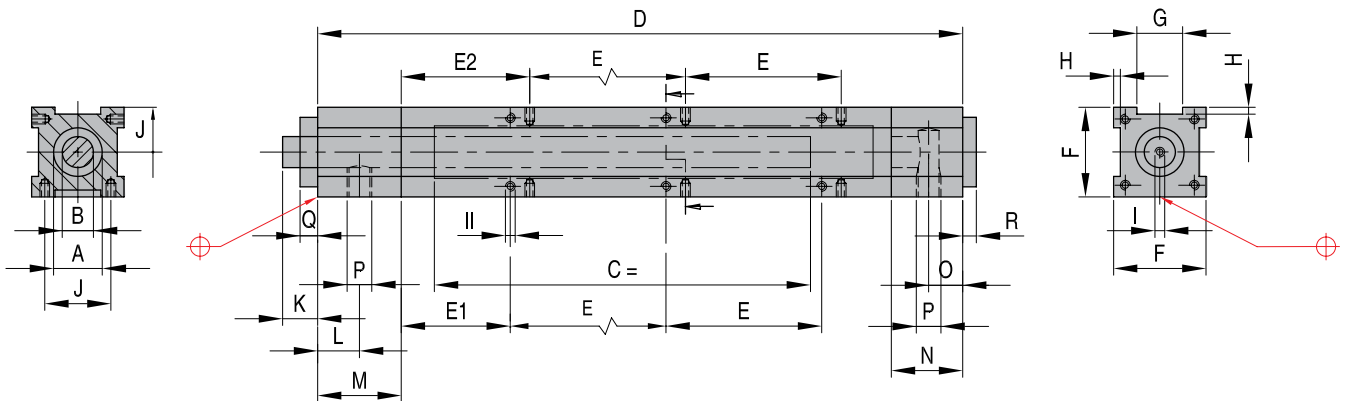


REF	Includes		
	Base construction	End caps-out	End Caps-in
ZG 25 300	ZG 25 300	ZHU 25	ZHI 25
ZG 25 400	ZG 25 400	ZHU 25	ZHI 25
ZG 25 500	ZG 25 500	ZHU 25	ZHI 25
ZG 40 300	ZG 40 300	ZHU 40	ZHI 40
ZG 40 400	ZG 40 400	ZHU 40	ZHI 40
ZG 40 500	ZG 40 500	ZHU 40	ZHI 40
ZG 63 400	ZG 63 400	ZHU 63	ZHI 63
ZG 63 500	ZG 63 500	ZHU 63	ZHI 63

Base construction

Max T = 80°C - Max p = 150 bar

ZG

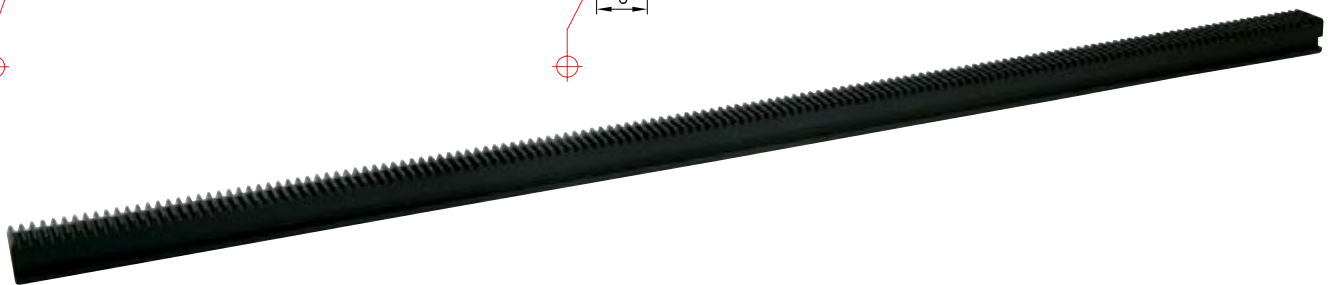
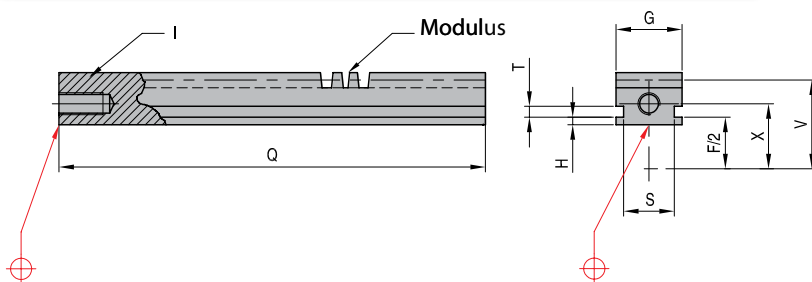


REF	A	B	C	D	E	E1	E2	F	G	H	J	K	L	M	N	O	P	Q	R	I	II
ZG 25 300			300	424	3x80	56	66														
ZG 25 400	∅ 25	∅ 16	400	524	3x80	106	116	46	20	3,5	34	18	21,5	43	29	11	R 1/4"	9	6	M8x20	SM5x10
ZG 25 500			500	624	5x80	76	86														
ZG 40 300			300	432	3x80	56	66														
ZG 40 400	∅ 40	∅ 22	400	532	3x80	106	116	56	30	3,5	44	22	34	53	27	13	R 1/2"	9	8	M10x30	SM5x10
ZG 40 500			500	632	5x80	76	86														
ZG 63 400			400	556	3x80	114	124	96	50	8	70	38	25	52	35	16	R 3/4"	22	12	M16x40	SM8x16
ZG 63 500	∅ 63	∅ 36	500	656	5x80	84	94														

Racks

Mat.: 1.6580 nitrided 60 HRc

ZZ

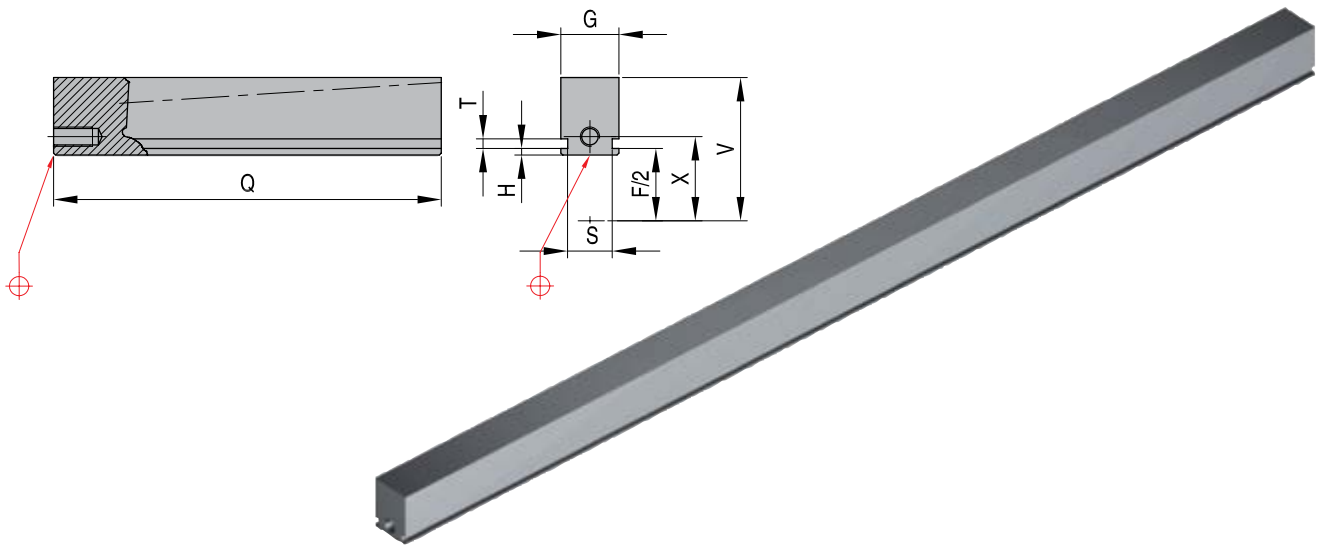


REF	A	F/2	G	H	Q	Modulus	S	T	V	X	I
ZZ 25-600/1,0	∅ 25	23	20	3,4	600	1,00	13	5	36,2	27	M8x20
ZZ 25-800/1,0	∅ 25	23	20	3,4	800	1,00	13	5	36,2	27	M8x20
ZZ 25-600/1,25	∅ 25	23	20	3,4	600	1,25	13	5	36,2	27	M8x20
ZZ 25-800/1,25	∅ 25	23	20	3,4	800	1,25	13	5	36,2	27	M8x20
ZZ 40-600/1,5	∅ 40	28	30	3,4	600	1,5	23	5	43,0	34	M10x30
ZZ 40-800/1,5	∅ 40	28	30	3,4	800	1,5	23	5	43,0	34	M10x30
ZZ 63-800/2,0	∅ 63	48	50	7,9	800	2,00	40	7	68,0	55	M12x40
ZZ 63-900/2,0	∅ 63	48	50	7,9	900	2,00	40	7	68,0	55	M12x40

ZL

Gibs

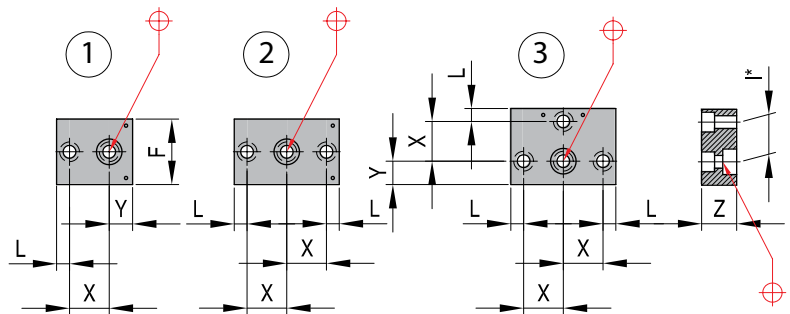
Mat.: 1.7225 ~30 HRc



REF	A	F/2	G	H	Q	S	T	V	X	I
ZL 25-800	Ø 25	23	20	3,35	800	13	5	49,5	27	M8x20
ZL 40-800	Ø 40	28	30	3,50	800	23	5	64,5	34	M10x30
ZL 63-900	Ø 63	48	50	8,00	900	40	7	100,0	55	M12x40

ZB

Flanges



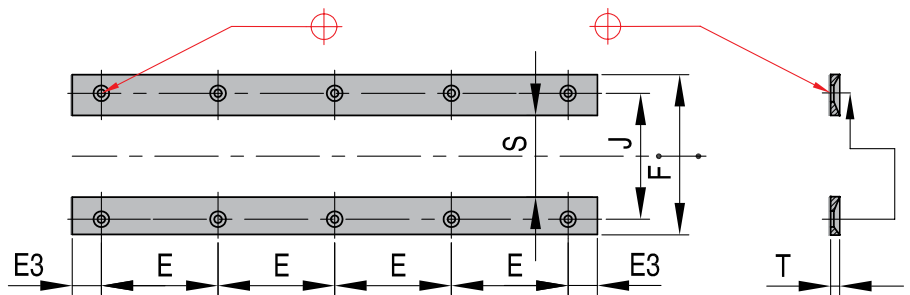
* I is the thread dimension

REF	A	X	Y	F	Z	L	I: for
ZB 25-1	Ø 25	27	12,5	46	20	10,5	2xM8x20
ZB 25-2							3xM8x20
ZB 25-3							4xM8x20
ZB 40-1	Ø 40	34	20,0	56	30	11,0	2xM10x30
ZB 40-2							3xM10x30
ZB 40-3							4xM10x30
ZB 63-1	Ø 63	55	30,0	96	40	15,0	1xM12x40+1
ZB 63-2							M16x40
ZB 63-3							2xM12x40+1
							M16x40
							3xM12x40+1
							M16x40

Guideways

Order per 2 pieces

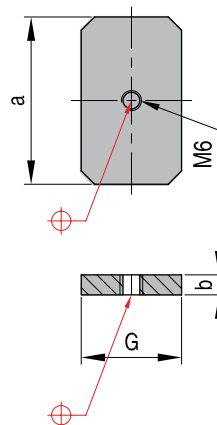
ZF



REF	A	C	E	E3	F	J	S	T	II
ZF 25-300	Ø 25	300	3x80	46	46	34	14	4	SM 5x10
ZF 25-400	Ø 25	400	3x80	96	46	34	14	4	SM 5x10
ZF 25-500	Ø 25	500	5x80	66	46	34	14	4	SM 5x10
ZF 40-300	Ø 40	300	3x80	46	56	44	24	4	SM 5x10
ZF 40-400	Ø 40	400	3x80	96	56	44	24	4	SM 5x10
ZF 40-500	Ø 40	500	5x80	66	56	44	24	4	SM 5x10
ZF 63-400	Ø 63	400	3x80	104	96	70	42	6	SM 8x16
ZF 63-500	Ø 63	500	5x80	74	96	70	42	6	SM 8x16

Locating plates

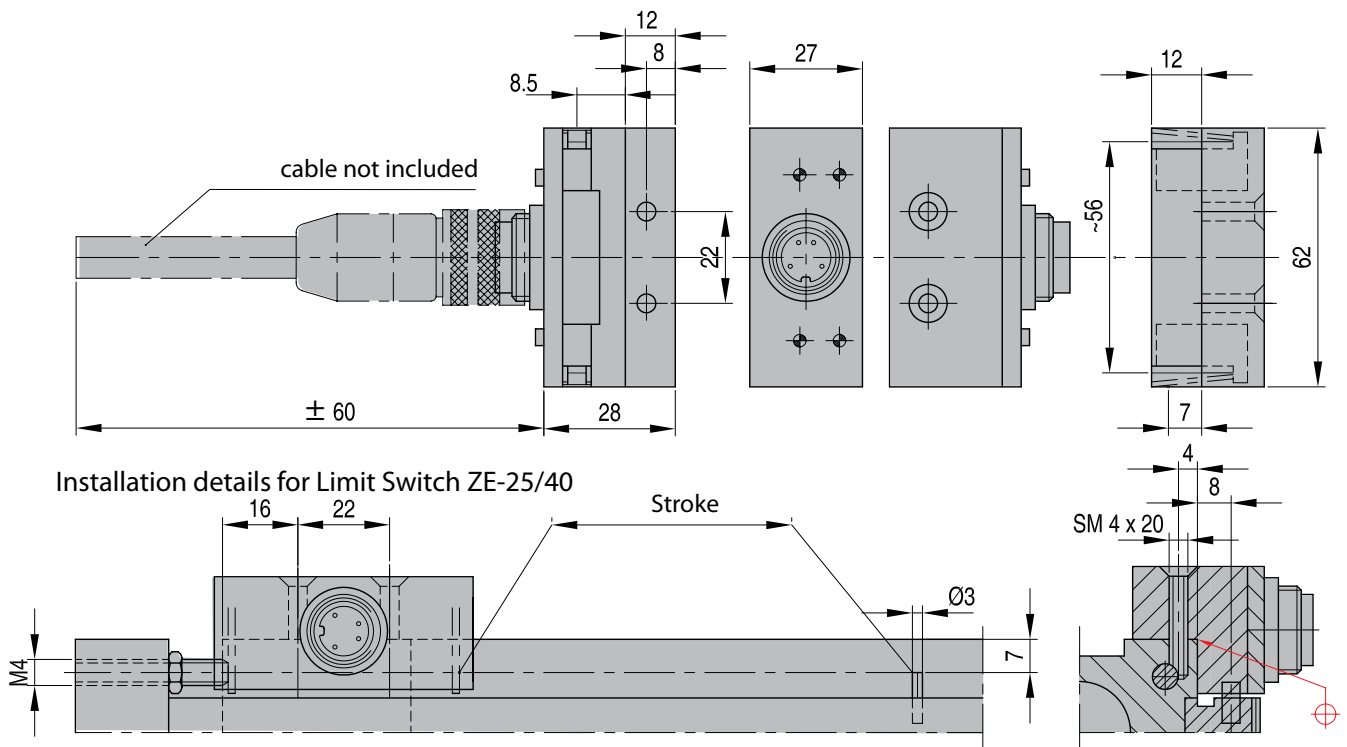
ZS



REF	A	G	a	b
ZS 25	Ø 25	20	40	6
ZS 40	Ø 40	30	50	6
ZS 63	Ø 63	50	80	15

ZE

Limit switches

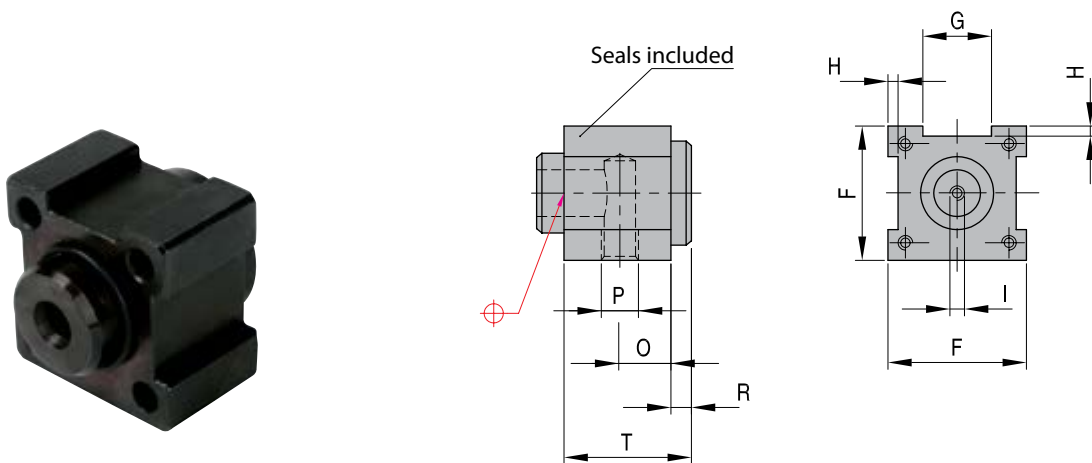


For gear information please contact **D-M-E**

REF	Includes			
ZE 25/40	(2x) SM4x20	(1x) DP3x16	(1x) GS4x20	(1x) M4 DIN 934

ZHI

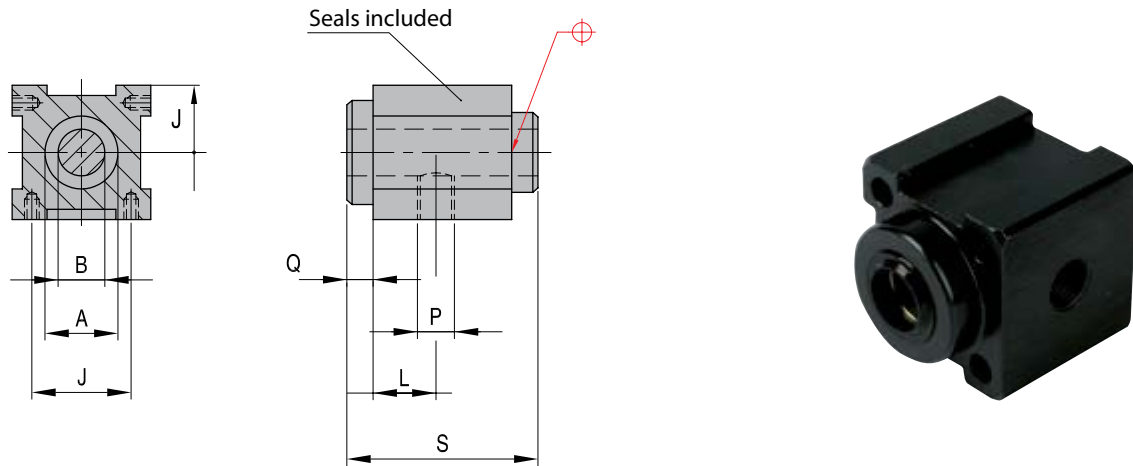
Spare part: end cap - in



REF	O	R	P	T
ZHI 25	11	6	R 1/4"	35
ZHI 40	13	8	R 1/2"	35
ZHI 63	16	12	R 3/4"	47

Spare part: end cap - out

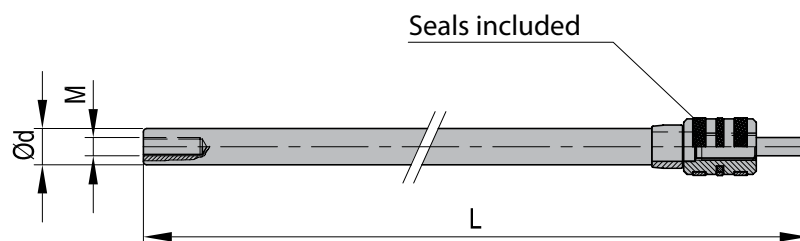
ZHU



REF	L	Q	P	S
ZHU 25	21,5	9	R 1/4"	52
ZHU 40	34	9	R 1/2"	62
ZHU 63	25	22	R 3/4"	74

Spare part: rod & pist

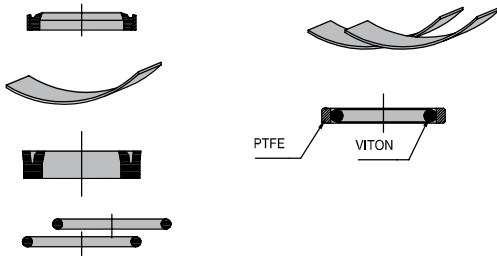
ZTP



REF	Ø d	M	L
ZTP 2530 ZG 25300	16	8	426
ZTP 2540 ZG 25400	16	8	526
ZTP 2550 ZG 25500	16	8	626
ZTP 4030 ZG 40300	22	10	442
ZTP 4040 ZG 40400	22	10	542
ZTP 4050 ZG 40500	22	10	642
ZTP 6340 ZG 63400	36	16	575
ZTP 6350 ZG 63500	36	16	675

ZD

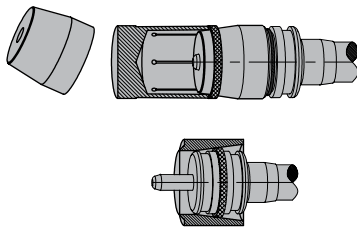
Spare part: seals (kit)



REF
ZD 25
ZD 40
ZD 63

ZDR

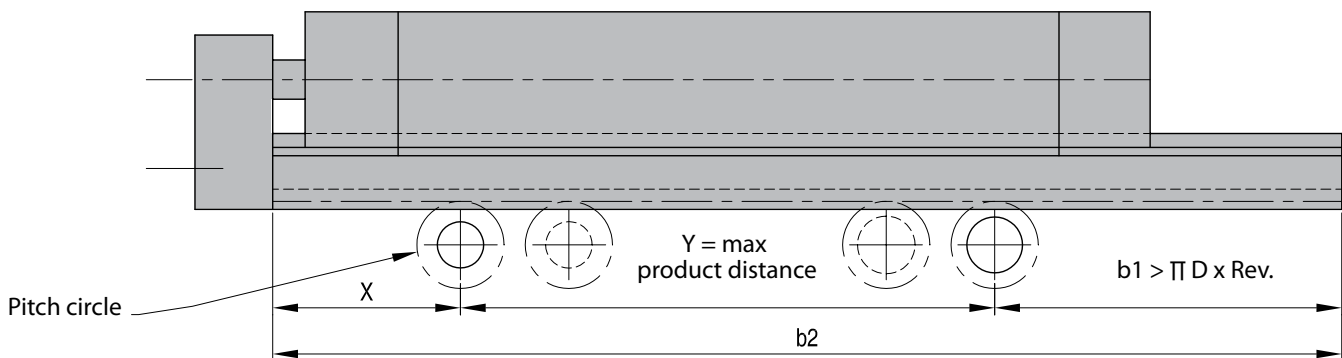
Spare part: seals (kit) + mounting tools



REF
ZDR 0025
ZDR 0040
ZDR 0063

Info

Calculation Example



A. Stroke

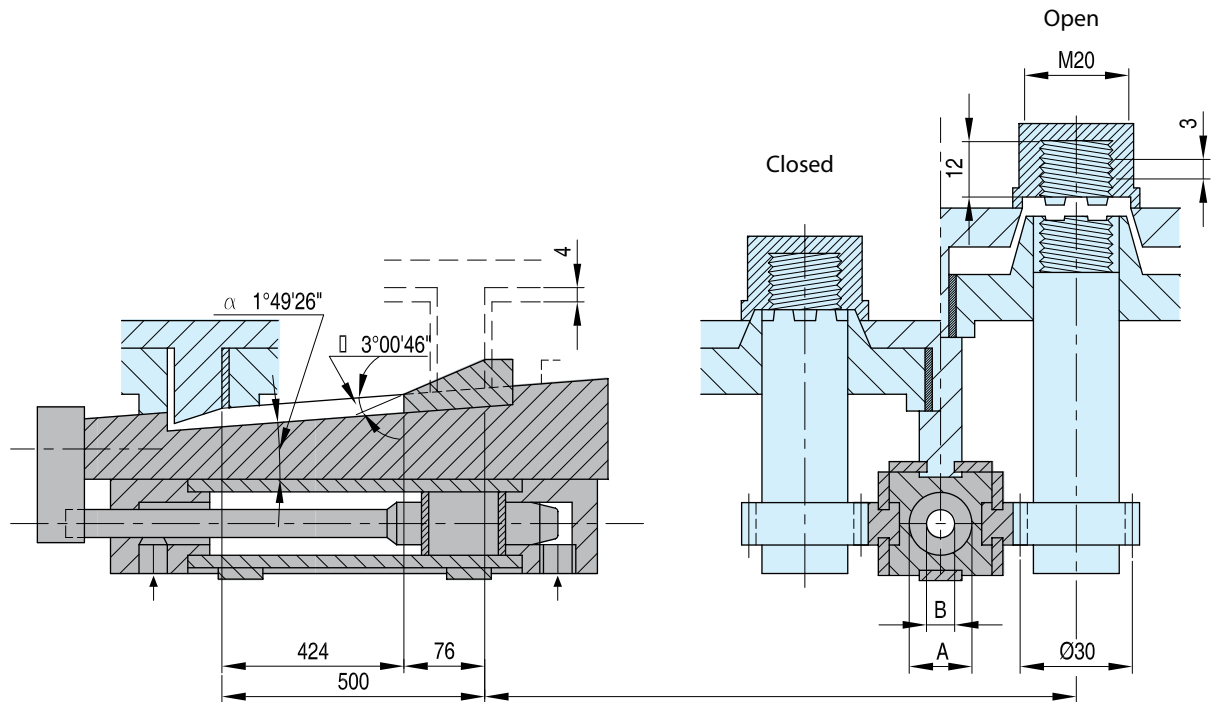
a. Required revolutions (thread core) = thread height/thread lead + safety (min 0,5 t) = 12 mm/3 mm + 0,5 rev. = 4,5 rev.

b. 1. Required stroke (mm) = pitch circle x π x rev. = 30 mm x 3,14 x 4,5 rev. = 424 mm If required stroke is too long, a cog wheel transmission gear should be used 2. Length of rack b2 = X + Y + b1

c. Stripper stroke (mm) = cylinder stroke - required rack stroke = 500 mm - 424 mm = 76 mm

Calculation Example

Info

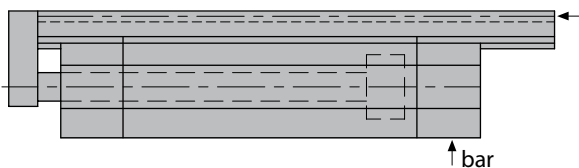


B. Control cam calculation

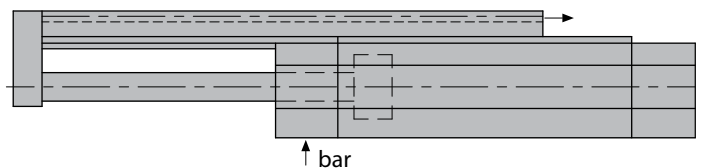
d. Moving cam (α) $\tan \alpha = \text{lead}/\text{dia. pitch circle} \times \pi = 3 \text{ mm}/30 \text{ mm} \times 3,14 = 0,031847$; $\alpha = 1^\circ 49' 26''$
 $\alpha = 1^\circ 49' 26''$

e. Stripper cam (β) $\tan \beta = \text{Stripper height}/\text{Stripper stroke} = 4 \text{ mm}/76 \text{ mm} = 0,0526315$; $\beta = 3^\circ 00' 46''$

Workingstroke



Return back



C. Unscrewing force

These figures should only be used as a guideline as many other factors will affect the calculation. (Material, variation of dimensions, material shrinkage, core surface area, temperature, lubricant, etc...)

f. Residual pressure (bar) 1/100 of max. injection pressure = 1000 bar/100 \approx 10 bar \approx 1 N/mm²

g. Effective core surface area (mm²) = thread dia. \times π \times thread height \times 2* = 20 mm \times 3,14 \times 12 mm \times 2 = 1507 mm²

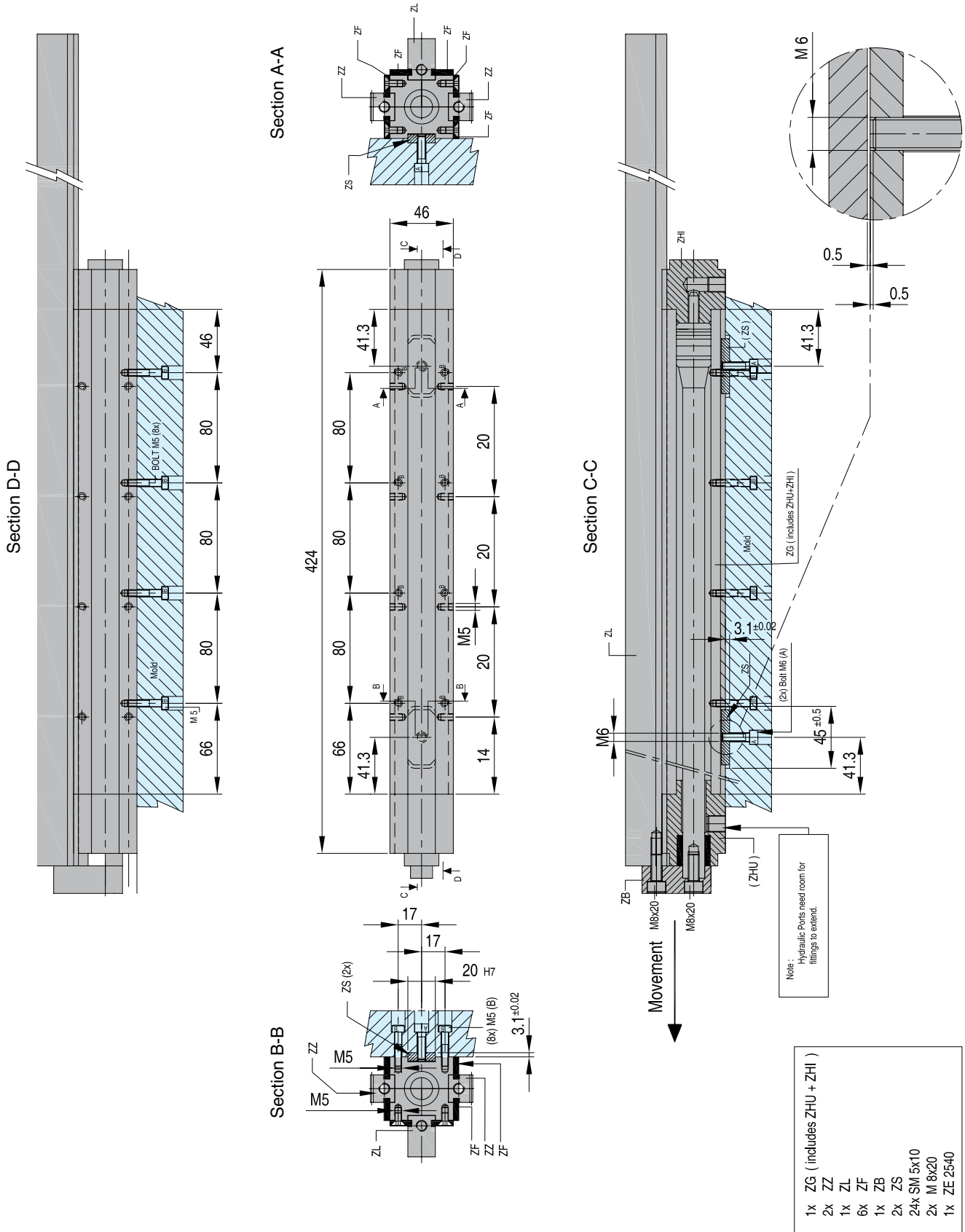
* - 2 x height for developed surface (^^^^) - frontal area is neglected

h. Unscrewing torque (Nmm) = Holding pressure \times surface \times thread radius = 1 N/mm² \times 1507 mm² \times 10 mm = 15070 Nmm

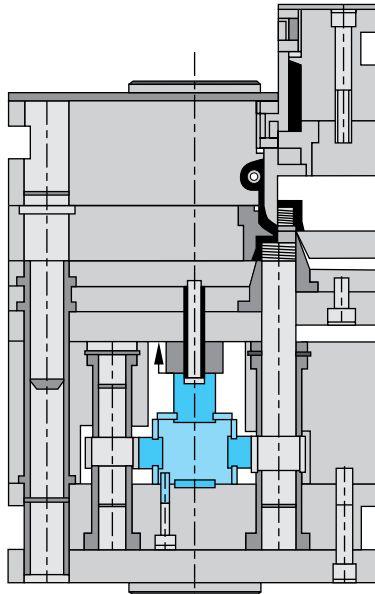
i. Unscrewing force rack (kN) = unscrewing torque/radius pitch circle \times number of cores = 15070 Nmm/15 mm \times 4 = 4019 N = 4,02 kN

k. Hydraulic force (kN) = Unscrewing force \times 1,5 = 4,02 kN \times 1,5 = 6,03 kN (50 % safety, hence \times 1,5)

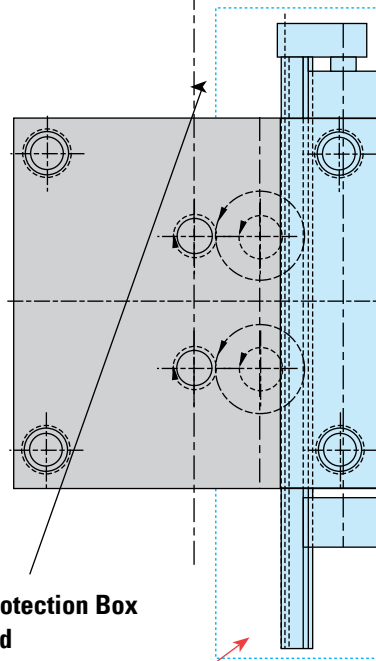
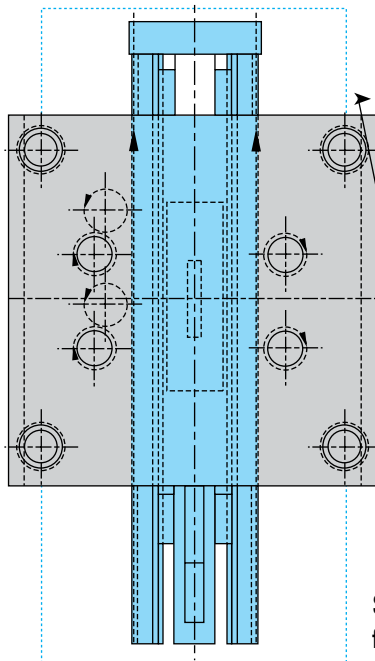
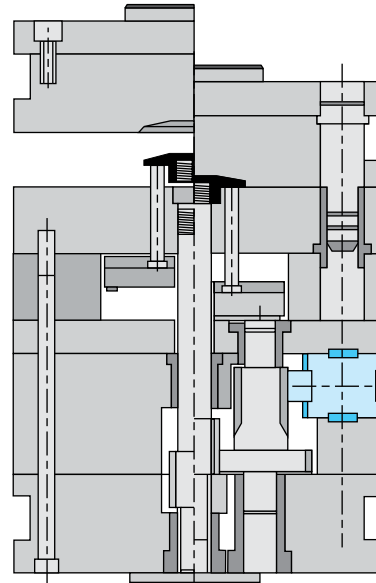
Installation Instructions



Application A
Without guiding
thread with cam



Application B
With guiding
thread

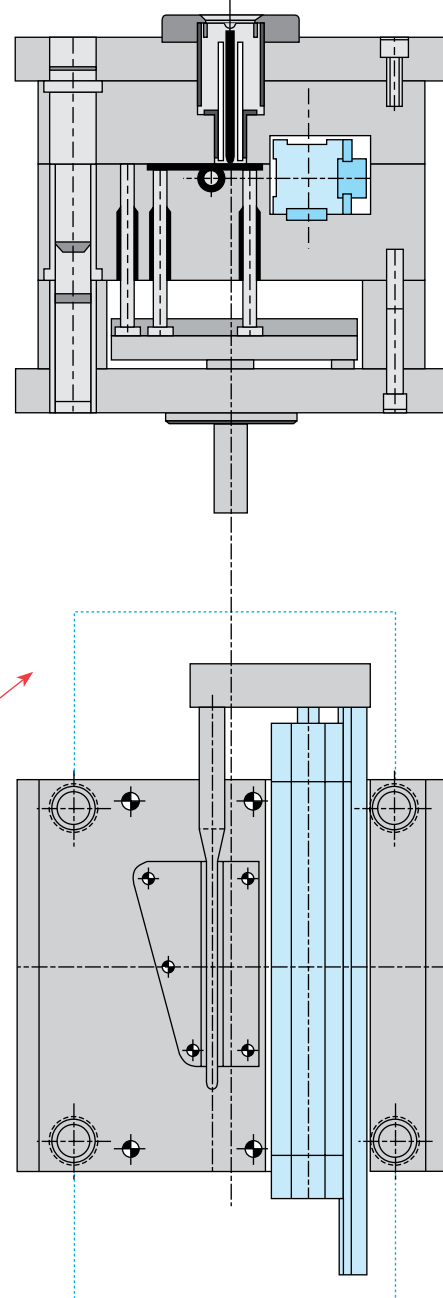
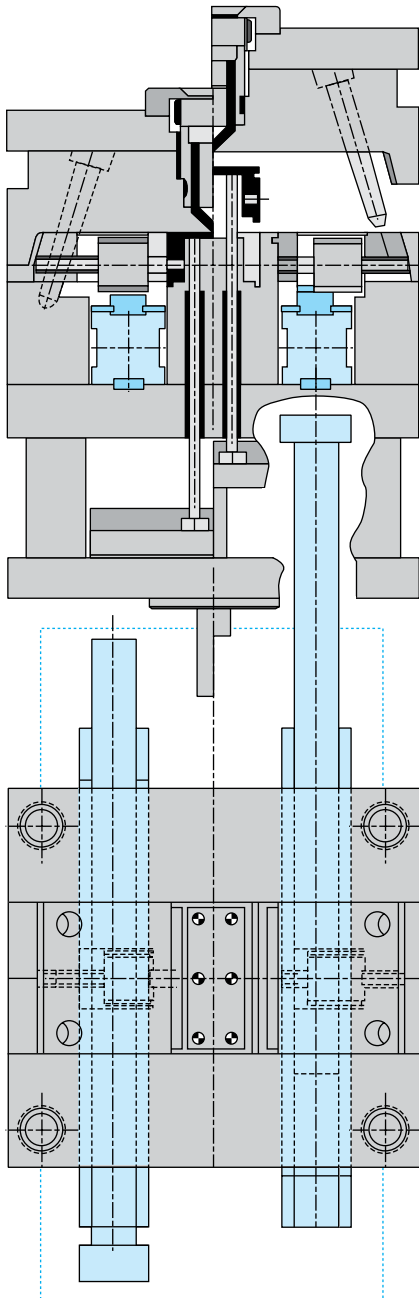


Safety Protection Box
fabricated
by moldmaker
completely covers
full movement of
Unscrewing Device.

Applications

Application C With guiding thread

Application D Long guiding cores



**Safety Protection Box
fabricated
by moldmaker
completely covers
full movement of
Unscrewing Device.**

Safety Considerations:

Moldmaker must fabricate boxes over the rack areas which move to protect against injury to personnel. Moldmaker must also use safety interlocks to prevent movement of unscrewing device if these protection boxes are removed for any reason. Also, sheet metal should be used to cover areas where the gears are, to prevent damage from loose debris falling between the gears and racks.