d	H	C_{a0}	R_s	$r_{s\ max}$	R		
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	**kN** lbf.	**mm** in.	**mm** in.	**mm** in.	**kg** lbs.	
S-4718-A	1	**840,000** 33,0709	**838,000** 32,9920	**281,610** 11,0870	**44,450** 1,7500	–	**725,000** 28,5430	**91190** 20500000	**1524,0** 60,00		–	**986,0** 2174,0	
V-505-A	10	**840,000** 33,0709	**838,000** 32,9920	**249,619** 9,8275	**44,450** 1,7500	–	–	**91190** 20500000	–	**3,2** 0,13	–	**916,0** 2019,0	10, 11
N-21100-C	6	**850,000** 33,4646	**850,000** 33,4646	**360,000** 14,1732	**194,350** 7,6515	–	–	**78290** 17600000	**1500,0** 59,06		–	**1350,0** 2955,0	
T17020FS-T17020S	4	**942,975** 37,1250	**939,800** 37,0000	**260,350** 10,2500	–	**431,800** 17,0000	**762,000** 30,0000	**82290** 18500000	**2000,3** 78,75	**12,7** 0,50	–	**1260,0** 2776,0	9, 10, 11
T12040FS-T12040S	4	**1146,175** 45,1250	**1143,000** 45,0000	**317,500** 12,5000	–	**304,800** 12,0000	**990,600** 39,0000	**136560** 30700000	**2000,3** 78,75	**19,1** 0,75	–	**2530,0** 5577,0	9, 10, 11

TTDWK TTDFLK



100. TTDWK



101. TTDFLK

102. TTDFLK

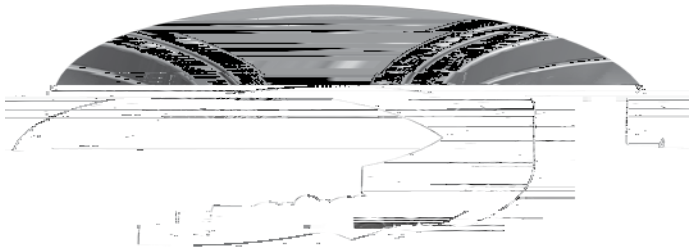


50. **– TTDWK TTDFLK**

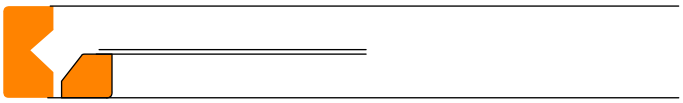
		d	D_o	D_m	T	B	(1)
		mm in.	**mm** in.	**mm** in.	**mm** in.	**mm** in.	
T660DW T660FA							



TXR



108. TXR



109. TXR

51. – TXR

北京