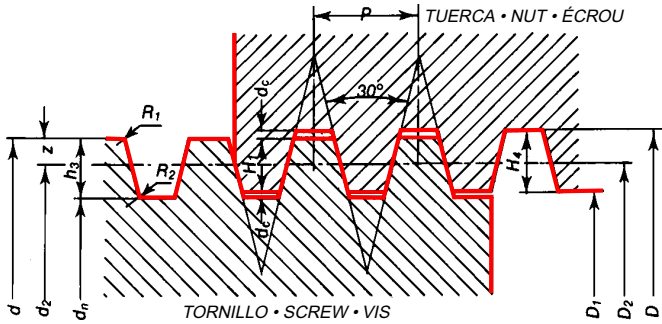


ROSCA TRAPEZOIDAL METRICA - ISO
METRIC BASTARD THREAD - ISO
FILET TRAPÉZOÏDAL MÉTRIQUE - ISO

PERFIL TEORICO • THEORETICAL
PROFILE • PROFIL THÉORIQUE

DIN 103



$$D_1 \times d - 2 H_1 = d - P$$

$$H_1 = 0,5 P$$

$$H_4 = H_1 + a_c = 0,5 P + a_c$$

$$h_3 = H_1 + a_c = 0,5 P + a_c$$

$$z = 0,25 P = \frac{H_1}{2}$$

$$D = d + 2 a_c$$

$$d_n = d - 2 h_3$$

$$d_2 = D_2 = d - 2z = d - 0,5 P$$

$$R_1 = \text{máx. } 0,5 a_c$$

$$R_1 = \text{máx. } a_c$$

P	1,5	2 ∇ 5	6 ∇ 12	14 ∇ 20
a _c	0,15	0,25	0,5	1

Ø Nominal Ø Nominal Ø Nominal		Paso Pitch Pass	Ø Medio Pitch Ø Ø Moyen	Ø Exterior Outside Ø Ø Extérieur	Ø Núcleo Core Ø Ø Noyau		Ø Nominal Ø Nominal Ø Nominal		Paso Pitch Pass	Ø Medio Pitch Ø Ø Moyen	Ø Exterior Outside Ø Ø Extérieur	Ø Núcleo Core Ø Ø Noyau	
Serie 1	Serie 2	P	d ₂ = D ₂	D	d _n	D ₁	Serie 1	Serie 2	P	d ₂ = D ₂	D	d _n	D ₁
Tr 8		1,5	7,250	8,300	6,200	6,500			3	40,500	42,500	38,500	39,000
	Tr 9	1,5 2	8,250 8,000	9,300 9,500	7,200 6,500	7,500 7,000		Tr 42	7 10	38,500 37,000	43,000 43,000	34,000 31,000	35,000 32,000
Tr 10		1,5 2	9,250 9,000	10,300 10,500	8,200 7,500	8,500 8,000	Tr 44		3 7 12	42,500 40,500 38,000	44,500 45,000 45,000	40,500 36,000 31,000	41,000 37,000 32,000
	Tr 11	2 3	10,000 9,500	11,500 11,500	8,500 7,500	9,000 8,000		Tr 46	3 8 12	44,500 42,000 40,000	46,500 47,000 47,000	42,500 37,000 33,000	43,000 38,000 34,000
Tr 12		2 3	11,000 10,500	12,500 12,500	9,500 8,500	10,000 9,000	Tr 48		3 8 12	46,500 44,000 42,000	48,500 49,000 49,000	44,500 39,000 35,000	45,000 40,000 36,000
	Tr 14	2 3	13,000 12,500	14,500 14,500	11,500 10,500	12,000 11,000		Tr 50	3 8 12	48,500 46,000 44,000	50,500 51,000 51,000	46,500 41,000 37,000	47,000 42,000 38,000
Tr 16		2 4	15,000 14,000	16,500 16,500	13,500 11,500	14,000 12,000	Tr 52		3 8 12	50,500 48,000 46,000	52,500 53,000 53,000	48,500 43,000 39,000	49,000 44,000 40,000
	Tr 18	2 4	17,000 16,000	18,500 18,500	15,500 13,500	16,000 14,000		Tr 55	3 9 14	53,500 50,500 48,000	55,500 56,000 57,000	51,500 45,000 39,000	52,000 46,000 41,000
Tr 20		2 4	19,000 18,000	20,500 20,500	17,500 15,500	18,000 16,000	Tr 60		3 9 14	58,500 55,500 53,000	60,500 61,000 62,000	56,500 50,000 44,000	57,000 51,000 46,000
	Tr 22	3 5 8	20,500 19,500 18,000	22,500 22,500 23,000	18,500 16,500 13,000	19,000 17,000 14,000		Tr 70	4 10 16	63,000 60,000 57,000	65,500 66,000 67,000	60,500 54,000 47,000	61,000 55,000 49,000
Tr 24		3 5 8	22,500 21,500 20,000	24,500 24,500 25,000	20,500 18,500 15,000	21,000 19,000 16,000	Tr 75		4 10 16	68,000 65,000 62,000	70,500 71,000 72,000	65,500 59,000 52,000	66,000 60,000 54,000
	Tr 26	3 5 8	24,500 23,500 22,000	26,500 26,500 27,000	22,500 20,500 17,000	23,000 21,000 18,000		Tr 80	4 10 16	73,000 70,000 67,000	75,500 76,000 77,000	70,500 64,000 57,000	71,000 65,000 59,000
Tr 28		3 5 8	26,500 25,500 24,000	28,500 28,500 29,000	24,500 22,500 19,000	25,000 23,000 20,000	Tr 85		4 12 18	78,000 75,000 72,000	80,500 81,000 82,000	75,500 69,000 62,000	76,000 70,000 64,000
	Tr 30	3 6 10	28,500 27,000 25,000	30,500 31,000 31,000	26,500 23,000 19,000	27,000 24,000 20,000		Tr 85	4 12 18	83,000 79,000 76,000	85,500 86,000 87,000	80,500 72,000 65,000	81,000 73,000 67,000
Tr 32		3 6 10	30,500 29,000 27,000	32,500 33,000 33,000	28,500 25,000 21,000	29,000 26,000 22,000	Tr 90		4 12 18	88,000 84,000 81,000	90,500 91,000 92,000	85,500 77,000 70,000	86,000 78,000 72,000
	Tr 34	3 6 10	32,500 31,000 29,000	34,500 35,000 35,000	30,500 27,000 23,000	31,000 28,000 24,000		Tr 95	4 12 18	93,000 89,000 86,000	95,500 96,000 97,000	90,500 82,000 75,000	91,000 83,000 77,000
Tr 36		3 6 10	34,500 33,000 31,000	36,500 37,000 37,000	32,500 29,000 25,000	33,000 30,000 26,000	Tr 100		4 12 20	98,000 94,000 90,000	100,500 101,000 102,000	95,500 87,000 78,000	96,000 88,000 80,000
	Tr 38	3 7 10	36,500 34,500 33,000	38,500 39,000 39,000	34,500 30,000 27,000	35,000 31,000 28,000							
Tr 40		3 7 10	38,500 36,500 35,000	40,500 41,000 41,000	36,500 32,000 29,000	37,000 33,000 30,000							

**ROSCA TRAPEZOIDAL METRICA - ISO
METRIC BASTARD THREAD - ISO
FILET TRAPÉZOÏDAL MÉTRIQUE - ISO**

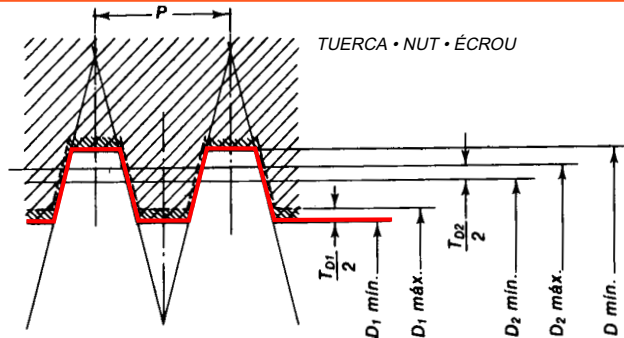
TUERCA • NUT • ÉCROU

DIN 103

TOLERANCIA 7H EN EL Ø MEDIO
Y 4H EN EL Ø NUCLEO

TOLERANCE 7H IN PITCH Ø
AND 4H IN CORE

TOLÉRANCE 7H AU Ø MOYEN
ET 4H AU NOYAU



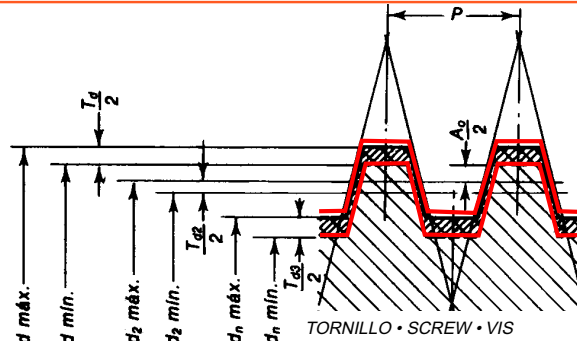
Ø Nominal Ø Nominal Ø Nominal dxP	Ø Exterior Outside Ø Ø Extérieur D min.	Ø Medio Pitch Ø Ø Moyen		Ø Núcleo Core Ø Ø Noyau		Ø Nominal Ø Nominal Ø Nominal dxP	Ø Exterior Outside Ø Ø Extérieur D min.	Ø Medio Pitch Ø Ø Moyen		Ø Núcleo Core Ø Ø Noyau	
		D ₂ mín.	D ₂ máx.	D ₁ mín.	D ₁ máx.			D ₂ mín.	D ₂ máx.	D ₁ mín.	D ₁ máx.
Tr 8 x 1,5	8,300	7,250	7,474	6,500	6,690	Tr 42 x 3	42,500	40,500	40,835	39,000	39,315
Tr 9 x 1,5	9,300	8,250	8,474	7,500	7,690	Tr 42 x 7	43,000	38,500	38,975	35,000	35,560
Tr 9 x 2	9,500	8,000	8,250	7,000	7,236	Tr 42 x 10	43,000	37,000	37,530	32,000	32,710
Tr 10 x 1,5	10,300	9,250	9,474	8,500	8,690	Tr 44 x 3	44,500	42,500	42,835	41,000	41,315
Tr 10 x 2	10,500	9,000	9,250	8,000	8,236	Tr 44 x 7	45,000	40,500	40,975	37,000	37,560
Tr 11 x 2	11,500	10,000	10,250	9,000	9,236	Tr 44 x 12	45,000	38,000	38,560	32,000	32,800
Tr 11 x 3	11,500	9,500	9,780	8,000	8,315	Tr 46 x 3	46,500	44,500	44,855	43,000	43,315
Tr 12 x 2	12,500	11,000	11,265	10,000	10,236	Tr 46 x 8	47,000	42,000	42,530	38,000	38,630
Tr 12 x 3	12,500	10,500	10,800	9,000	9,315	Tr 46 x 12	47,000	40,000	40,630	34,000	34,800
Tr 14 x 2	14,500	13,030	13,265	12,000	12,326	Tr 48 x 3	48,500	46,500	46,855	45,000	45,315
Tr 14 x 3	14,500	12,500	12,800	11,000	11,315	Tr 48 x 8	49,000	44,000	44,530	40,000	40,630
Tr 16 x 2	16,500	15,000	15,265	14,000	14,236	Tr 48 x 12	49,000	42,000	42,630	36,000	36,800
Tr 16 x 4	16,500	14,000	14,355	12,000	12,375	Tr 50 x 3	50,500	48,500	48,855	47,000	47,315
Tr 18 x 2	18,500	17,000	17,265	16,000	16,236	Tr 50 x 8	51,000	46,000	46,530	42,000	42,630
Tr 18 x 4	18,500	16,000	16,355	14,000	14,375	Tr 50 x 12	51,000	44,000	44,630	38,000	38,800
Tr 20 x 2	20,500	19,000	19,265	18,000	18,236	Tr 52 x 3	52,500	50,500	50,855	49,000	49,315
Tr 20 x 4	20,500	18,000	18,355	16,000	16,375	Tr 52 x 8	53,000	48,000	48,530	44,000	44,630
Tr 22 x 3	22,500	20,500	20,800	19,000	19,315	Tr 52 x 12	53,000	46,000	46,630	40,000	40,800
Tr 22 x 5	22,500	19,500	19,875	17,000	17,450	Tr 55 x 3	55,500	53,500	53,855	52,000	52,315
Tr 22 x 8	23,000	18,000	18,475	14,000	14,630	Tr 55 x 9	56,000	50,500	51,060	46,000	46,670
Tr 24 x 3	24,500	22,500	22,835	21,000	21,315	Tr 55 x 14	57,000	48,000	48,670	41,000	41,900
Tr 24 x 5	24,500	21,500	21,900	19,000	19,450	Tr 60 x 3	60,500	58,500	58,855	57,000	57,315
Tr 24 x 8	25,000	20,000	20,500	16,000	16,630	Tr 60 x 9	61,000	55,500	56,060	51,000	51,670
Tr 26 x 3	26,500	24,500	24,835	23,000	23,315	Tr 60 x 14	62,000	53,000	53,670	46,000	46,900
Tr 26 x 5	26,500	23,500	23,900	21,000	21,450	Tr 65 x 4	65,500	63,000	63,400	61,000	61,375
Tr 26 x 8	27,000	22,000	22,500	18,000	18,630	Tr 65 x 10	66,000	60,000	60,560	55,000	55,710
Tr 28 x 3	28,500	26,500	26,835	25,000	25,315	Tr 65 x 16	67,000	57,000	57,710	49,000	50,000
Tr 28 x 5	28,500	25,500	25,900	23,000	23,450	Tr 70 x 4	70,500	68,000	68,400	66,000	66,375
Tr 28 x 8	29,000	24,000	24,500	20,000	20,630	Tr 70 x 10	71,000	65,000	65,560	60,000	60,710
Tr 30 x 3	30,500	28,500	28,835	27,000	27,315	Tr 70 x 16	72,000	62,000	62,710	54,000	55,000
Tr 30 x 6	31,000	27,000	27,450	24,000	24,500	Tr 75 x 4	75,500	73,000	73,400	71,000	71,375
Tr 30 x 10	31,000	25,000	25,530	20,000	20,710	Tr 75 x 10	76,000	70,000	70,560	65,000	65,710
Tr 32 x 3	32,500	30,500	30,835	29,000	29,315	Tr 75 x 16	77,000	67,000	67,710	59,000	60,000
Tr 32 x 6	33,000	29,000	29,450	26,000	26,500	Tr 80 x 4	80,500	78,000	78,400	76,000	76,375
Tr 32 x 10	33,000	27,000	27,530	22,000	22,710	Tr 80 x 10	81,000	75,000	75,560	70,000	70,710
Tr 34 x 3	34,500	32,500	32,835	31,000	31,315	Tr 80 x 16	82,000	72,000	72,710	64,000	65,000
Tr 34 x 6	35,000	31,000	31,450	28,000	28,500	Tr 85 x 4	85,500	83,000	83,400	81,000	81,375
Tr 34 x 10	35,000	29,000	29,530	24,000	24,710	Tr 85 x 12	86,000	79,000	79,630	73,000	73,800
Tr 36 x 3	36,500	34,500	34,835	33,000	33,315	Tr 85 x 18	87,000	76,000	76,750	67,000	68,120
Tr 36 x 6	37,000	33,000	33,450	30,000	30,500	Tr 90 x 4	90,500	88,000	88,400	86,000	86,375
Tr 36 x 10	37,000	31,000	31,530	26,000	26,710	Tr 90 x 12	91,000	84,000	84,630	78,000	78,800
Tr 38 x 3	38,500	36,500	36,835	35,000	35,315	Tr 90 x 18	92,000	81,000	81,750	72,000	73,120
Tr 38 x 7	39,000	34,500	34,975	31,000	31,560	Tr 95 x 4	95,500	93,000	93,425	91,000	91,375
Tr 38 x 10	39,000	33,000	33,530	28,000	28,710	Tr 95 x 12	96,000	89,000	89,670	83,000	83,800
Tr 40 x 3	40,500	38,500	38,835	37,000	37,315	Tr 95 x 18	97,000	86,000	86,800	77,000	78,120
Tr 40 x 7	41,000	36,500	36,975	33,000	33,560	Tr 100 x 4	100,500	98,000	98,425	96,000	96,375
Tr 40 x 10	41,000	35,000	35,530	30,000	30,710	Tr 100 x 12	101,000	94,000	94,670	88,000	88,800
						Tr 100 x 20	102,000	90,000	90,800	80,000	81,180

ROSCA TRAPEZOIDAL METRICA - ISO
METRIC BASTARD THREAD - ISO
FILET TRAPÉZOÏDAL MÉTRIQUE - ISO

TORNILLO • SCREW • VIS

DIN 103

TOLERANCIA 7e EN EL Ø MEDIO
 Y 4h EN EL Ø NUCLEO
 TOLERANCE 7e IN PITCH Ø
 AND 4h IN CORE
 TOLÉRANCE 7e AU Ø MOYEN
 ET 4h AU NOYAU



Ø Nominal Ø Nominal Ø Nominal dxP	Ø Exterior Outside Ø Ø Extérieur		Ø Medio Pitch Ø Ø Moyen		Ø Núcleo Core Ø Ø Noyau		Ø Nominal Ø Nominal Ø Nominal dxP	Ø Exterior Outside Ø Ø Extérieur		Ø Medio Pitch Ø Ø Moyen		Ø Núcleo Core Ø Ø Noyau	
	D máx.	D mín.	D ₂ máx.	D ₂ mín.	D _n máx.	D _n mín.		D máx.	D mín.	D ₂ máx.	D ₂ mín.	D _n máx.	D _n mín.
Tr 8 x 1,5	8,00	7,850	7,183	7,013	6,200	5,921	Tr 42 x 3	42,000	41,764	40,415	40,165	38,500	38,103
Tr 9 x 1,5	9,000	8,850	8,183	8,013	7,200	6,921	Tr 42 x 7	42,000	41,575	38,375	38,020	34,000	33,431
Tr 9 x 2	9,000	8,820	7,929	7,739	6,500	6,191	Tr 42 x 10	42,000	41,470	36,850	36,450	31,000	30,350
Tr 10 x 1,5	10,000	9,850	9,183	9,013	8,200	7,921	Tr 44 x 3	44,000	43,764	42,415	42,165	40,500	40,103
Tr 10 x 2	10,000	9,820	8,929	8,739	7,500	7,191	Tr 44 x 7	44,000	43,575	40,375	40,020	36,000	35,431
Tr 11 x 2	11,000	10,820	9,929	9,739	8,500	8,191	Tr 44 x 12	44,000	43,400	37,830	37,405	31,000	30,309
Tr 11 x 3	11,000	10,764	9,415	9,203	7,500	7,150	Tr 46 x 3	46,000	45,764	44,415	44,150	42,500	42,084
Tr 12 x 2	12,000	11,820	10,929	10,729	9,500	9,179	Tr 46 x 8	46,000	45,500	41,868	41,468	37,000	36,368
Tr 12 x 3	12,000	11,764	10,415	10,191	8,500	8,135	Tr 46 x 12	46,000	45,400	39,830	39,355	33,000	32,246
Tr 14 x 2	14,000	13,820	12,929	12,729	11,500	11,179	Tr 48 x 3	48,000	47,764	46,415	46,150	44,500	44,084
Tr 14 x 3	14,000	13,764	12,415	12,191	10,500	10,135	Tr 48 x 8	48,000	47,550	43,868	43,468	39,000	38,368
Tr 16 x 2	16,000	15,820	14,929	14,729	13,500	13,179	Tr 48 x 12	48,000	47,400	41,830	41,355	35,000	34,246
Tr 16 x 4	16,000	15,700	13,905	13,640	11,500	11,074	Tr 50 x 3	50,000	49,764	48,415	48,150	46,500	46,084
Tr 18 x 2	18,000	17,820	16,929	16,729	15,500	15,179	Tr 50 x 8	50,000	49,550	45,868	45,468	41,000	40,368
Tr 18 x 4	18,000	17,700	15,905	15,640	13,500	13,074	Tr 50 x 12	50,000	49,400	43,830	43,355	37,000	36,246
Tr 20 x 2	20,000	19,820	18,929	18,729	17,500	17,179	Tr 52 x 3	52,000	51,764	50,415	50,150	48,500	48,084
Tr 20 x 4	20,000	19,700	17,905	17,640	15,500	15,074	Tr 52 x 8	52,000	51,550	47,868	47,468	43,000	42,368
Tr 22 x 3	22,000	21,764	20,415	20,191	18,500	18,135	Tr 52 x 12	52,000	51,400	45,830	45,355	39,000	38,246
Tr 22 x 5	22,000	21,665	19,394	19,114	16,500	16,044	Tr 55 x 3	55,000	54,764	53,415	53,150	51,500	51,084
Tr 22 x 8	22,000	21,550	17,868	17,513	13,000	12,424	Tr 55 x 9	55,000	54,500	50,360	49,935	45,000	44,329
Tr 24 x 3	24,000	23,764	22,415	22,165	20,500	20,103	Tr 55 x 14	55,000	54,330	47,820	47,320	39,000	38,195
Tr 24 x 5	24,000	23,665	21,394	21,094	18,500	18,019	Tr 60 x 3	60,000	59,764	58,415	58,150	56,600	56,084
Tr 24 x 8	24,000	23,550	19,868	19,493	15,000	14,399	Tr 60 x 9	60,000	59,500	55,360	54,935	50,000	49,329
Tr 26 x 3	26,000	25,764	24,415	24,165	22,500	22,103	Tr 60 x 14	60,000	59,330	52,820	52,320	44,000	43,195
Tr 26 x 5	26,000	25,665	23,394	23,094	20,500	20,019	Tr 65 x 4	65,000	64,700	62,905	62,605	60,500	60,030
Tr 26 x 8	26,000	25,500	21,868	21,493	17,000	16,399	Tr 65 x 10	65,000	64,470	59,850	59,425	54,000	53,319
Tr 28 x 3	28,000	27,764	26,415	26,165	24,500	24,103	Tr 65 x 16	65,000	64,290	56,810	56,280	47,000	46,147
Tr 28 x 5	28,000	27,665	25,394	25,094	22,500	22,019	Tr 70 x 4	70,000	69,700	67,905	67,605	65,500	65,030
Tr 28 x 8	28,000	27,550	23,868	23,493	19,000	18,399	Tr 70 x 10	70,000	69,470	64,850	64,425	59,000	58,319
Tr 30 x 3	30,000	29,764	28,415	28,165	26,500	26,103	Tr 70 x 16	70,000	69,290	61,810	61,280	52,000	51,147
Tr 30 x 6	30,000	29,625	26,882	26,547	23,000	22,463	Tr 75 x 4	75,000	74,700	72,905	72,605	70,500	70,030
Tr 30 x 10	30,000	29,470	24,850	24,450	19,000	18,350	Tr 75 x 10	75,000	74,470	69,850	69,425	64,000	63,319
Tr 32 x 3	32,000	31,764	30,415	30,165	28,500	28,103	Tr 75 x 16	75,000	74,290	66,810	66,280	57,000	56,147
Tr 32 x 6	32,000	31,625	28,882	28,547	25,000	24,463	Tr 80 x 4	80,000	79,700	77,905	77,605	75,500	75,030
Tr 32 x 10	32,000	31,470	26,850	26,450	21,000	20,350	Tr 80 x 10	80,000	79,470	74,850	74,425	69,000	68,319
Tr 34 x 3	34,000	33,764	32,415	32,165	30,500	30,103	Tr 80 x 16	80,000	79,290	71,810	71,280	62,000	61,147
Tr 34 x 6	34,000	33,625	30,882	30,547	27,000	26,463	Tr 85 x 4	85,000	84,700	82,905	82,605	80,500	80,030
Tr 34 x 10	34,000	33,470	28,850	28,450	23,000	22,350	Tr 85 x 12	85,000	84,400	78,830	78,355	72,000	71,246
Tr 36 x 3	36,000	35,764	34,415	34,165	32,500	32,103	Tr 85 x 18	85,000	84,200	75,800	75,240	65,000	64,100
Tr 36 x 6	36,000	35,625	32,882	32,547	29,000	28,463	Tr 90 x 4	90,000	89,700	87,905	87,605	85,500	85,030
Tr 36 x 10	36,000	35,470	30,850	30,450	25,000	24,350	Tr 90 x 12	90,000	89,400	83,830	83,355	77,000	76,246
Tr 38 x 3	38,000	37,764	36,415	36,165	34,500	34,103	Tr 90 x 18	90,000	89,200	80,800	80,240	70,000	69,100
Tr 38 x 7	38,000	37,575	34,375	34,020	30,000	29,431	Tr 95 x 4	95,000	94,700	92,905	92,590	90,500	90,011
Tr 38 x 10	38,000	37,470	32,850	32,450	27,000	26,350	Tr 95 x 12	95,000	94,400	88,830	88,330	82,000	81,215
Tr 40 x 3	40,000	39,764	38,415	38,165	36,500	36,103	Tr 95 x 18	95,000	94,200	85,800	85,200	75,000	74,050
Tr 40 x 7	40,000	39,575	36,575	36,220	32,000	31,431	Tr 100 x 4	100,000	99,700	97,905	97,590	95,500	95,011
Tr 40 x 10	40,000	39,470	34,850	34,450	29,000	28,350	Tr 100 x 12	100,000	99,400	93,830	93,330	87,000	86,215
							Tr 100 x 20	100,000	99,150	89,788	89,188	78,000	77,038