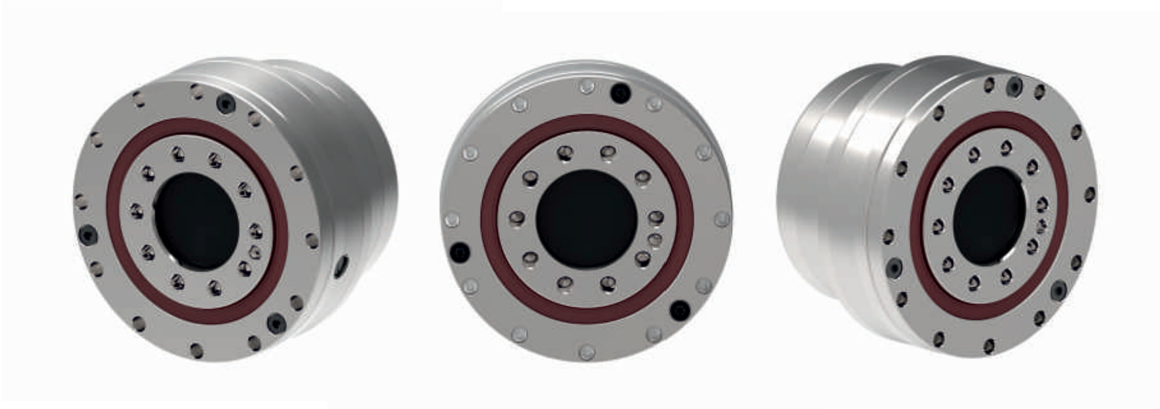
NEW SIZES & PRODUCTS 2023
(reduction gears)

SPINEA
BY TIMKEN

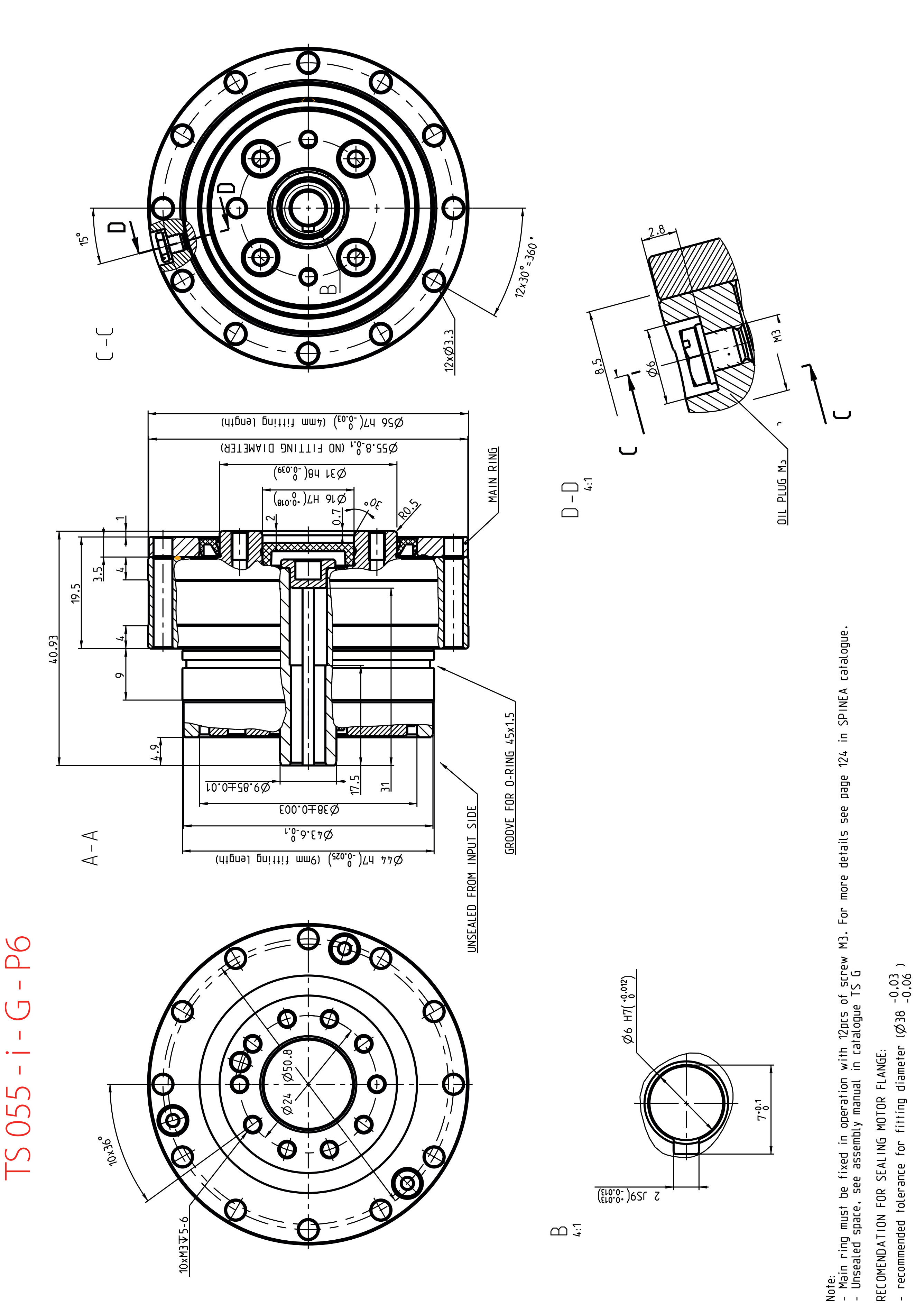
TS G - series



G series rating table

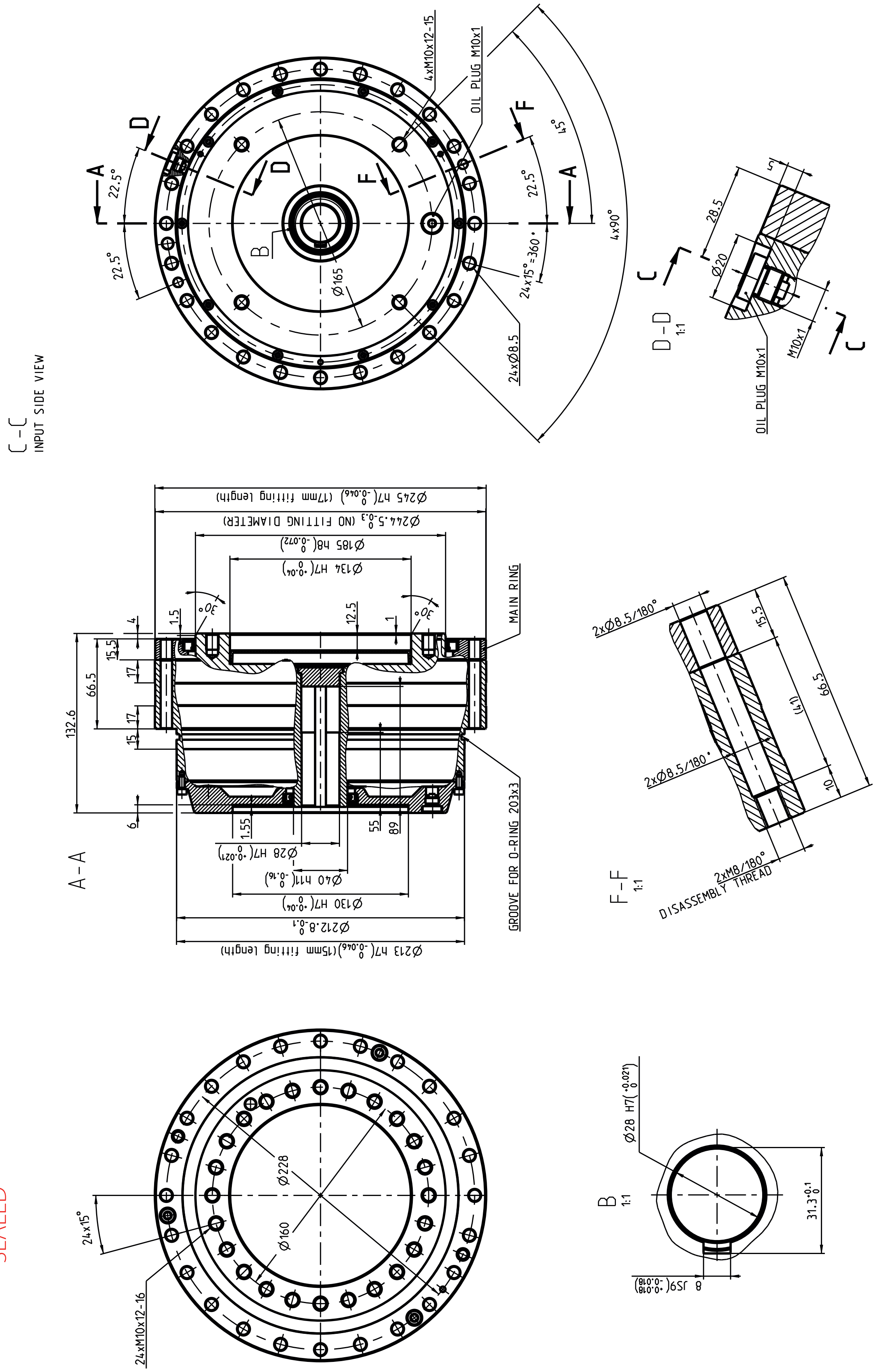
Size	Reduction ratio	Rated output torque	Max. acceleration / deceleration torque	Maximum permissible torque at emergency / E-stop	Rated input speed	Maximum input speed	Lost motion	Hysteresis	Angular Transmission Error	Weight
	i	T_R [Nm]	T_{acc} [Nm]	T_{em} [Nm]	n_R [rpm]	n_{max} [rpm]	LM [arcmin]	H [arcmin]	ATE [arcsec]	[kg]
TS 055 G	35 77	17	34	59,5	2 000		< 1	< 1		0,46
TS 245 G	51 87 121 155	2 200	4 500	11 000	910		< 1	< 1		29,9
TS 285 G	55 125 191	3 030	7575	15 150	1 500		< 1	< 1		49,7

TS 055 - i - G - P6


TS 055 - i - G - P6
C-C
15°
12x30°=360°
12xØ3.3
A-A
Ø56 h7 (4mm fitting length)
Ø55.8 (NO FITTING DIAMETER)
Ø31 h8
Ø16 H7
30°
R0.5
MAIN RING
GROOVE FOR O-RING 45x1.5
UNSEALED FROM INPUT SIDE
40.93
19.5
3.5
Ø9.85∓0.01
Ø38∓0.003
Ø43.6
Ø44 h7 (9mm fitting length)
17.5
31
4.9
10x36°
10xM3▽5-6
Ø50.8
Ø24
D-D
4:1
2.8
8.5
Ø6
M3
OIL PLUG M3
B
4:1
Ø6 H7
2 JS9
Note:
- Main ring must be fixed in operation with 12pcs of screw M3. For more details see page 124 in SPINEA catalogue.
- Unsealed space, see assembly manual in catalogue TS G
RECOMENDATION FOR SEALING MOTOR FLANGE:
- recommended tolerance for fitting diameter (Ø38 -0.03 -0.06)

TS 245 - i - G - P28

SEALED

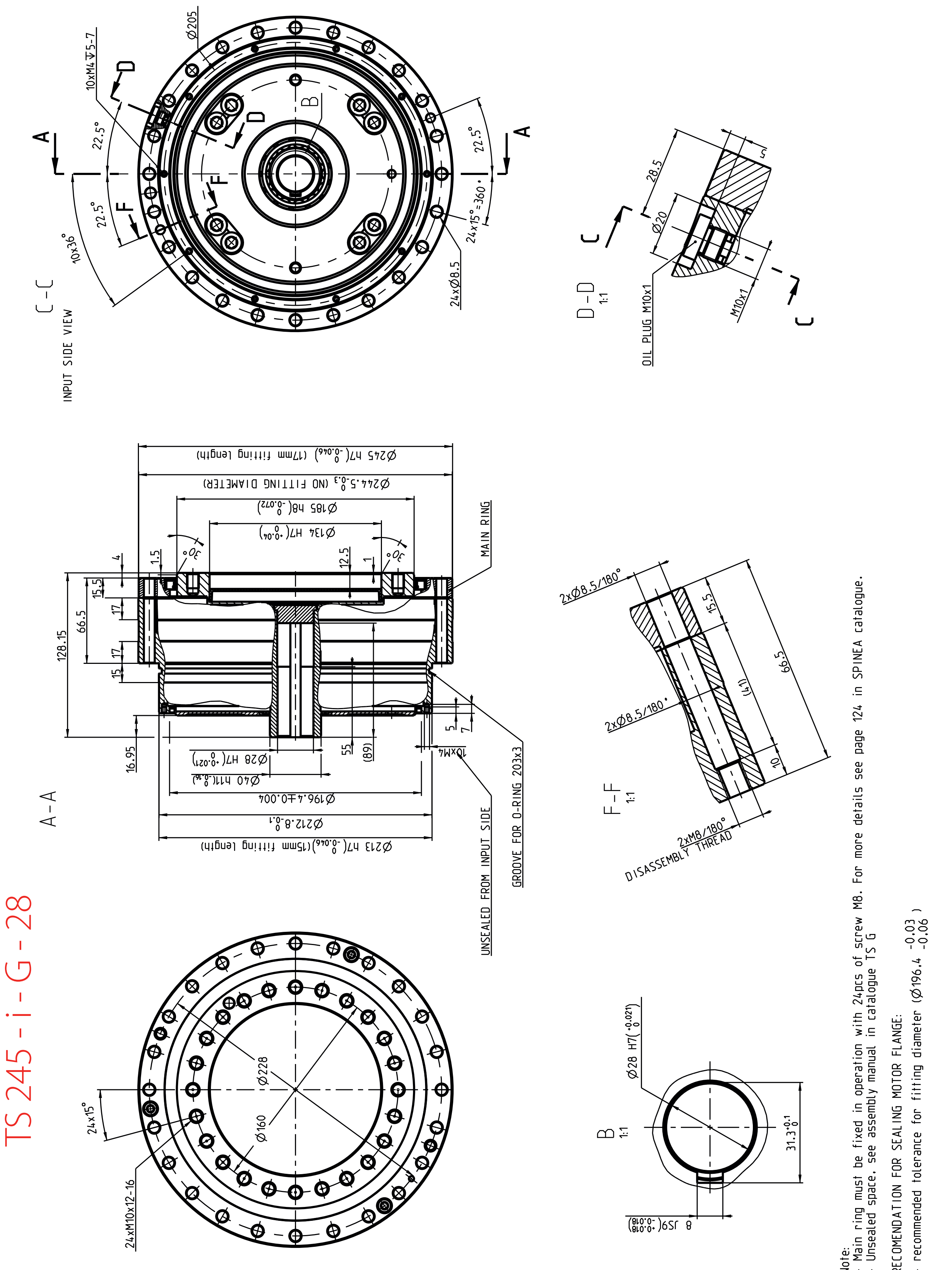


TS 245 - i - G - 28

SEALED

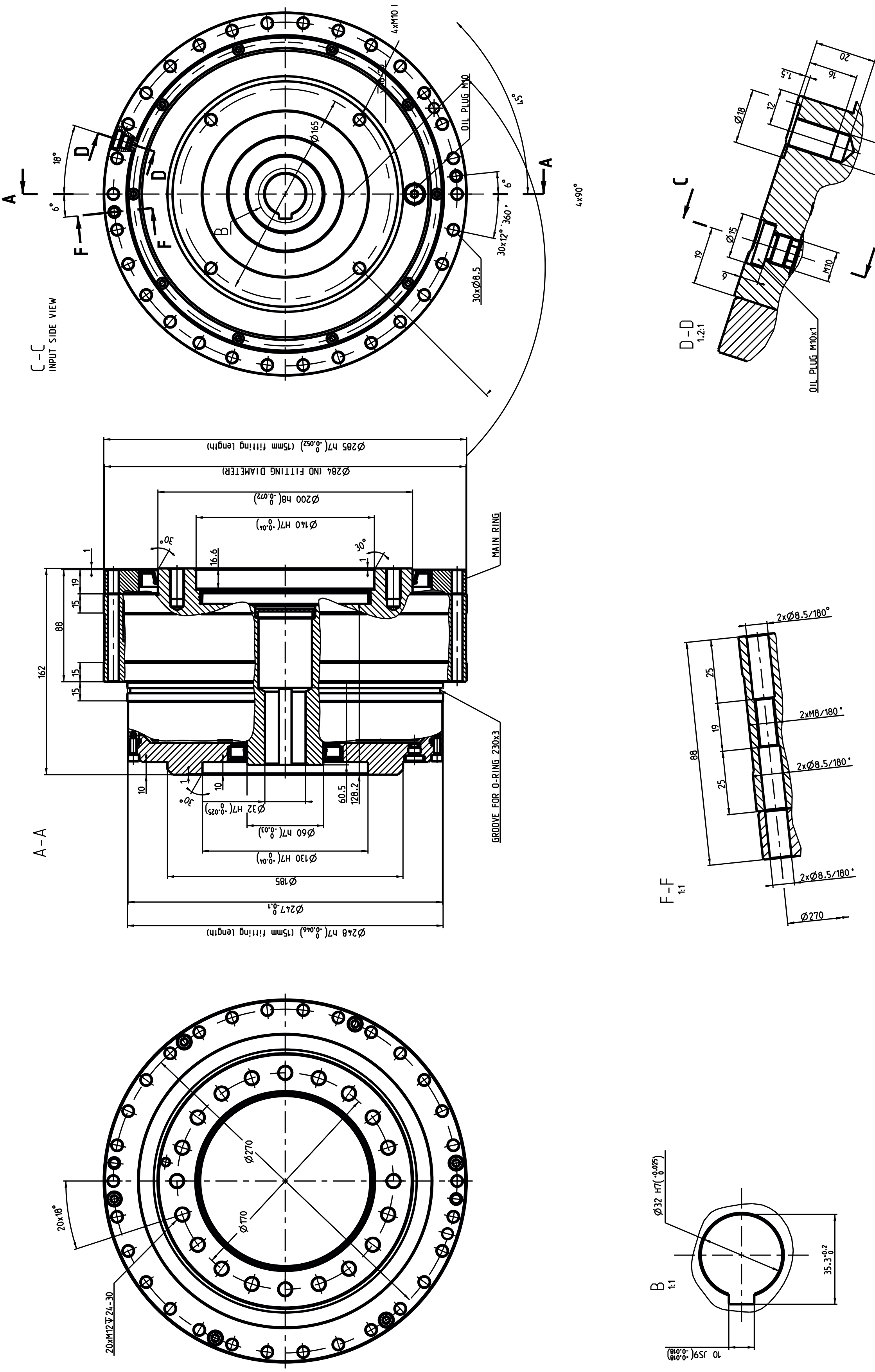
Note:
- Main ring must be fixed in operation with 24pcs of SCREW M8. For more details see page 124 in SPINEA catalogue.

TS 245 - i - G - P28


C - C
INPUT SIDE VIEW
A - A
D - D
1:1
F - F
1:1
B
1:1
TS 245 - i - G - 28
10xM4↧5-7
Ø205
22.5°
10x36°
24x15°=360°
24xØ8.5
OIL PLUG M10x1
M10x1
28.5
Ø20
Ø245 h7(-0.046 0) (17mm fitting length)
Ø244.5-0.3 0 (NO FITTING DIAMETER)
Ø185 h8(-0.072 0)
Ø134 H7(+0.04 0)
MAIN RING
128.15
66.5
16.95
Ø28 H7(+0.021 0)
Ø40 h11(-0.16 0)
Ø196.4∓0.004
Ø212.8-0.1 0
Ø213 h7(-0.046 0)(15mm fitting length)
10xM4
UNSEALED FROM INPUT SIDE
GROOVE FOR O-RING 203x3
2xØ8.5/180°
2xM8/180°
DISASSEMBLY THREAD
24x15°
24xM10x12-16
Ø228
Ø160
Ø28 H7(+0.021 0)
31.3+0.1 0
8 JS9(±0.018)
Note:
- Main ring must be fixed in operation with 24pcs of screw M8. For more details see page 124 in SPINEA catalogue.
- Unsealed space. see assembly manual in catalogue TS G
RECOMENDATION FOR SEALING MOTOR FLANGE:
- recommended tolerance for fitting diameter (Ø196.4 -0.03 -0.06)

TS 285 - i - G - P32

SEALED

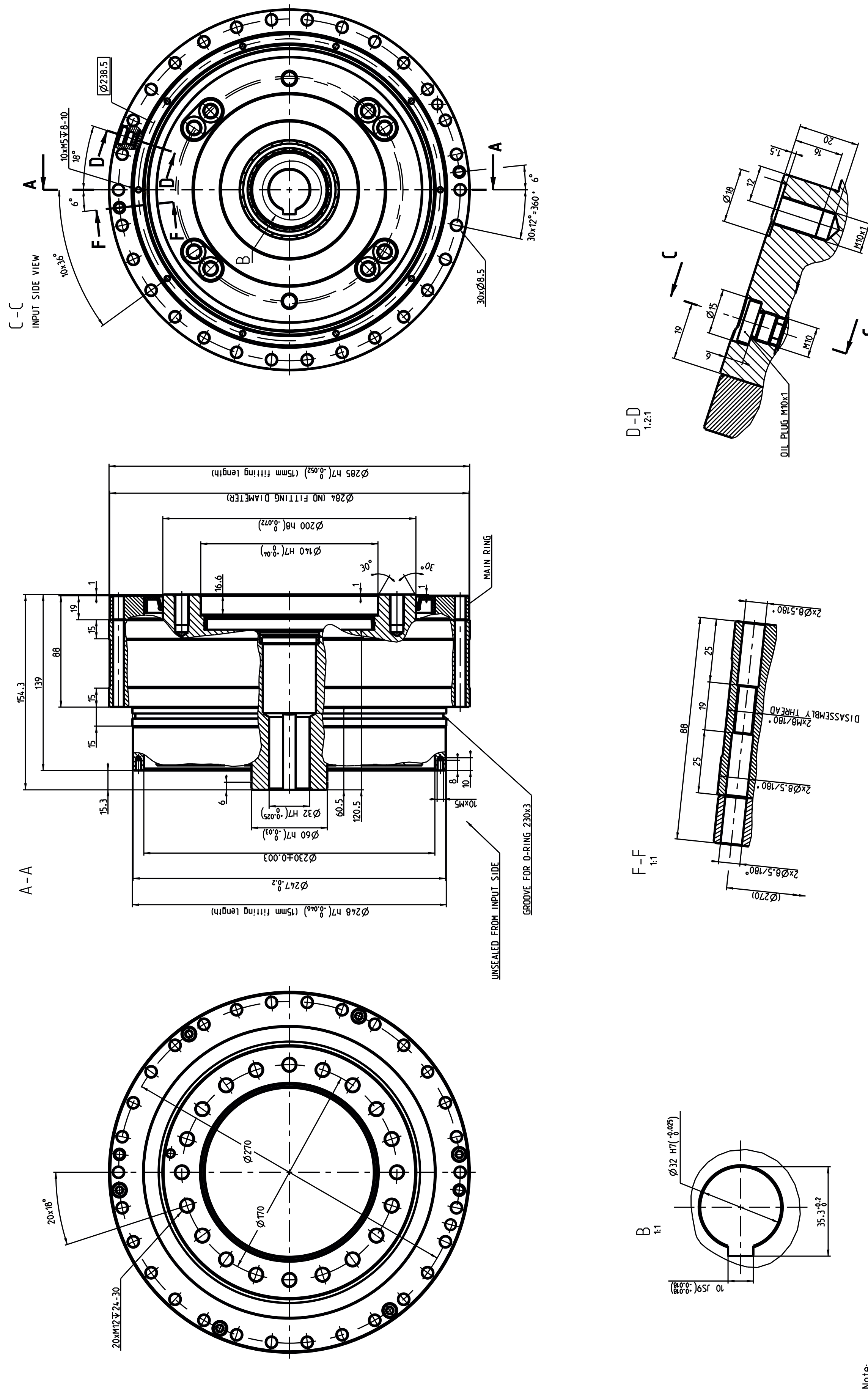


TS 285 - i - G - P32

SEALED

Note:
- Main ring must be fixed in operation with 30pcs of SCREW M8. For more details see page 124 in SPINEA catalogue.

TS 285 - i - G - P32



TS 285 - i - G - P32

Note:
- Main ring must be fixed in operation with 30pcs of screw M8. For more details see page 124 in SPINEA catalogue.
- Unsealed space, see assembly manual in catalogue TS G

RECOMENDATION FOR SEALING MOTOR FLANGE:
- recommended tolerance for fitting diameter (Ø230 $^{-0.03}_{-0.06}$)

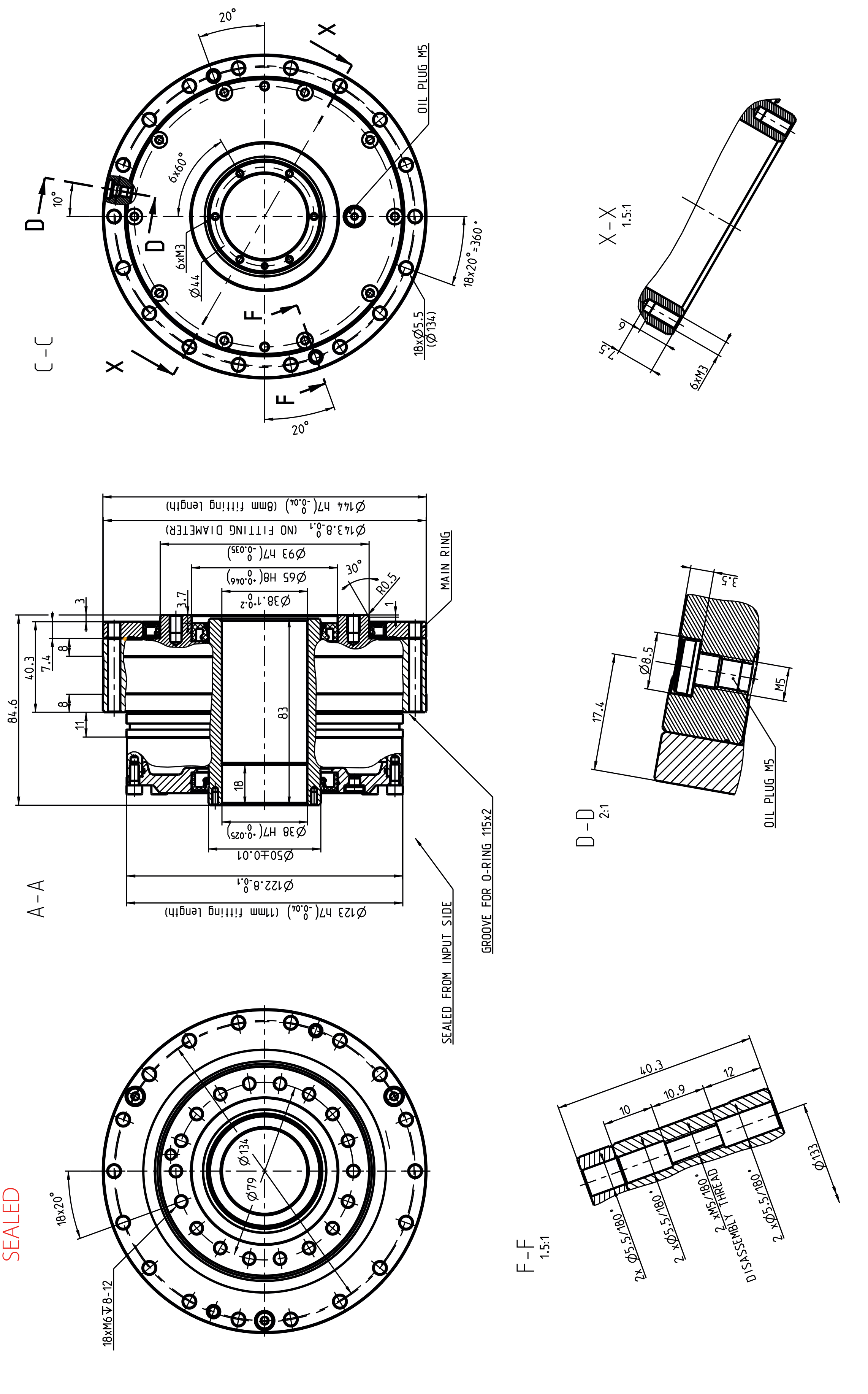
TS GH - series

GH series rating table

Size	Reduction ratio	Rated output torque	Max. acceleration / deceleration torque	Maximum permissible torque at emergency / E-stop	Rated input speed	Maximum input speed	Lost motion	Hysteresis	Angular Transmission Error	Weight
	i	T_R [Nm]	T_{acc} [Nm]	T_{em} [Nm]	n_R [rpm]	n_{max} [rpm]	LM [arcmin]	H [arcmin]	ATE [arcsec]	[kg]
TS 145 GH	53 69 115	211	528	1 055	2 000		< 1	< 1		6,1

TS 145 - i - GH - H38

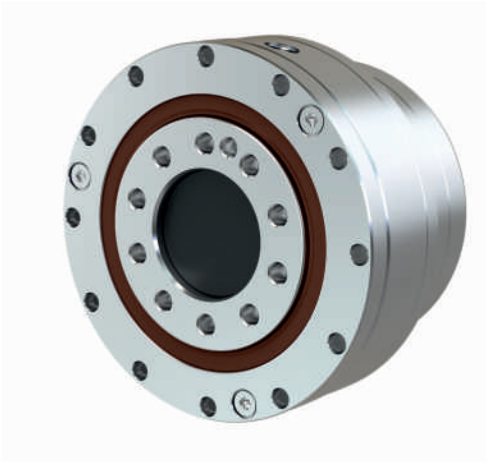
SEALED



TS 145 - i - GH - H38
SEALED

Note:
- Main ring must be fixed in operation with 18pcs of screw M5. For more details see page 124 in SPINEA catalogue.

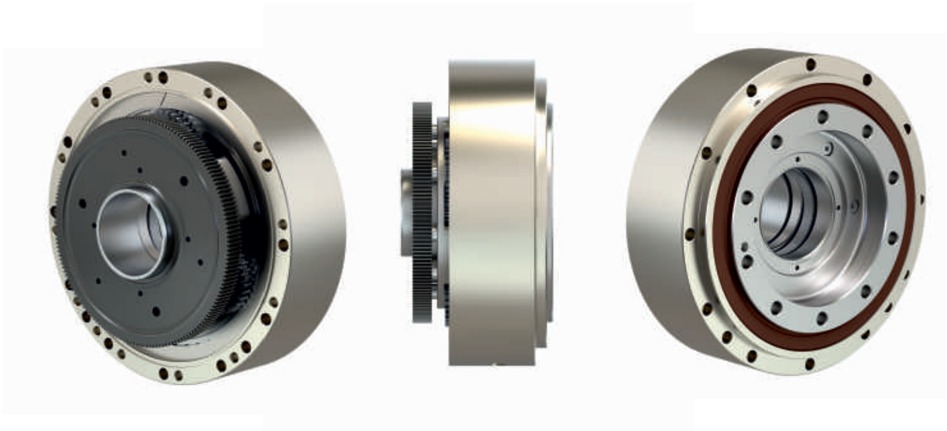
TS GXXL - series



GXXL series rating table

Size	Reduction ratio	Rated output torque	Max. acceleration / deceleration torque	Maximum permissible torque at emergency / E-stop	Rated input speed	Maximum input speed	Lost motion	Hysteresis	Angular Transmission Error	Weight
	i	T_R [Nm]	T_{acc} [Nm]	T_{em} [Nm]	n_R [rpm]	n_{max} [rpm]	LM [arcmin]	H [arcmin]	ATE [arcsec]	[kg]
TS 65 GXXL	21	38	76	190	2 000		< 1	< 1		1,05
TS 95 GXXL	21	85	170	425	2 000		< 1	< 1		2,83

W-350H



The W hollow shaft reduction gears represent a new transmission mechanism in SPINEA's portfolio. With the W series, we are able to provide a high-precision reduction gears for high-precision applications.

Main parameters of hollow shaft reduction gear W-350H

Size	Rated output torque [Nm]	Rated output speed [rpm]	Rated service life [hrs]	Max acceleration / deceleration torque [Nm]	Max. permissible torque at emergency / E-stop [Nm]	Max allowable output speed [1] [rpm]	Lost motion & Hysteresis lost [arcmin]	Speed ratio of basic reduction gear without pre-stage	Supported overall speed ratios with 1st & 2nd pre-stage wheels
W-350H	3 050	15	6 000	7 625	15 250	30	< 1	38,14	106,39; 158,02; 205,98; 243,52

Main parameters of hollow shaft reduction gear W-350H

Max reduction gear case diameter [mm]	Torsional stiffness 50-100% of rated torque. Typical value [Nm/arcmin]	Tilting stiffness Typical value [Nm/arcmin]	Angular transmission error [2] [arcsec]	Rated tilting moment (at zero radial force & axial force) [3] [Nm]	Momentary tilting moment (at zero radial force & axial force) [Nm]	Rated thrust force (at zero tilting moment & radial force) [3] [N]	Rated radial force (at zero tilting moment & axial force) [3] [N]	Central hole diameter [mm]	Weight of basic reduction gear / with pre-stage wheels [4] [kg]
ø 350	1 750 - 2 000	13 000 - 16 000	< 45	12 400	24 800	127 000	85 000	90	62,1 / 66,1

Notes

1) Max allowable output speed may be limited by heat depending on the operating rate.

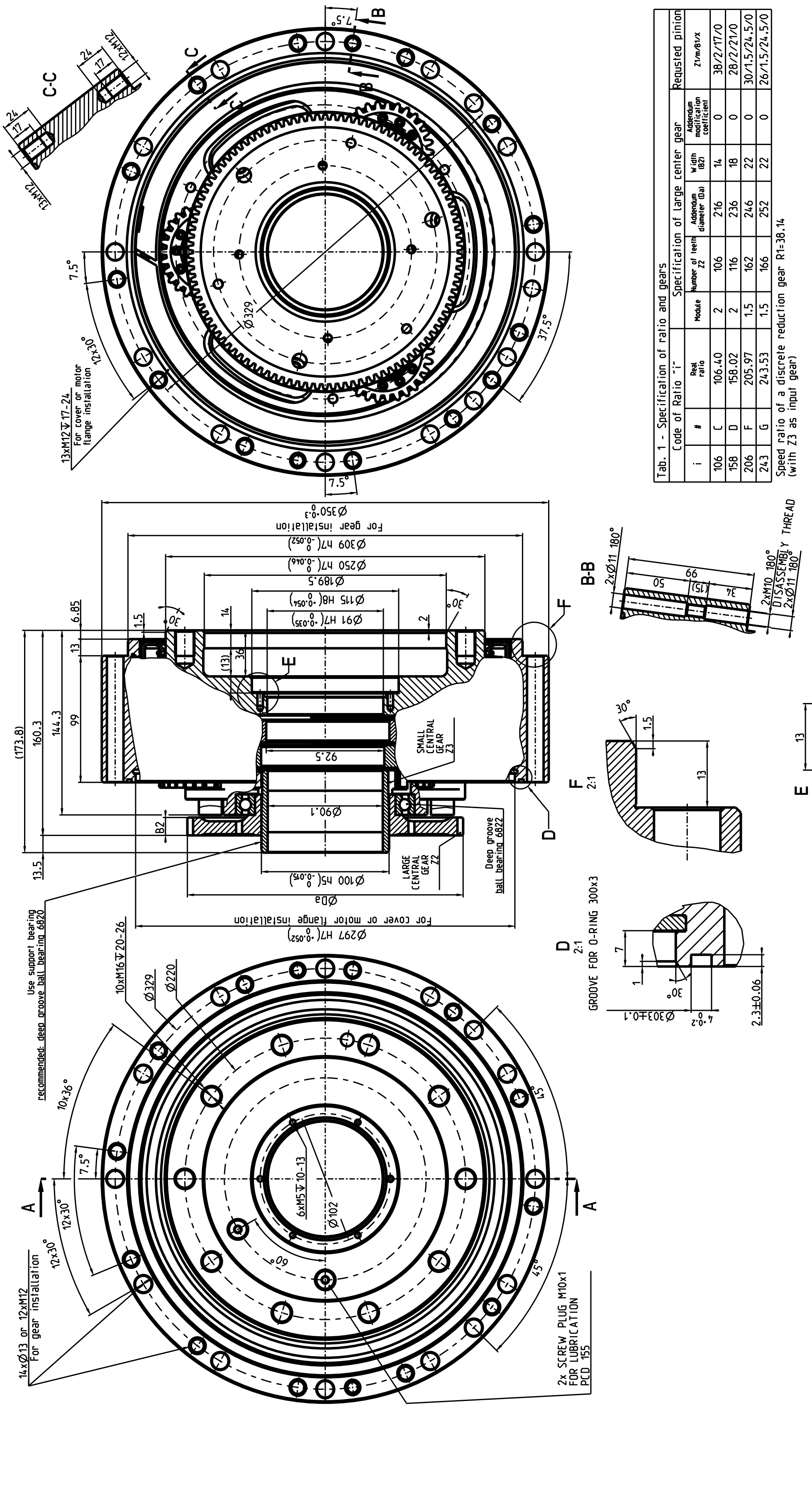
Make sure the surface temperature of the reduction gear does not exceed case temperature 65 °C during use.

2) The parameter depends on the version of the reduction gear ratio and lost motion

3) Load at output speed 15 rpm and L10=12 000 hrs

4) The parameter values are informative. Exact value depends on the specific version of the reduction gear

W-350H



Tab. 1 - Specification of ratio and gears

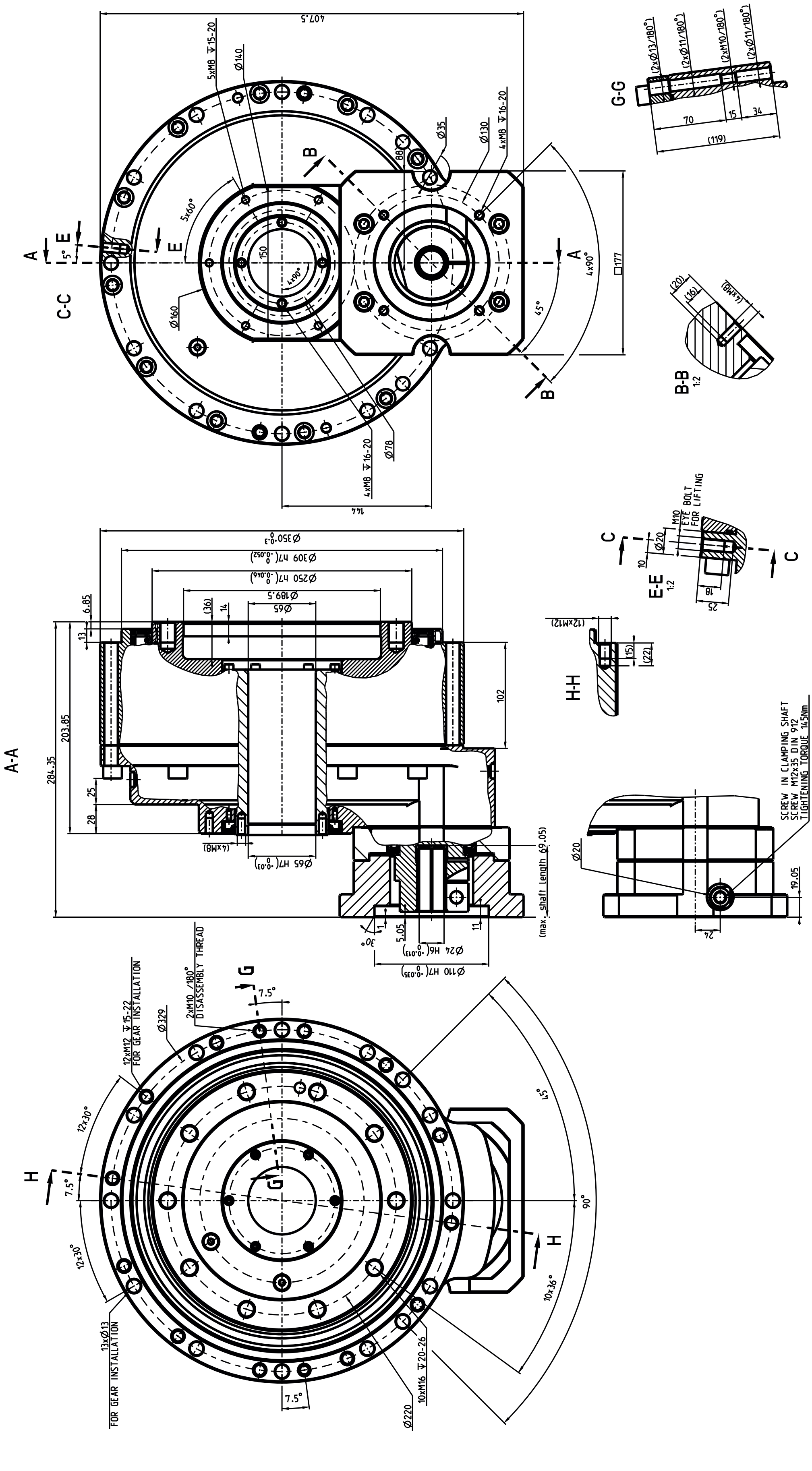
Code of Ratio "i"			Specification of large center gear					Requsted pinion
i	#	Real ratio	Module	Number of teeth Z2	Addendum diameter (Da)	Width (B2)	Addendum modification coefficient	Z1/m/B1/x
106	C	106.40	2	106	216	14	0	38/2/17/0
158	D	158.02	2	116	236	18	0	28/2/21/0
206	F	205.97	1.5	162	246	22	0	30/1.5/24.5/0
243	G	243.53	1.5	166	252	22	0	26/1.5/24.5/0

Speed ratio of a discrete reduction gear R1=38.14 (with Z3 as input gear)

W-350H

W-350HSS

SEALED

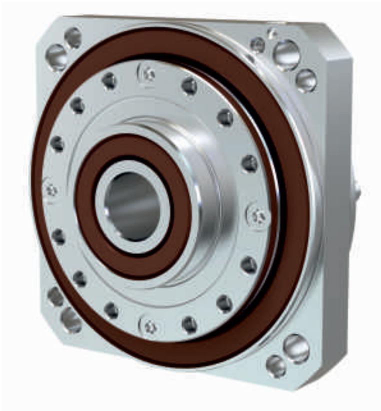


CODE OF RATIO "i"

i	#	REAL RATIO
106	C	106.39
158	D	158.02
206	F	205.98
243	G	243.52

W-350HSS

PCO - series



PCO is a new type of lightweight sealed small size hollow shaft reducer with high torsional and tilting capacity, self-locking at the output. The new concept enables wide range of gear ratios, in principle from i = 22, 55, 78, 105, 136, 171, 210, ... and more.

PCO series rating table

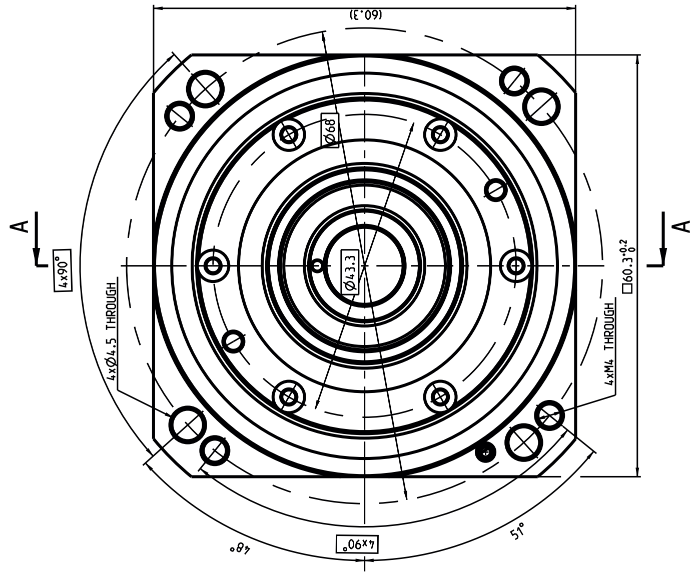
SIZE	REDUCTION RATIO	SHAFT INSIDE DIAMETER	RATED TORQUE	MAX. ACCELERATION/ DECELERATION TORQUE	PERMISSIBLE TORQUE AT EMERGENCY STOP	RATED INPUT SPEED	TORSIONAL STIFFNESS 50-100% T_R	TILTING STIFFNESS	RATED MOMENT [1)]	BASIC DYNAMIC RATED LOAD C_r	BASIC STATIC RATED LOAD C_{0r}	INPUT INERTIA	WEIGHT
	i	d (mm)	T_R(Nm)	T_{acc} (Nm)	T_{em} (Nm)	n_R (rpm)	k_t (Nm/arcmin)	M_t (Nm/arcmin)	M_c (Nm)	x 10^2(N)	x 10^2(N)	I (10^{-2}kgcm^2)	m (kg)
PCO 60	94,5	11	14,3	29	70	2 000	3	17	49	74	107	2,7	0,47

RIGHT TO CHANGE WITHOUT PRIOR NOTICE RESERVED
1) Load at output speed 15 rpm and L_{10} = 12 000Hrs

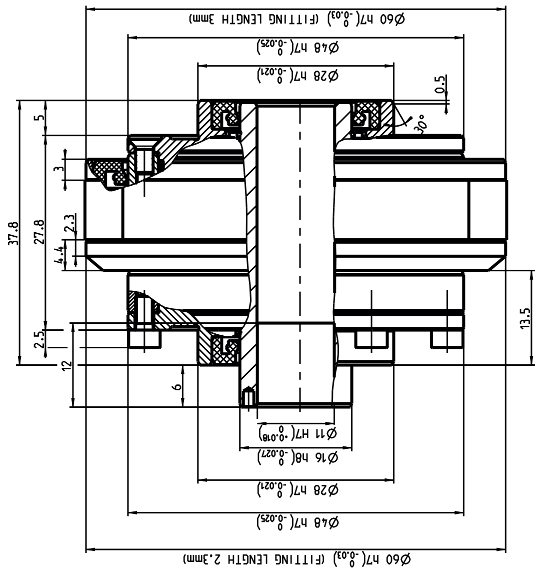
Main technical features

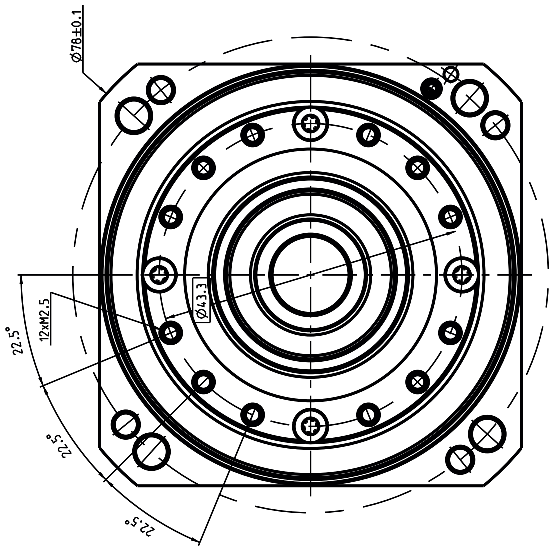
- Gearbox with cycloidal gearing
- Concept for small sizes < 80 mm
- Small dimensions - low weight
- The largest possible hole in the "hollow shaft" type of gear
- High torque and tilting capacity
- High reduction ratio (higher than current TwinSpin®)
- Low reduction ratio (lower than current TwinSpin®)

PCO 60



A-A





PCO 60