



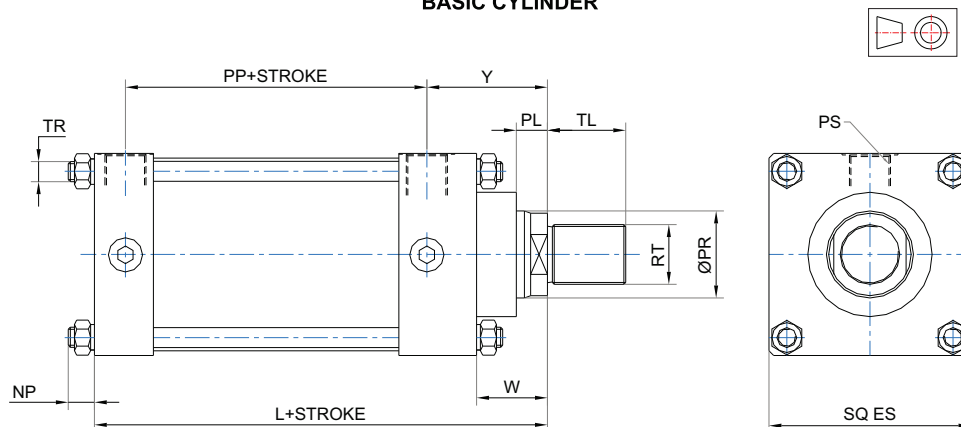
Hydraulic Cylinders - HH21 Series

AS PER ISO 6020/2

- Rated Pressure 210 kg/cm²
- Peak Pressure 315 kg/cm²
- Cylinder bore diameters up to 200mm
- Temperature range:- -20°C to 90°C. (optional seals for temp. up to 180°C)

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BASIC CYLINDER



SPECIFICATION OF MATERIALS

END COVERS : Precision machined steel

CYLINDER BARREL : Cold drawn seamless steel, honed and polished internally to a maximum surface roughness of Ra=0.4 microns

PISTON : Steel, single piece, precisely machined for perfect alignment

PISTON BEARING : Polyester fabric with polyester resin+PTFE for maximum rigidity

PISTON ROD : Medium carbon steel, toughened ground Hard-chrome plated & polished to a maximum roughness of Ra=0.4 microns

PISTON ROD BEARING : Polyester fabric with polyester resin+PTFE for maximum rigidity

SEALING SYSTEM : We use a wide range of international standard sealing systems to suit various applications & temperatures

MOUNTINGS : Accurately machined steel suitable for heavy duty application

TIE RODS : High tensile steel

BORE DIA	PR DIA	ES (Sq)	RT	PS (BSP)	L	PL	TL	PP	TR	W	Y	NP (max)
25	12	40	M10x1.25	1/4"	114	9	14	53	M5x0.8	25	50	8
32	14	45	M12x1.25	1/4"	128	13	16	56	M6x1	35	60	9
	22		M16x1.5				22					
40	18	64	M14x1.5	3/8"	153	13	18	73	M8x1	35	62	9
	28		M20x1.5				28					
50	22		M16x1.5				22					
	36	76	M27x2	1/2"	159	16	36	74	M12x1.25	41	67	16
	28		M20x1.5				28					
63	45	90	M33x2	1/2"	168	19	45	80	M12x1.25	48	71	16
	36		M27x2				36					
80	56	115	M42x2	3/4"	190	22	56	93	M16x1.5	51	77	21
	45		M33x2				45					
100	70	130	M48x2	3/4"	203	25	63	101	M16x1.5	57	82	21
	56		M42x2				56					
125	90	165	M64x3	1"	232	25	85	117	M22x1.5	57	86	27
	70		M48x2				63					
	70		M48x2				63					
160	110	205	M80x3	1"	245	25	95	130	M27x2	57	86	33
	90		M64x3				85					
200	140	245	M100x3	1 1/4"	299	25	112	165	M30x2	57	98	36
	110		M80x3				95					

Note: Head end cushioning will not be provided for larger sized piston rods.

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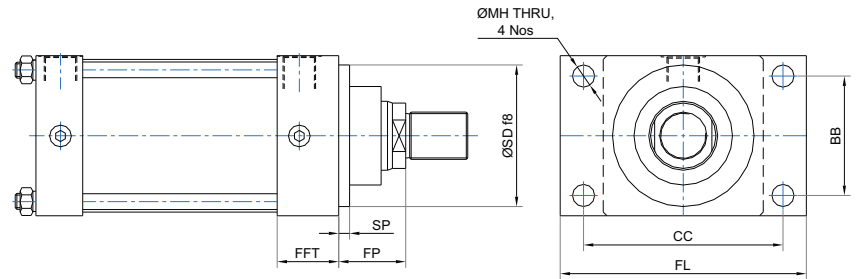
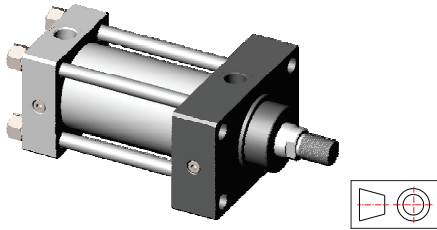
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website: www.orsettindia.com

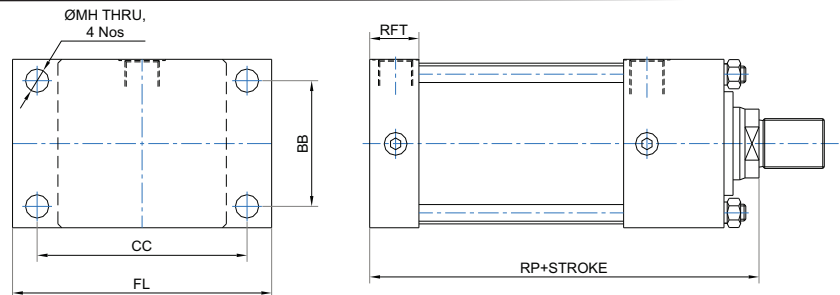
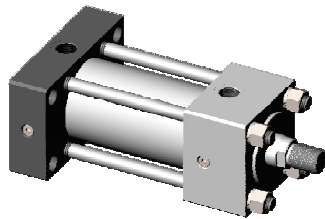
Standard Mountings HH21 Series

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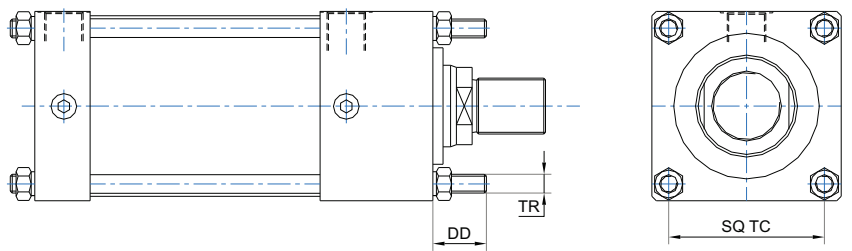
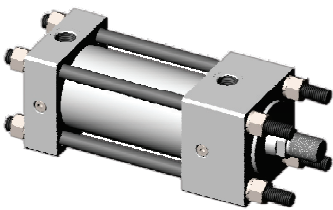
Head Flange (ME5)



Cap Flange (ME6)



Extended Tie Rod Head End (MX3)



DIMENSIONAL DETAILS

BORE	25			32			40			50			63			80			100			125			160			200		
ROD	12	14	22	18	28	22	36	28	28	45	36	36	56	45	45	70	56	56	90	70	70	110	90	90	140	110				
BB	27		33		41		52		65		83		97		126		155		190											
CC	51		58		87		105		117		149		162		208		253		300											
FL	65		70		110		130		145		180		200		250		300		360											
SD	38	42		62		74		75	88	88	82	105	105	92	125	125	105	150	150	125	170	170	150	210	210					
SP	3	3		3		4		4		4		5		5		5		5												
MH	5.5	6.6		11		14		14		18		18		22		26		33												
FFT	40		40		45		45		45		50		50		58		58		76											
RFT	25	25		38		38		38		45		45		58		58		76												
FP	25	35		35		41		48		51		57		57		57		57												
RP	114	128		153		159		168		190		203		232		245		299												
DD	19	24		35		46		46		59		59		81		92		115												
TC	28	33		42		52		64		83		97		126		155		190												
TR	M5	M6 x 1		M8 x 1		M12 x 1.25		M12 x 1.25		M16 x 1.5		M16 x 1.5		M22 x 1.5		M27 x 2		M30 x 2												

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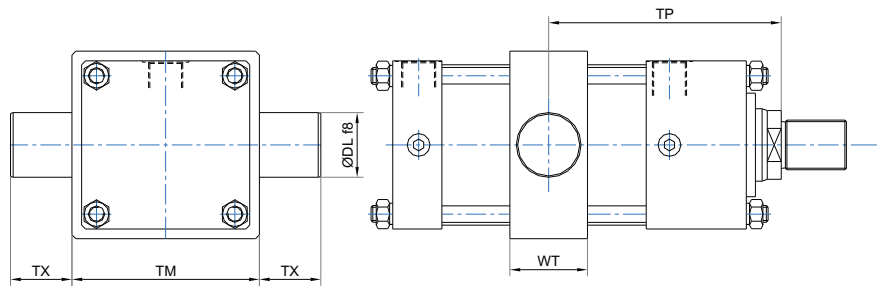
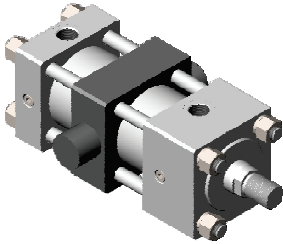
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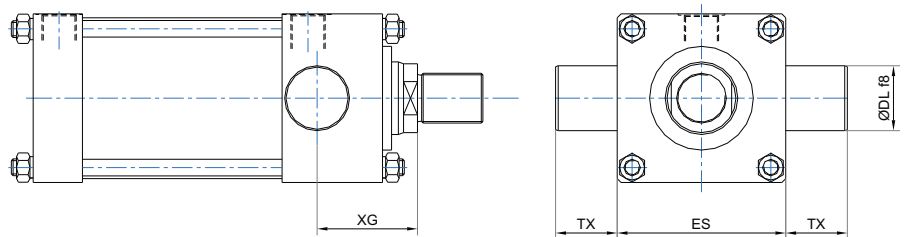
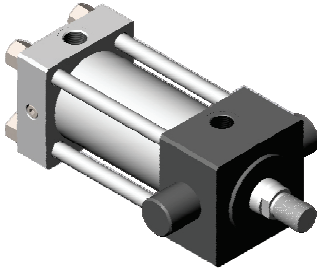
Standard Mountings HH21 Series



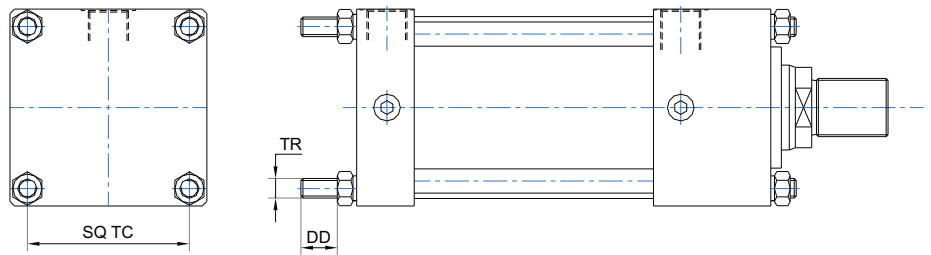
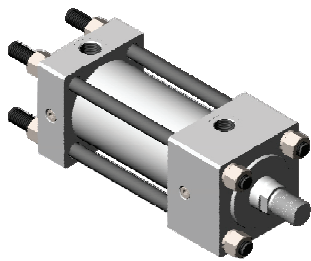
Intermediate Trunnion (MT4)



Head Trunnion (MT1)



Extended Tie Rod Cap End (MX2)



DIMENSIONAL DETAILS

BORE	25	32	40	50	63	80	100	125	160	200																
ROD	12	14	22	18	28	22	36	28	28	45	36	36	56	45	45	70	56	56	90	70	70	110	90	90	140	110
WT	20	25	30	40	40	50	60	73	90	110	127	140	178	215	279											
TM	48	55	76	89	100	127	140	178	215	279																
TX	10	12	16	20	25	32	40	50	63	80																
DL	12	16	20	25	32	40	50	63	80	100																
XG	44	54	57	64	70	76	71	75	75	85																
TP	TO BE SPECIFIED BY CUSTOMER																									
DD	19	24	35	26	46	59	59	81	92	115																
TC	28	33	42	52	64	83	97	126	155	190																
TR	M5	M6 x 1	M8 x 1	M12 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M22 x 1.5	M27 x 2	M30 x 2																

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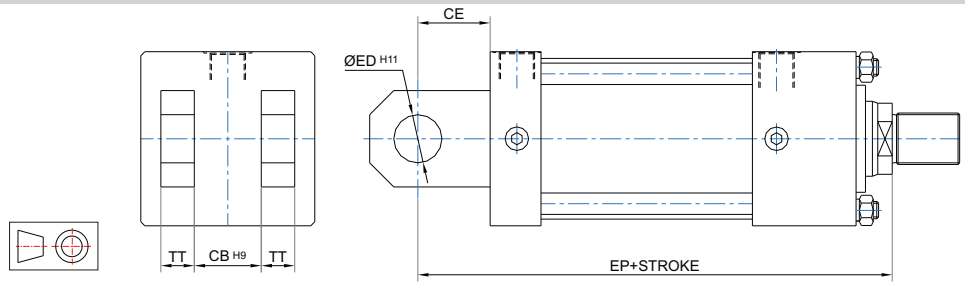
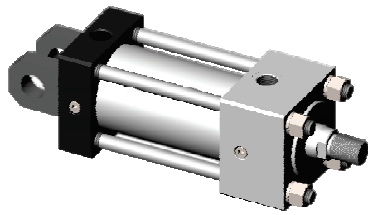
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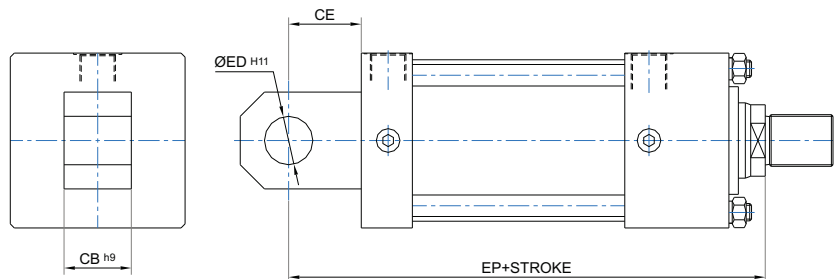
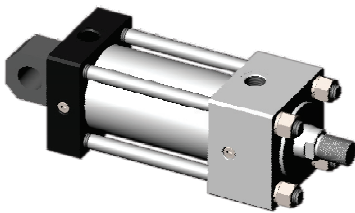
Standard Mountings HH21 Series



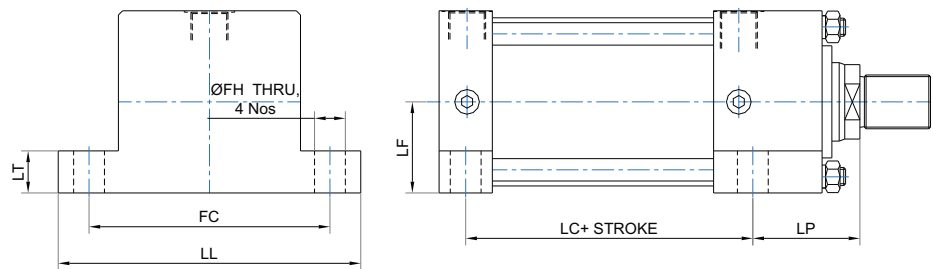
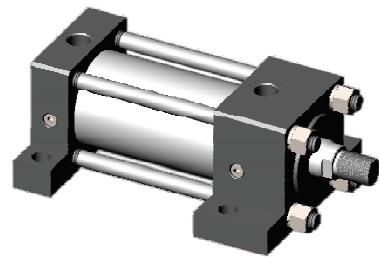
Cap Clevis (MP1)



Cap Eye (MP3)



Foot Lug (MS2)



DIMENSIONAL DETAILS

BORE	25		32		40		50		63		80		100		125		160		200							
ROD	12	14	22	18	28	22	36	28	28	45	36	36	56	45	45	70	56	56	90	70	70	110	90	90	140	110
ED	10	12		14		20		20		28		36		45		56		70								
TT	6	8		10		15		15		20		25		30		35		40								
CB	12	16		20		30		30		40		50		60		70		80								
CE	13	19		19		32		32		39		54		57		63		82								
EP	127	147		172		191		200		229		257		289		308		381								
ES	40	45		64		76		90		115		130		165		205		245								
CF	19	22		31		37		44		57		63		82		101		122								
FH	6.6	9		11		14		18		18		26		26		33		39								
LT	8.5	12.5		12.5		19		26		26		32		32		38		44								
FC	54	63		83		102		124		149		172		210		260		311								
LL	72	84		103		127		161		186		216		254		318		381								
LP	33	45		45		54		65		68		79		79		86		98								
LC	73	73		98		92		86		105		102		131		130		172								

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Technical Data & Ordering Details for HH21 Series



TECHNICAL DETAILS

Bore Dia (mm)	Rod Dia (mm)	Piston Area		Action Force at Pressure in kgf				Piston velocity in m/s at flow= 1 ltr/min		Requisite flow in ltr/min for velocity = 0.1 m/s	
		(cm ²)		140 kg/cm ²		210 kg/cm ²		+	-	+	-
		+	-	+	-	+	-				
25	12	4.9	3.8	686.9	529	1030	793	0.0340	0.0441	2.94	2.27
32	14	8.0	6.5	1125.4	910	1688	1365	0.0207	0.0256	4.82	3.90
	22		4.2		593		890		0.0393		2.54
40	18	12.6	10.0	1758.4	1402	2638	2103	0.0133	0.0166	7.54	6.01
	28		6.4		897		1345		0.0260		3.84
50	22	19.6	15.8	2747.5	2216	4121	3323	0.0085	0.0105	11.78	9.50
	36		9.5		1323		1985		0.0176		5.67
	28		13.5		1886		2829		0.0124		8.08
63	28	31.2	25.0	4361.9	3500	6543	5250	0.0053	0.0067	18.69	15.00
	45		15.3		2136		3205		0.0109		9.16
	36		21.0		2938		4406		0.0079		12.59
80	36	50.2	40.1	7033.6	5609	10550	8414	0.0033	0.0042	30.14	24.04
	56		25.6		3587		5381		0.0065		15.37
	45		34.3		4808		7212		0.0049		20.61
100	45	78.5	62.6	10990.0	8765	16485	13147	0.0021	0.0027	47.10	37.56
	70		40.0		5605		8407		0.0042		24.02
	56		53.9		7544		11315		0.0031		32.33
125	56	122.7	98.0	17171.9	13725	25758	20588	0.0014	0.0017	73.59	58.82
	90		59.1		8270		12405		0.0028		35.44
	70		84.2		11787		17680		0.0020		50.51
160	70	201.0	162.5	28134.4	22749	42202	34124	0.0008	0.0010	120.58	97.50
	110		106.0		14837		22255		0.0016		63.59
	90		137.4		19233		28849		0.0012		82.43
200	90	314.0	250.4	43960.0	35058	65940	52587	0.0005	0.0007	188.40	150.25
	140		160.1		22420		33629		0.0010		96.08
	110		219.0		30662		45993		0.0008		131.41

Model Code Indication

HH21 - 100 / 500 - ME5 - 45 - CB - (X) - FC / SS12

Series	Bore sizes	Stroke	Mountings	Piston Rod sizes	Cushioning	Accessories & Special features	Sealing System Code
HH21 Rated Hydraulic Pressure of 210kg/cm ²	Ø25 - 200mm (10 Std. sizes)	To be specified in mm	ME5 - Head Flange ME6 - Cap Flange MX2 - Extended Tie Rod-Cap End MX3 - Extended Tie Rod-Cap End MT1 - Head Trunnion MT4 - Intermediate Trunnion MP1 - Cap Clevis MP3 - Cap Eye MS2 - Foot Lug	Ø12 - 140mm (26 Std. sizes)	CB - Cushioned at both ends CR - Cushioned at Rear end CF - Cushioned at Front end NC - Non Cushioned	PRE - Rod Eye PRF - Rod Fork SA - Single Acting DE - Double Ended etc....	FC/SS12 (Std.) for alternatives contact us.

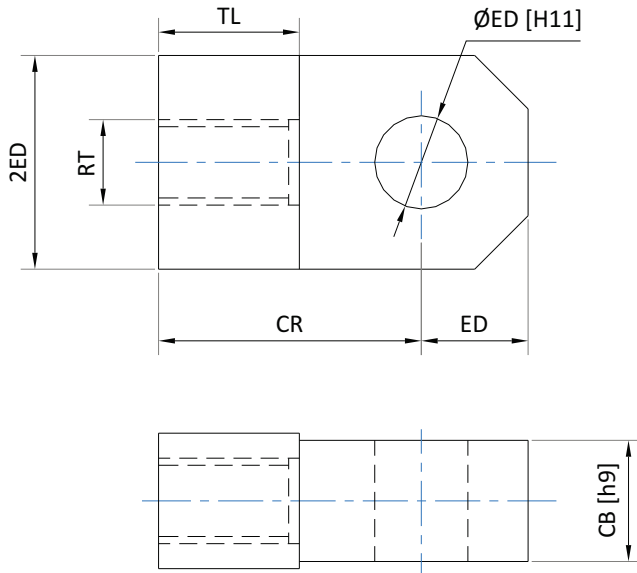
NOTE:- The right of modification for technical improvement is reserved. All dimensions are in mm unless otherwise specified

CUSTOM BUILT CYLINDERS CAN ALSO BE OFFERED ON REQUEST

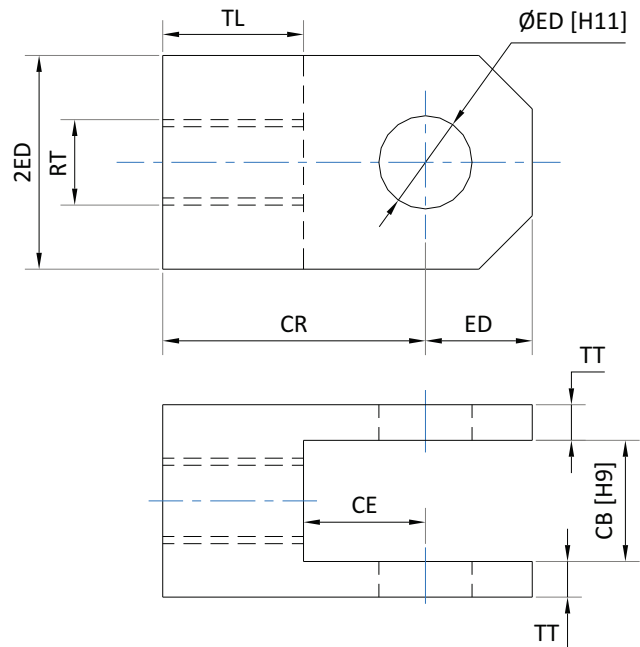
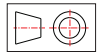
Piston Rod Eye & Piston Rod Fork for HH21 Series



Piston Rod Eye (PRE)



Piston Rod Fork (PRF)



Ordering Code

For Piston Rod Eye :- **HH21-PRE-****
where ** - Piston Rod Dia

For Piston Rod Fork :- **HH21-PRF-****
where ** - Piston Rod Dia

SPECIFICATION & DIMENSIONAL DETAILS

ROD DIA	RT	TL	CR	ED	CB	TT	CE
12	M10x1.25	18	32	10	12	7	14
14	M12x1.25	17	36	12	16	9	19
18	M14x1.5	19	38	14	20	11	19
22	M16x1.5	22	54	20	30	16	32
28	M20x1.5	28	60	20	30	21.5	32
36	M27x2	36	75	28	40	26.5	39
45	M33x2	45	99	36	50	31.5	54
56	M 42x2	56	113	45	60	36.5	57
70	M48x2	63	126	56	70	41.5	63
90	M64x3	85	168	70	80	45	83

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