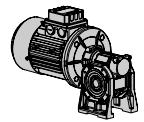




Motorvario

Worm geared motors





Versions

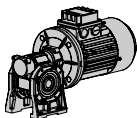
030 ÷ 105

SW ...T	SW ...PA	SW ...PB	SW ...PV	SW ...F
SW ...T	SW ...PA	SW ...PB	SW ...PV	SW ...F
PC+SW ...PA		SW ...T - SW ...PA		

Versions

110 ÷ 150

SW	SW ...F	ISW	ISW ...F
SW - SW		PC+SW	



Service Factor

The service factor (f.s.) depends on the operating conditions the reduction unit is subjected to.

The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

- type of load of the operated machine : **A - B - C**
- length of daily operating time: **hours/day (Δ)**
- start-up frequency: **starts/hour (*)**

TYPE OF LOAD: **A** - uniform $fa \leq 0.3$
 B - moderate shocks $fa \leq 3$
 C - heavy shocks $fa \leq 10$

$fa = Je/Jm$

- Je (kgm^2) moment of reduced external inertia at the drive-shaft
 - Jm (kgm^2) moment of inertia of motor
- If $fa > 10$ call our Technical Service.

A -Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

B -Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

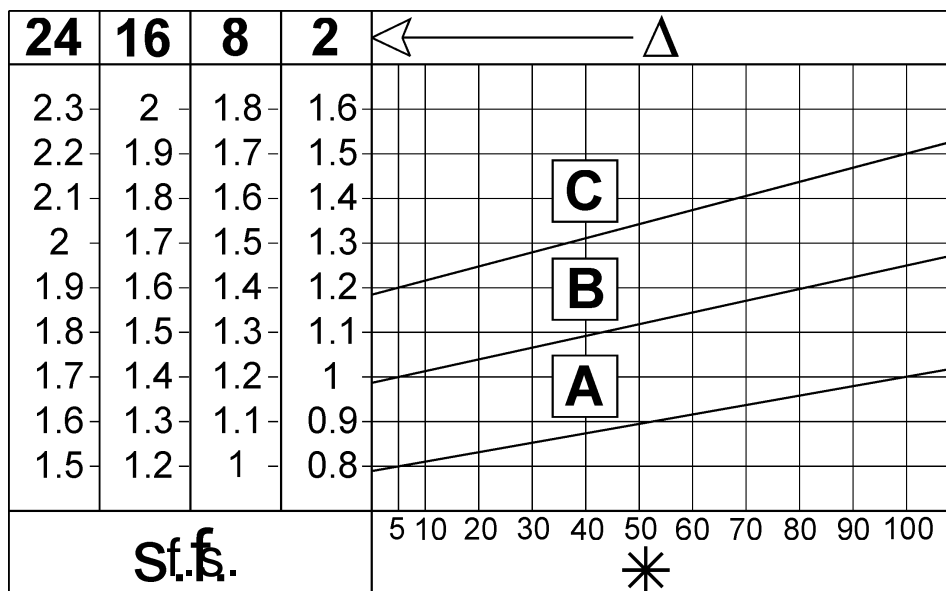
C -Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.

Installation

To install the reduction unit it is necessary to note the following recommendations:

- The mounting on the machine must be stable to avoid any vibration.
- Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
- In the case of particularly lengthy periods of storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
- Whenever possible, protect the reduction unit against solar radiation and bad weather.
- Ensure the motor cools correctly by assuring good passage of air from the fan side.
- In the case of ambient temperatures $< -5^{\circ}C$ or $> +40^{\circ}C$ call the Technical Service.

- The various parts (pulleys, gear wheels, couplings, shafts, etc.) must be mounted on the solid or hollow shafts using special threaded holes or other systems that anyhow ensure correct operation without risking damage to the bearings or external parts of the units. Lubricate the surfaces in contact to avoid seizure or oxidation.
- Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
- For units equipped with oil plugs, replace the closed plug used for shipping with the special breather plug.
- Check the correct level of the lubricant through the indicator, if there is one.
- Starting must take place gradually, without immediately applying the maximum load.
- When there are parts, objects or materials under the motor drive that can be damaged by even limited spillage of oil, special protection should be fitted.

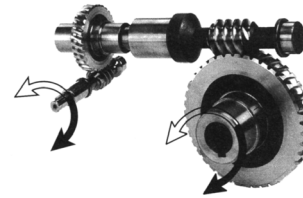
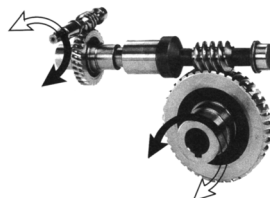
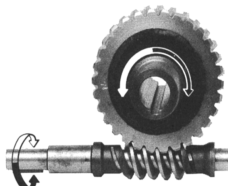
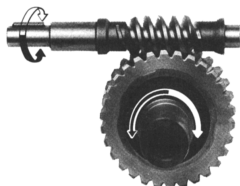


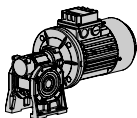
Direction of rotation

SW - ISW

SW+SW - ISW+SW

The helix is right-handed.





Critical applications

The performance given in the catalogue correspond to mounting position B3 or similar, ie. when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that highlight different critical situations for each size of reduction unit.

It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service:

- As a speed increasing.
- Use in services that could be hazardous for people if the reduction unit fails.
- Applications with especially high inertia.
- Use as a lifting winch.
- Applications with high dynamic strain on the case of the reduction unit.

- In places with T° under -5°C or over 40°C.
- Use in chemically aggressive environments.
- Use in a salty environment.
- Mounting positions not envisaged in the catalogue.
- Use in radioactive environments.
- Use in environments pressures other than atmospheric pressure.

Avoid applications where even partial immersion of the reduction unit is required.

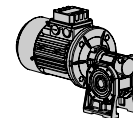
The maximum torque (*) that the gear reducer can support must not exceed two times the nominal torque (f.s.=1) stated in the performance tables.

(*) intended for momentary overloads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

	030	040	050	063	075	090	110	130	150
V5: 1500 < n1 < 3000	-	-	-	-	B	B	B	B	B
n1 > 3000	B	B	B	B	A	A	A	A	A
V6	B	B	B	B	B	B	B	B	B

A Applicazione sconsigliata
Application not recommended
nicht empfohlene Anwendung
Application non conseillée
Aplicación desaconsejada

B Verificare l'applicazione e/o contattare il ns. servizio tecnico
Check the application and/or call our technical service
Anwendung überprüfen und/oder mit unserem Kundendienst Kontakt aufnehmen
Verifier l'application et/ou contacter notre s.ce technique
Controlar la aplicación y/o ponerse en contacto con nuestro servicio técnico



Lubrication

In cases of ambient temperatures not envisaged in the table, call our Technical Service.

In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special properties.

For operating ranges with temperatures under 0°C it is necessary to consider the following:

- 1- The motors need to be suitable for operation at the envisaged ambient temperature.
- 2- The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
- 3- In the case of reduction units with a cast-iron case, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.
- 4- During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works.

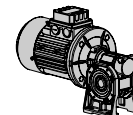
- The reduction units size 030-040-050-063-075-090-105 are supplied complete with lubricant for life, synthetic oil, AGIP TELIUM VSF and can therefore be mounted in any position envisaged in the catalogue. The only exceptions are 090 and 105 in pos. V5/V6 for which you should call our Technical Service to assess the conditions of use.
- The reduction units size 110-130 and 150 are supplied complete with lubricant, mineral oil, AGIP BLASIA 460.
- For sizes 110-130 and 150 it is necessary to specify the position, otherwise the reduction units are supplied with the quantity of oil relating to pos. B3.
- Only reduction units 110-130 and 150 are fitted with breather, level and oil drainage plugs. It is necessary, after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.
- The pre-stage helical modules are supplied complete with life-long lubricant, synthetic oil, AGIP TELIUM VSF, and can therefore be mounted in all the positions. Lubrication is separated from that of the worm reduction unit.

Specifications of lubricants

	T°C - ISO...	AGIP	SHELL	ESSO	MOBIL	CASTROL	BP	
SW 030÷105 PC 063÷090	(-25) ÷ (+50) ISO VG320	TELIUM VSF320	TIVELA OIL SC320	S220	GLYGOYLE 30	ALPHASYN PG320	ENERGOL SG-XP320	Olio sintetico - Synthetic oil - Synthetisches Öl - Huile synthétique - Aceite sintetico
SW 110÷150	(-5) ÷ (+40) ISO VG460	BLASIA 460	OMALA OIL460	SPARTAN EP460	MOBILGEAR 634	ALPHA MAX 460	ENERGOL GR-XP460	Olio minerale - Mineral oil - Mineralöl - Huile minérale - Aceite mineral
	(-15) ÷ (+25) ISO VG220	BLASIA 220	OMALA OIL220	SPARTAN EP220	MOBILGEAR 630	ALPHA MAX 220	ENERGOL GR-XP220	

- Quantità olio in litri ~ / Quantity of oil in litres ~ / Ölmenge (Liter) ~ / Quantité d'huile en litres ~ / Cantidad de aceite en litros ~

SW	030	040	050	063	075	090	105	110	130	150	PC	063	071	080	090
B3	0.04	0.08	0.15	0.3	0.55	1	1.6	3	4.5	7		0.05	0.07	0.15	0.16
B8								2.2	3.3	5.1					
B6-B7								2.5	3.5	5.4					
V5								3	4.5	7					
V6								2.2	3.3	5.1					



Radial loads (N) OUTPUT SHAFTS

Radial loads

The radial load on the shaft is calculated with the following formula:

$$F_{re} = \frac{2000 \cdot M \cdot fz}{D} \leq Fr1 \text{ o } Fr2$$

F_{re} (N)

Resulting radial load

M (Nm)

Torque on the shaft

D (mm)

Diameter of the transmission member mounted on the shaft

Fr (N)

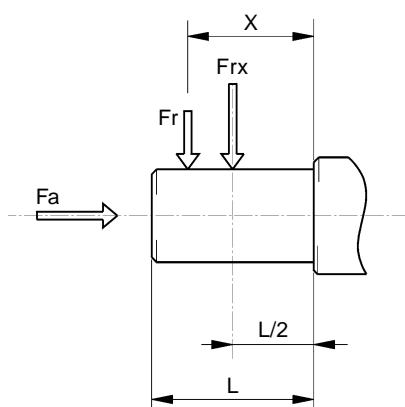
Value of the maximum admitted radial load (see relative tables)

fz = 1,1	gear pinion
1,4	chain wheel
1,7	v-pulley
2,5	flat pulley

When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:

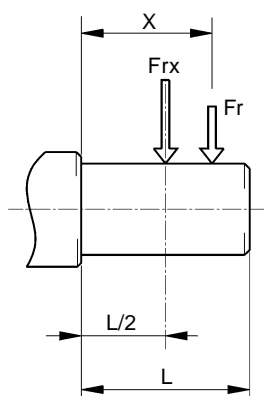
$$F_{re} \leq \frac{Fr \cdot a}{(b + x)} \leq Fr1_{max} \text{ o } Fr2_{max}$$

a , b , x = values given in the tables on page 11



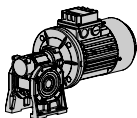
SW	030	040	050	063	075	090	105	110	130	150
a	65	84	101	120	131	162	176	176	188	215
b	50	64	76	95	101	122	136	136	148	174
Fr2 max	1830	3490	4840	6270	7380	8180	12000	12000	13500	18000

INPUT SHAFTS



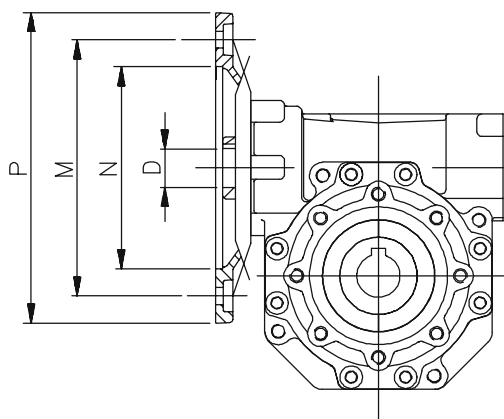
ISW	030	040	050	063	075	090	105	110	130	150
a	86	106	129	159	192	227	266	266	314	350
b	76	94.5	114	139	167	202	236	236	274	310
Fr1 max	210	350	490	700	980	1270	1700	1700	2100	2800

The values of the admissible radial loads are given on the pages relating to performance (Fr1, Fr2)

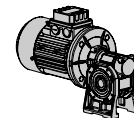


Predisposition

Low profile key supplied by Spaggiari o

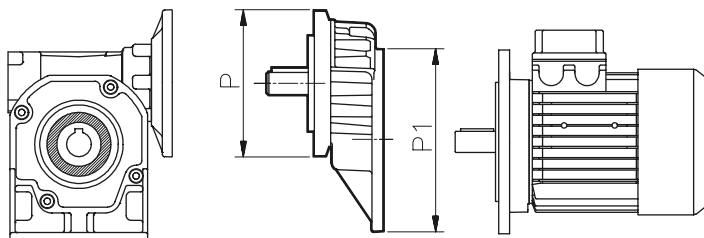


SW	PAM IEC	N	M	P	D											
					5	7,5	10	15	20	25	30	40	50	60	80	100
030	63B5	95	115	140	11	11	11	11	11	11	11	11	11	-	-	-
	63B14	60	75	90												
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	9	-
	56B14	50	65	80												
040	71B5	110	130	160	14	14	14	14	14	14	14	14	14	-	-	-
	71B14	70	85	105												
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90												
050	56B5	80	100	120	-	-	-	-	-	-	-	-	9	9	9	9
	80B5	130	165	200	19	19	19	19	19	19	19	-	-	-	-	-
	80B14	80	100	120												
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	14	-
063	71B14	70	85	105												
	63B5	95	115	140	-	-	-	-	-	-	-	11	11	11	11	11
	90B5	130	165	200	-	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	-	-
075	80B14	80	100	120												
	71B5	110	130	160	-	-	-	-	-	-	-	14	14	14	14	14
	100/112B5	180	215	250	-	28	28	28	-	-	-	-	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	-	-	-	-
	90B14	95	115	140												
090	80B5	130	165	200	-	-	-	-	-	-	-	19	19	19	19	19
	80B14	80	100	120												
	100/112B5	180	215	250	-	28	28	28	28	28	28	-	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	-	-	-
	90B14	95	115	140												
105	80B5	130	165	200	-	-	-	-	-	-	-	-	-	-	19	19
	132B5	230	265	300	-	38*	38*	38*	38*	-	-	-	-	-	-	-
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	-	24	24	24	24	24	24	24
110	80B5	130	165	200	-	-	-	-	-	-	-	-	-	-	19	19
	132B5	230	265	300	-	38*	38*	38*	38*	-	-	-	-	-	-	-
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	-	24	24	24	24	24	24	24
130	80B5	130	165	200	-	-	-	-	-	-	-	-	-	-	19	19
	132B5	230	265	300	-	38*	38*	38*	38*	38*	38*	38*	-	-	-	-
	100/112B5	180	215	250	-	-	-	-	-	28	28	28	28	28	28	28
150	90B5	130	165	200	-	-	-	-	-	-	-	-	-	-	24	24
	160B5	250	300	350	-	42	42	42	42	42	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	-	-	38	38	38	38	38	38	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	-	28	28	28	28



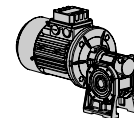
PC+SW Combinations

SW	i	PC 063		PC 071		PC 080			PC 090		
		105 / 11 i = 3	105 / 14 i = 3	120 / 14 i = 3	120 / 19 i = 3	160 / 19 i = 3	160 / 24 i = 3	160 / 28 i = 3	160 / 19 i = 2,42	160 / 24 i = 2,42	160 / 28 i = 2,42
040	25										
	30										
	40										
	50										
	60										
	80										
050	100										
	25										
	30										
	40										
	50										
	60										
063	80										
	100										
	25										
	30										
	40										
	50										
075	60										
	80										
	100										
	25										
	30										
	40										
090	50										
	60										
	80										
	100										
	25										
	30										
105	40										
	50										
	60										
	80										
	100										
	25										
110	30										
	40										
	50										
	60										
	80										
	100										
130	25										
	30										
	40										
	50										
	60										
	80										
100											



	P1	P	(P)
PC 063	63B5 - 140 / 11	105 / 11	(105 / 14)
PC 071	71B5 - 160 / 14	120 / 14	(120 / 19)
PC 080	80B5 - 200 / 19	160 / 19	(160 / 24) (160 / 28)
PC 090	90B5 - 200 / 24	160 / 24	(160 / 19) (160 / 28)

(..) Only on request



EFFICIENCY

Efficiency is a parameter which has a major influence on the sizing of certain applications, and basically depends on gear pair design elements.

The mesh data table on page 16 shows dynamic efficiency ($\eta_1=1400$) and static efficiency values. Remember that these values are only achieved after the unit has been run in.

DYNAMIC IRREVERSIBILITY

Dynamic irreversibility is achieved when the output shaft stops instantly when drive is no longer transmitted through the worm shaft. This condition requires a dynamic efficiency of $\eta_d < 0.5$ (see table on page 16).

STATIC IRREVERSIBILITY

Static irreversibility is achieved when, with the gear reducer at a standstill, the application of a load to the output shaft does not set in motion the worm shaft. This condition requires a static efficiency of $\eta_s < 0.5$ (see table on page 16).

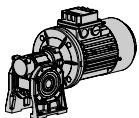
η_d	IRREVERSIBILITA' DINAMICA	DYNAMIC IRREVERSIBILITY	DYNAMISCHE SELBSTHEMMUNG	IRREVERSIBILITE DYNAMIQUE	IRREVERSIBILIDAD DINAMICA
> 0.6	reversibilità dinamica	dynamic reversibility	dynamische Reversierbarkeit	réversibilité dynamique	reversibilidad dinámica
0.5 ÷ 0.6	reversibilità dinamica incerta	low dynamic reversibility	kaum dynamisch reversierbar	réversibilité dynamique incertaine	reversibilidad dinámica incierta
0.4 ÷ 0.5	buona irreversibilità dinamica	good dynamic irreversibility	schwache dynamische Selbsthemmung	bonne irréversibilité dynamique	adecuada irreversibilidad dinámica
< 0.4	irreversibilità dinamica	dynamic irreversibility	dynamische Selbsthemmung	irréversibilité dynamique	irreversibilidad dinámica

η_s	IRREVERSIBILITA' STATICA	STATIC IRREVERSIBILITY	STATISCHE SELBSTHEMMUNG	IRREVERSIBILITE STATIQUE	IRREVERSIBILIDAD ESTATICA
> 0.55	reversibilità statica	static reversibility	statische Reversierbarkeit	réversibilité statique	reversibilidad estática
0.5 ÷ 0.55	reversibilità statica incerta	low static reversibility	kaum statisch reversierbar	réversibilité statique incertaine	reversibilidad estática incierta
< 0.5	irreversibilità statica	static irreversibility	statische Selbsthemmung	irréversibilité statique	irreversibilidad estática

The table shows approximate irreversibility classes.

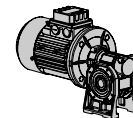
Vibrations and shocks can affect a gear reducer's irreversibility.

For the irreversibility conditions of a combined geared unit one must consider that the efficiency of the group is given by the product of the efficiencies of each single reducer, i.e.: $\eta_{tot} = \eta_1 \times \eta_2$



Mesh data

SW	i	5	7,5	10	15	20	25	30	40	50	60	80	100
030	Z1	6	4	3	2	2	1	1	1	1	1	1	
	γ	27°04'	18°49'	14°20'	9°40'	7°42'	5°35'	4°52'	3°52'	3°12'	2°45'	2°07'	
	Mx	1,44	1,44	1,44	1,44	1,09	1,7	1,44	1,09	0,89	0,74	0,56	
	$\eta_d(1400)$	0,87	0,85	0,82	0,77	0,73	0,68	0,65	0,59	0,55	0,51	0,44	
	η_s	0,72	0,67	0,63	0,55	0,5	0,43	0,39	0,35	0,31	0,27	0,23	
040	Z1	6	4	3	2	2	2	1	1	1	1	1	1
	γ	34°19'	24°28'	18°51'	12°49'	10°23'	8°43'	6°29'	5°14'	4°23'	3°47'	2°57'	2°25'
	Mx	2,06	2,06	2,06	2,06	1,57	1,27	2,06	1,57	1,27	1,06	0,81	0,65
	$\eta_d(1400)$	0,89	0,87	0,85	0,82	0,78	0,75	0,7	0,65	0,62	0,58	0,52	0,47
	η_s	0,74	0,71	0,67	0,6	0,55	0,51	0,45	0,4	0,36	0,32	0,28	0,24
050	Z1	6	4	3	2	2	2	1	1	1	1	1	1
	γ	33°37'	23°54'	18°23'	12°30'	10°06'	8°29'	6°19'	5°06'	4°16'	3°40'	2°52'	2°21'
	Mx	2,56	2,56	2,56	2,56	1,95	1,58	2,56	1,95	1,58	1,32	1	0,8
	$\eta_d(1400)$	0,89	0,88	0,86	0,82	0,79	0,76	0,72	0,67	0,63	0,59	0,53	0,49
	η_s	0,74	0,7	0,66	0,59	0,55	0,51	0,44	0,39	0,35	0,32	0,27	0,23
063	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		24°31'	18°53'	12°51'	10°25'	8°45'	6°30'	5°15'	4°24'	3°47'	2°58'	2°26'
	Mx		3,25	3,25	3,25	2,48	2	3,25	2,48	2	1,68	1,27	1,02
	$\eta_d(1400)$		0,88	0,87	0,83	0,81	0,78	0,74	0,7	0,66	0,62	0,57	0,51
	η_s		0,71	0,67	0,6	0,55	0,51	0,45	0,4	0,36	0,33	0,28	0,24
075	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		26°17'	20°20'	13°52'	11°18'	9°32'	7°02'	5°42'	4°48'	4°08'	3°14'	2°40'
	Mx		3,94	3,94	3,94	3	2,42	3,94	3	2,42	2,03	1,54	1,24
	$\eta_d(1400)$		0,89	0,88	0,85	0,82	0,80	0,76	0,72	0,69	0,65	0,60	0,55
	η_s		0,71	0,68	0,61	0,57	0,53	0,46	0,42	0,38	0,35	0,29	0,26
090	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		29°11'	22°44'	15°36'	12°50'	10°54'	7°57'	6°30'	5°30'	4°46'	3°45'	3°06'
	Mx		4,84	4,84	4,84	3,69	2,98	4,84	3,69	2,98	2,5	1,89	1,52
	$\eta_d(1400)$		0,9	0,89	0,86	0,84	0,82	0,78	0,75	0,72	0,69	0,63	0,59
	η_s		0,73	0,7	0,64	0,6	0,56	0,49	0,45	0,41	0,38	0,32	0,28
105	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		28°15'	21°57'	15°02'	14°41'	12°34'	7°39'	7°28'	6°22'	5°32'	4°24'	3°39'
	Mx		5,875	5,875	5,875	4,62	3,73	5,875	4,62	3,73	3,13	2,37	1,91
	$\eta_d(1400)$		0,9	0,89	0,86	0,85	0,84	0,79	0,78	0,75	0,72	0,67	0,63
	η_s		0,72	0,69	0,63	0,62	0,59	0,48	0,48	0,44	0,41	0,36	0,32
110	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		28°15'	21°57'	15°02'	14°41'	12°34'	7°39'	7°28'	6°22'	5°32'	4°24'	3°39'
	Mx		5,875	5,875	5,875	4,62	3,73	5,875	4,62	3,73	3,13	2,37	1,91
	$\eta_d(1400)$		0,9	0,89	0,86	0,85	0,84	0,79	0,78	0,75	0,72	0,67	0,63
	η_s		0,72	0,69	0,63	0,62	0,59	0,48	0,48	0,44	0,41	0,36	0,32
130	Z1		4	3	2	2	2	1	1	1	1	1	1
	γ		28°41'	22°19'	15°18'	13°52'	11°49'	7°47'	7°02'	5°58'	5°11'	4°07'	3°24'
	Mx		6,97	6,97	6,97	5,4	4,37	6,97	5,4	4,37	3,67	2,77	2,23
	$\eta_d(1400)$		0,91	0,89	0,87	0,86	0,84	0,8	0,78	0,75	0,72	0,68	0,64
	η_s		0,72	0,69	0,63	0,61	0,58	0,49	0,46	0,43	0,39	0,34	0,3
150	Z1		6	4	3	2	2	2	1	1	1	1	1
	γ		32°09'	24°35'	17°27'	12°53'	11°19'	9°50'	6°32'	5°43'	4°57'	3°55'	3°14'
	Mx		5,5	6,155	5,5	6,155	5	4,193	6,155	5	4,193	3,17	2,55
	$\eta_d(1400)$		0,91	0,9	0,88	0,86	0,84	0,83	0,78	0,76	0,73	0,68	0,64
	η_s		0,73	0,71	0,66	0,6	0,57	0,54	0,45	0,42	0,39	0,33	0,29



Design features (PC)

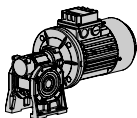
The PC construction is modular and therefore it can be supplied as a separate unit to be mounted on any type of fitted geared motor (PAM). In this connection, the various possibilities of flange/output shafts can be found on page 13.

Fitting the pre-stage helical module on the main reduction unit is easily done as for any motor of type B14.

The pre-stage unit cannot be used by itself, but only coupled with another reduction unit.

Materials

Case in aluminium alloy.
Gears in case hardened, hardened, tempered steel 20MnCr5 (UNI7846).

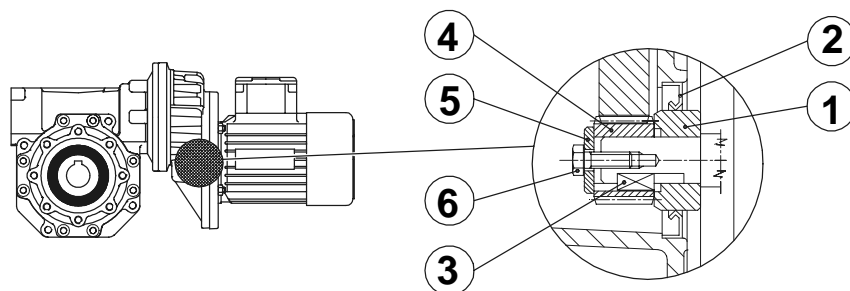


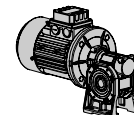
Coupling to electric motor

Correctly fitting the pinion on the electric motor shaft requires you keep to the following instructions:

- a) Thoroughly clean the electric motor shaft.
- b) Remove the motor key from its seat.
- c) Fit the bush (1) to the drive shaft as shown in the diagram. To make this easier, you can heat the bush to approximately 70/80°C.
- d) Fit the new key (3) provided in place of the one removed beforehand.
- e) Fit the pinion (4) taking the same precautions as described in point (c).
- f) Fit the washer (5) and tighten with the screw (6).
- g) Remove the rubber cap mounted on the seat of the oil seal, taking care since the pre-stage unit is already complete with lubricant.
- h) Fit the oil seal (2) and then the motor assembly, taking care not to damage the lip of the oil seal.

N.B. For correct operation, with no vibration or noise, it is recommended to use good quality motors.





Mounting positions

SW - ISW 030 ÷ 105

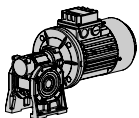
	B3	B8	B6	B7	V5	V6
SW ...T						
SW ...PA						
SW ...PB						
SW ...PV						

Mounting positions

SW - ISW 110 ÷ 150

	B3	B8	B6	B7	V5	V6
SW						

. - For vertical positions, check with pages 6-7.



Mounting positions

PC - SW 030 ÷ 105

	B3	B8	B6	B7	V5	V6
SW-PC...T						
SW-PC...PA						
SW-PC...PB						
SW-PC...PV						

Mounting positions

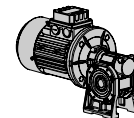
PC - SW 110 ÷ 130

	B3	B8	B6	B7	V5	V6
SW-PC						

- For vertical positions, check with pages 6-7.

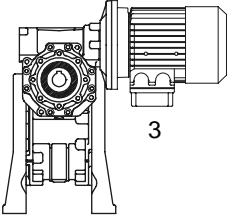
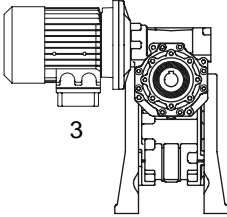
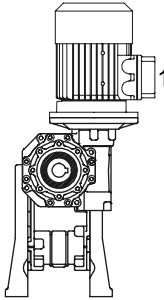
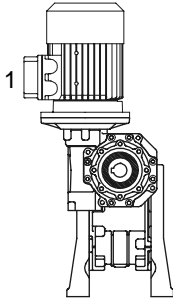
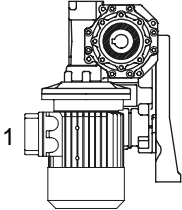
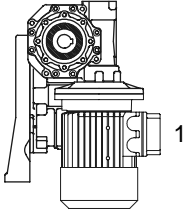
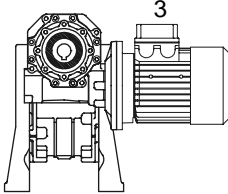
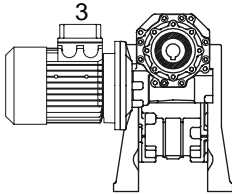
- Unless specified otherwise, the standard positions are B3.

- For positions not envisaged, it is necessary to call our Technical Service.



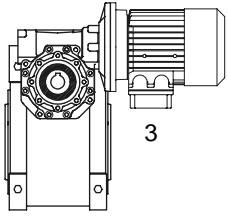
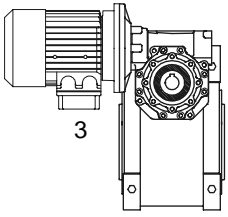
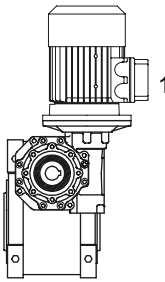
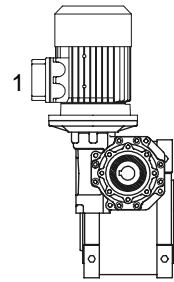
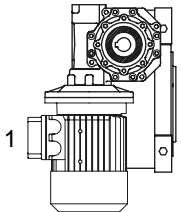
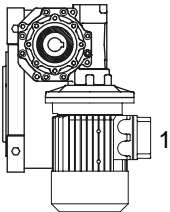
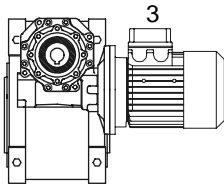
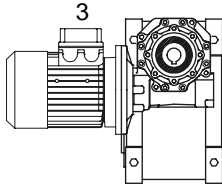
Execution

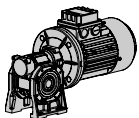
SW-SW 030 ÷ 105

AS1	AS2	VS1	VS2
			
PS1	PS2	BS1	BS2
			

Execution

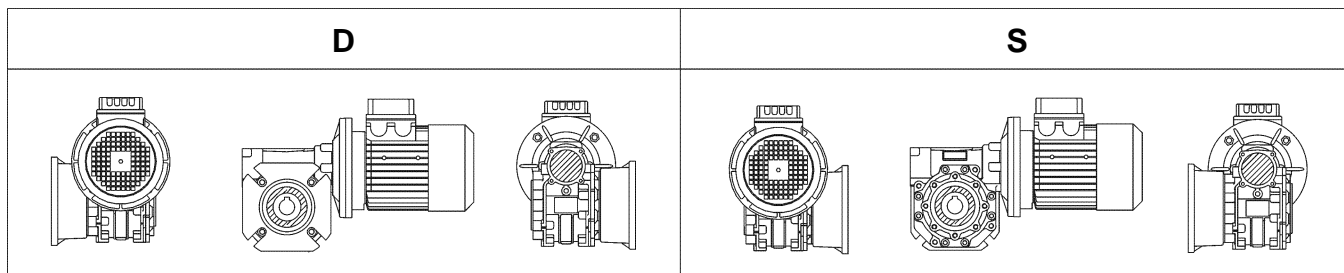
SW-SW 110 ÷ 150

AS1	AS2	VS1	VS2
			
PS1	PS2	BS1	BS2
			

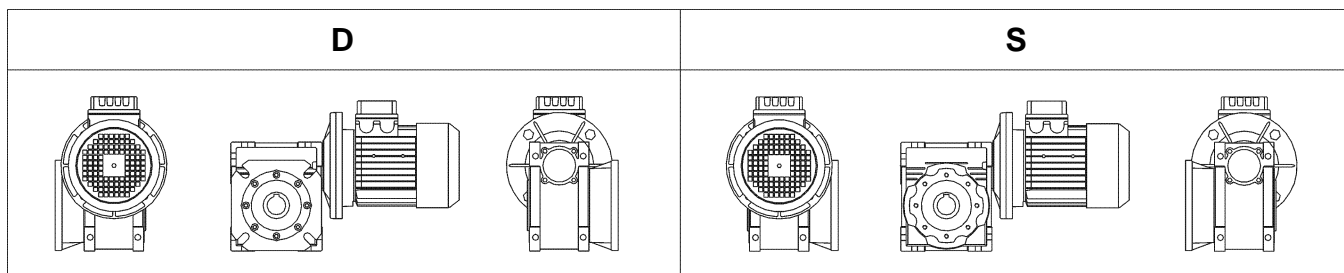


Flange F-FL

SW ...F 030 ÷ 105



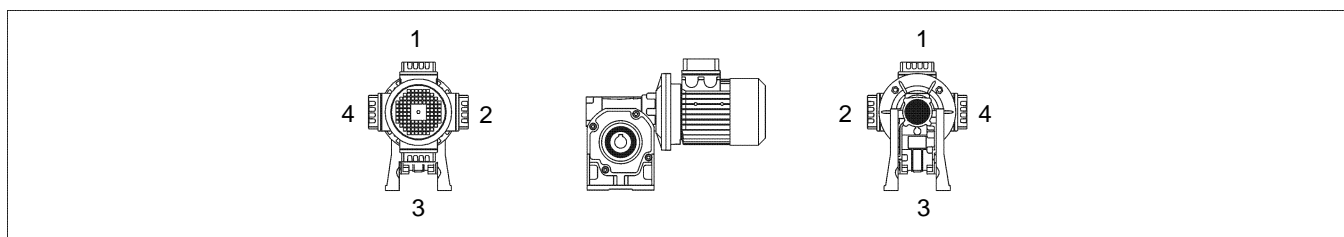
SW ...F 110 ÷ 150



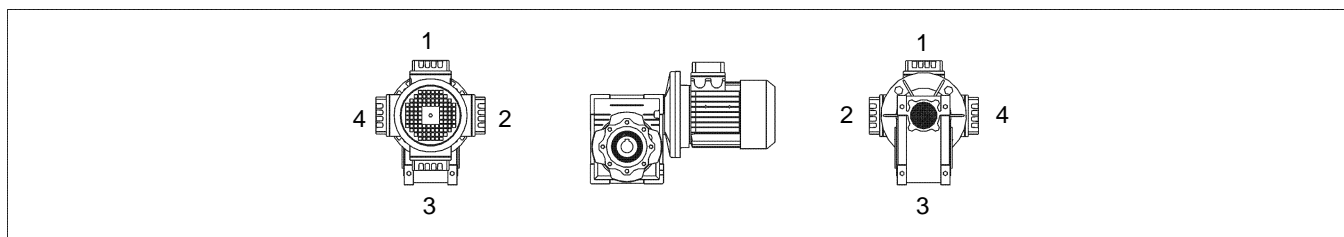
- Unless specified otherwise, the reduction unit is supplied with the flange in pos. D referred to position B3.

Pos. of terminal box

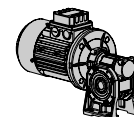
SW-SW 030 ÷ 105



SW-SW 110 ÷ 150



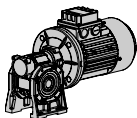
- In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.



Performance

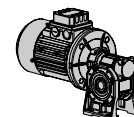
SW

n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
5	280.0	SW030	0.22	63C4	6.5	2.8	ISW030	18	150	597
7.5	186.7		0.22	63C4	10	1.9		18	150	683
10	140.0		0.22	63C4	12	1.5		18	169	752
15	93.3		0.22	63C4	17	1.0		18	169	861
20	70.0		0.22	63C4	22	0.8		18	190	948
25	56.0		0.18	63B4	21	1.0		21	210	1021
30	46.7		0.18	63B4	24	0.8		20	210	1085
40	35.0		0.12	63A4	19	0.9		18	210	1194
50	28.0		0.12	63A4	23	0.8		17	210	1286
60	23.3		0.09	56B4	19	0.9		16	210	1367
80	17.5	0.06	56A4	14	0.9	13	210	1504		
5	280.0	SW040	0.55	71C4	17	2.0	ISW040	34	250	1149
7.5	186.7		0.55	71C4	24	1.6		40	294	1315
10	140.0		0.55	71C4	32	1.3		40	331	1447
15	93.3		0.55	71C4	46	0.9		40	331	1657
20	70.0		0.37	71B4	39	1.0		39	350	1824
25	56.0		0.37	71B4	47	0.8		38	350	1964
30	46.7		0.37	71B4	53	0.8		45	350	2087
40	35.0		0.25	71A4	44	0.9		41	350	2298
50	28.0		0.22	63C4	47	0.8		39	350	2475
60	23.3		0.18	63B4	43	0.8		36	350	2630
80	17.5	0.12	63A4	34	1.0	33	350	2895		
100	14.0	0.12	63A4	38	0.8	29	350	3118		
5	280.0	SW050	0.92	80C4	28	2.2	ISW050	62	350	1577
7.5	186.7		0.92	80C4	41	1.7		71	401	1805
10	140.0		0.92	80C4	54	1.3		72	490	1987
15	93.3		0.92	80C4	77	1.0		74	490	2274
20	70.0		0.75	80B4	81	0.9		73	490	2503
25	56.0		0.55	80A4	71	1.0		70	490	2696
30	46.7		0.55	80A4	81	1.0		84	490	2865
40	35.0		0.37	71B4	68	1.1		76	490	3153
50	28.0		0.37	71B4	80	0.9		73	490	3397
60	23.3		0.37	71B4	89	0.8		68	490	3610
80	17.5	0.25	71A4	72	0.9	65	490	3973		
100	14.0	0.18	63B4	60	0.9	55	490	4280		
7.5	186.7	SW063	1.84	90LL4	83	1.5	ISW063	128	500	2359
10	140.0		1.84	90LL4	109	1.2		130	571	2597
15	93.3		1.84	90LL4	156	0.9		140	615	2973
20	70.0		1.5	90L4	166	0.8		135	667	3272
25	56.0		1.1	90S4	146	0.9		130	700	3524
30	46.7		1.1	90S4	167	1.0		160	700	3745
40	35.0		0.92	80C4	176	0.8		145	700	4122
50	28.0		0.55	80A4	124	1.1		135	700	4440
60	23.3		0.55	80A4	140	0.9		130	700	4719
80	17.5		0.37	71B4	115	1.1		122	700	5193
100	14.0	0.37	71B4	129	0.9	118	700	5595		



SW Performance

n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
7.5	186.7	SW075	4	112M4	182	1.0	ISW075	185	700	2785
10	140.0		4	112M4	240	0.8		195	830	3065
15	93.3		3	100LB4	261	0.8		200	851	3509
20	70.0		1.84	90LL4	206	1.0		210	980	3862
25	56.0		1.84	90LL4	251	0.8		200	980	4160
30	46.7		1.84	90LL4	286	0.8		230	980	4421
40	35.0		1.1	90S4	216	1.0		220	980	4865
50	28.0		0.92	80C4	217	1.0		210	980	5241
60	23.3		0.92	80C4	245	0.8		200	980	5569
80	17.5		0.55	80A4	180	1.1		190	980	6130
100	14.0	0.55	80A4	206	0.9	180	980	6603		
7.5	186.7	SW090	4.8	112MS4	221	1.3	ISW090	290	900	3081
10	140.0		4.8	112MS4	291	1.1		310	1082	3391
15	93.3		4.8	112MS4	422	0.9		360	1257	3882
20	70.0		4	112M4	458	0.8		355	1270	4273
25	56.0		3	100LB4	420	0.8		340	1270	4603
30	46.7		3	100LB4	479	0.9		410	1270	4891
40	35.0		1.84	90LL4	377	1.0		360	1270	5383
50	28.0		1.84	90LL4	452	0.8		340	1270	5799
60	23.3		1.5	90L4	424	0.8		320	1270	6163
80	17.5		0.92	80C4	316	0.9		285	1270	6783
100	14.0	0.75	80B4	302	0.9	270	1270	7306		
7.5	186.7	SW105	7.5	132L4	345	1.4	ISW105	480	1200	3893
10	140.0		7.5	132L4	455	1.1		520	1463	4285
15	93.3		7.5	132L4	660	0.9		570	1603	4905
20	70.0		5.5	132S4	638	0.9		560	1700	5399
25	56.0		4.8	112MS4	688	0.9		590	1700	5816
30	46.7		4	112M4	647	1.0		630	1700	6181
40	35.0		3	100LB4	638	1.0		610	1700	6803
50	28.0		3	100LB4	767	0.8		600	1700	7328
60	23.3		2.2	100LA4	648	0.9		560	1700	7787
80	17.5		1.5	90L4	548	0.9		490	1700	8571
100	14.0	1.1	90S4	473	1.0	460	1700	9232		
7.5	186.7	SW110	9.2	132M4	424	1.3	ISW110	552	1200	3893
10	140.0		7.5	132L4	455	1.3		598	1463	4285
15	93.3		7.5	132L4	660	1.0		656	1604	4905
20	70.0		5.5	132S4	638	1.0		644	1700	5399
25	56.0		4.8	112MS4	688	1.0		679	1700	5816
30	46.7		4	112M4	647	1.1		725	1700	6181
40	35.0		3	100LB4	638	1.1		702	1700	6803
50	28.0		3	100LB4	767	0.9		660	1700	7328
60	23.3		2.2	100LA4	648	1.0		616	1700	7787
80	17.5		1.5	90L4	548	0.9		515	1700	8571
100	14.0	1.1	90S4	473	1.0	483	1700	9232		



Performance

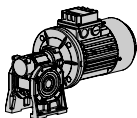
SW

n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
7.5	186.7	SW130	9.2	132M4	428	1.8	ISW130	750	1500	5092
10	140.0		9.2	132M4	559	1.5		820	1845	5605
15	93.3		9.2	132M4	819	1.1		920	2070	6416
20	70.0		9.2	132M4	1079	0.8		910	2100	7062
25	56.0		9.2	132M4	1318	0.7		930	2100	7607
30	46.7		7.5	132L4	1228	0.8		1040	2100	8084
40	35.0		7.5	132L4	1596	0.7		1050	2100	8897
50	28.0		4.8	112MS4	1228	0.8		980	2100	9584
60	23.3		4	112M4	1179	0.8		900	2100	10185
80	17.5		3	100LB4	1113	0.8		840	2100	11210
100	14.0	1.84	90LL4	803	0.9	740	2100	12076		
7.5	186.7	SW150	15	160L4	698	1.7	ISW150	1200	1950	6962
10	140.0		15	160L4	921	1.3		1240	2267	7663
15	93.3		15	160L4	1351	0.9		1250	2285	8771
20	70.0		15	160L4	1760	0.7		1300	2674	9654
25	56.0		11	160M4	1576	0.8		1200	2800	10400
30	46.7		9.2	132M4	1563	0.8		1200	2800	11051
40	35.0		9.2	132M4	1958	0.8		1550	2800	12163
50	28.0		5.5	132S4	1426	1.0		1400	2800	13103
60	23.3		5.5	132S4	1643	0.8		1260	2800	13924
80	17.5		4	112M4	1484	0.8		1150	2800	15325
100	14.0	3	100LB4	1310	0.8	1000	2800	16508		

Performance

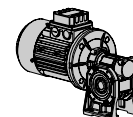
PC-SW

n1 = 1400		Geared motors					
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.	Fr2 (N)
75	18.7	PC063+SW040	0.18	63B4	64	0.8	2833
90	15.6		0.18	63B4	70	0.8	3011
120	11.7		0.18	63B4	85	0.6	3314
150	9.3		0.12	63A4	66	0.7	3490
180	7.8		0.12	63A4	74	0.6	3490
240	5.8		0.12	63A4	86	0.5	3490
75	18.7	PC063+SW050	0.22	63C4	78	1.2	3889
90	15.6		0.22	63C4	86	1.2	4132
120	11.7		0.22	63C4	106	0.9	4548
150	9.3		0.18	63B4	101	0.9	4840
180	7.8		0.18	63B4	113	0.7	4840
240	5.8		0.18	63B4	133	0.6	4840
300	4.7		0.12	63A4	98	0.7	4840



PC-SW Performance

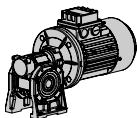
n1 = 1400		Geared motors					
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.	Fr2 (N)
120	11.7	PC063+SW063	0.22	63C4	110	1.7	5945
150	9.3		0.22	63C4	126	1.4	6270
180	7.8		0.22	63C4	143	1.1	6270
240	5.8		0.18	63B4	139	1.0	6270
300	4.7		0.18	63B4	155	0.8	6270
75	18.7	PC071+SW050	0.25	71A4	88	1.0	3889
90	15.6		0.25	71A4	98	1.1	4132
120	11.7		0.25	71A4	121	0.8	4548
150	9.3		0.25	71A4	141	0.6	4840
75	18.7	PC071+SW063	0.25	71A4	91	1.8	5083
90	15.6		0.55	71C4	219	0.9	5401
120	11.7		0.37	71B4	185	1.0	5945
150	9.3		0.37	71B4	212	0.8	6270
180	7.8		0.25	71A4	163	1.0	6270
240	5.8		0.25	71A4	192	0.7	6270
300	4.7		0.25	71A4	215	0.6	6270
75	18.7	PC071+SW075	0.55	71C4	205	1.2	6000
90	15.6		0.55	71C4	230	1.3	6375
120	11.7		0.55	71C4	284	1.0	7017
150	9.3		0.37	71B4	223	1.1	7380
180	7.8		0.37	71B4	254	0.9	7380
240	5.8		0.25	71A4	201	1.1	7380
300	4.7		0.25	71A4	230	0.9	7380
120	11.7	PC071+SW090	0.55	71C4	297	1.6	7764
150	9.3		0.55	71C4	355	1.3	8180
180	7.8		0.55	71C4	398	1.0	8180
240	5.8		0.37	71B4	321	1.1	8180
300	4.7		0.37	71B4	371	0.9	8180
75	18.7	PC080+SW075	0.92	80C4	344	0.7	6000
90	15.6		0.92	80C4	384	0.8	6375
120	11.7		0.55	80A4	284	1.0	7017
150	9.3		0.55	80A4	332	0.8	7380
180	7.8		0.55	80A4	378	0.6	7380
75	18.7	PC080+SW090	0.92	80C4	353	1.2	6638
90	15.6		0.92	80C4	401	1.4	7054
120	11.7		0.92	80C4	497	1.0	7764
150	9.3		0.92	80C4	593	0.8	8180
180	7.8		0.75	80B4	543	0.7	8180
75	18.7	PC080+SW105	0.92	80C4	367	2.2	8388
120	11.7		0.92	80C4	527	1.5	9811
150	9.3		0.92	80C4	621	1.3	10320
180	7.8		0.92	80C4	712	1.0	10320
240	5.8		0.75	80B4	700	0.9	10320
300	4.7		0.55	80A4	597	1.0	10320



Performance

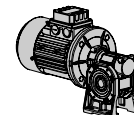
PC-SW

n1 = 1400		Geared motors					
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.	Fr2 (N)
75	18.7	PC080+SW110	0.92	80C4	367	2.5	8388
120	11.7		0.92	80C4	527	1.8	9811
150	9.3		0.92	80C4	621	1.4	10320
180	7.8		0.92	80C4	712	1.1	10320
240	5.8		0.75	80B4	700	0.9	10320
300	4.7		0.55	80A4	597	1.0	10320
75	18.7	PC080+SW130	0.92	80C4	367	3.3	10971
90	15.6		0.92	80C4	412	3.4	11659
120	11.7		0.92	80C4	527	2.5	12832
150	9.3		0.92	80C4	631	1.9	13500
180	7.8		0.92	80C4	712	1.5	13500
240	5.8		0.92	80C4	874	1.1	13500
300	4.7	0.92	80C4	998	0.9	13500	
60.5	23.1	PC090+SW105	1.84	90LL4	592	1.3	7809
72.6	19.3		1.84	90LL4	656	1.3	8298
97	14.5		1.84	90LL4	850	1.0	9133
121.0	11.6		1.84	90LL4	1002	0.8	9838
145	9.6		1.5	90L4	936	0.8	10320
193.6	7.2		1.1	90S4	828	0.8	10320
242.0	5.8	1.1	90S4	962	0.6	10320	
60.5	23.1	PC090+SW110	1.84	90LL4	592	1.5	7809
72.6	19.3		1.84	90LL4	656	1.5	8298
97	14.5		1.84	90LL4	850	1.1	9133
121.0	11.6		1.84	90LL4	1002	0.9	9838
145	9.6		1.5	90L4	936	0.8	10320
193.6	7.2		1.1	90S4	828	0.8	10320
242.0	5.8	1.1	90S4	962	0.6	10320	
60.5	23.1	PC090+SW130	1.84	90LL4	592	2.0	10213
72.6	19.3		1.84	90LL4	665	2.1	10853
97	14.5		1.84	90LL4	850	1.5	11945
121.0	11.6		1.84	90LL4	1018	1.2	12868
145.2	9.6		1.84	90LL4	1148	0.9	13500
193.6	7.2		1.5	90L4	1149	0.8	13500
242	5.8	1.1	90S4	962	0.9	13500	



SW-SW Performance

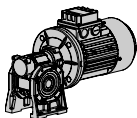
n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
300	4.7	SW030/040	0.09	56B4	88	0.8	ISW030/040	73	210	3490
400	3.5		0.06	56A4	70	0.9		65	210	3490
500	2.8		0.06	56A4	96	0.6		61	210	3490
600	2.3		0.06	56A4	104	0.7		73	210	3490
750	1.9		0.06	56A4	121	0.6		73	210	3490
900	1.6		0.06	56A4	139	0.5		73	210	3490
1200	1.2		0.06	56A4	166	0.4		65	210	3490
1500	0.9		0.06	56A4	196	0.4		73	210	3490
1800	0.8		0.06	56A4	218	0.3		73	210	3490
2400	0.58		0.06	56A4	261	0.2		65	210	3490
3200	0.4		0.06	56A4	300	0.2		65	210	3490
4000	0.4		0.06	56A4	279	0.1		33	210	3490
5000	0.28	0.06	56A4	338	0.1	29	210	3490		
300	4.7	NMRV030/050	0.12	63A4	119	1.2	ISW030/050	145	210	4840
400	3.5		0.12	63A4	142	0.9		124	210	4840
500	2.8		0.12	63A4	164	0.7		120	210	4840
600	2.3		0.09	56B4	159	0.9		145	210	4840
750	1.9		0.09	56B4	185	0.8		145	210	4840
900	1.6		0.09	56B4	212	0.7		145	210	4840
1200	1.2		0.06	56A4	169	0.7		124	210	4840
1500	0.93		0.06	56A4	199	0.7		145	210	4840
1800	0.78		0.06	56A4	222	0.7		145	210	4840
2400	0.6		0.06	56A4	266	0.5		124	210	4840
3000	0.5		0.06	56A4	307	0.4		120	210	4840
4000	0.35		0.06	56A4	288	0.3		82	210	4840
4800	0.29	0.06	56A4	311	0.3	82	210	4840		
300	4.7	SW030/063	0.22	63C4	210	1.1	ISW030/063	230	210	6270
400	3.5		0.22	63C4	271	0.8		230	210	6270
500	2.8		0.18	63B4	257	0.8		216	210	6270
600	2.3		0.12	63A4	208	1.1		230	210	6270
750	1.9		0.12	63A4	241	0.9		216	210	6270
900	1.6		0.09	56B4	200	1.0		198	210	6270
1200	1.2		0.09	56B4	263	0.9		230	210	6270
1500	0.93		0.09	56B4	305	0.7		216	210	6270
1800	0.78		0.06	56A4	225	0.9		198	210	6270
2400	0.58		0.06	56A4	276	0.8		230	210	6270
3000	0.47		0.06	56A4	319	0.7		216	210	6270
4000	0.35		0.06	56A4	306	0.6		172	210	6270
5000	0.28	0.06	56A4	360	0.4	150	210	6270		



Performance

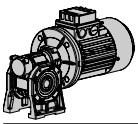
SW-SW

n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
300	4.7	SW040/075	0.37	71B4	405	1.0	ISW040/075	390	350	7380
400	3.5		0.37	71B4	498	0.7		360	350	7380
500	2.8		0.25	71A4	384	0.8		320	350	7380
600	2.3		0.18	63B4	362	1.1		390	350	7380
750	1.9		0.18	63B4	435	0.9		390	350	7380
900	1.6		0.18	63B4	487	0.8		390	350	7380
1200	1.2		0.12	63A4	399	0.9		360	350	7380
1500	0.93		0.09	56B4	360	1.1		390	350	7380
1800	0.78		0.09	56B4	404	1.0		390	350	7380
2400	0.58		0.09	56B4	496	0.7		360	350	7380
3000	0.47		0.06	56A4	377	0.8		320	350	7380
4000	0.35		0.06	56A4	355	0.7		250	350	7380
5000	0.28		0.06	56A4	419	0.5		230	350	7380
300	4.7		SW040/090	0.37	71B4	402		1.5	ISW040/090	610
400	3.5	0.37		71B4	523	1.2	610	350		8180
500	2.8	0.37		71B4	611	0.9	560	350		8180
600	2.3	0.37		71B4	757	0.8	610	350		8180
750	1.9	0.25		71A4	598	0.9	560	350		8180
900	1.6	0.25		71A4	667	0.8	505	350		8180
1200	1.2	0.18		63B4	629	1.0	610	350		8180
1500	0.93	0.18		63B4	735	0.8	560	350		8180
1800	0.78	0.12		63A4	547	0.9	505	350		8180
2400	0.58	0.12		63A4	695	0.9	610	350		8180
3000	0.47	0.09		56B4	609	0.9	560	350		8180
4000	0.35	0.09		56B4	548	0.8	460	350		8180
5000	0.28	0.06		56A4	431	1.0	410	350		8180
300	4.7	SW050/105		0.92	80C4	1069	1.0	ISW050/105		1100
400	3.5		0.92	80C4	1382	0.7	1030		490	10320
500	2.8		0.55	80A4	984	1.0	1000		490	10320
600	2.3		0.55	80A4	1181	0.9	1030		490	10320
750	1.9		0.55	80A4	1411	0.8	1100		490	10320
900	1.6		0.37	71B4	1079	1.0	1100		490	10320
1200	1.2		0.37	71B4	1396	0.7	1030		490	10320
1500	0.93		0.25	71A4	1064	1.0	1100		490	10320
1800	0.78		0.25	71A4	1195	0.9	1100		490	10320
2400	0.58		0.18	63B4	1113	0.9	1030		490	10320
3000	0.47		0.12	63A4	884	1.1	1000		490	10320
4000	0.35		0.12	63A4	784	1.0	780		490	10320
5000	0.28		0.12	63A4	928	0.76	710		490	10320

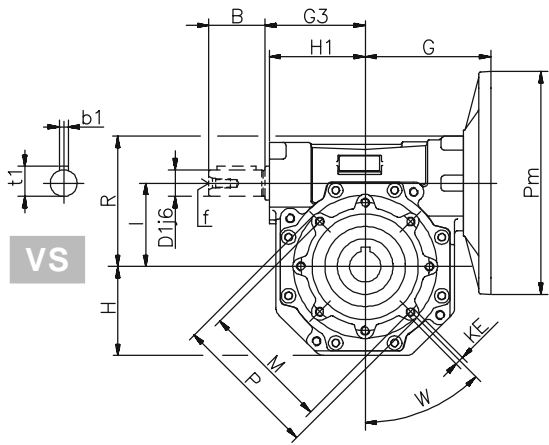


SW-SW Performance

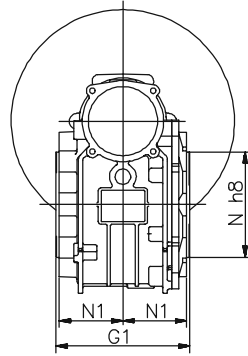
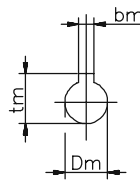
n1 = 1400		Geared motors					Gear units			
i	n2 1/min		P1 (kW)		M2 (Nm)	f.s.		M2 (Nm)	Fr1 (N)	Fr2 (N)
300	4.7	SW050/110	0.92	80C4	1069	1.2	ISW050/110	1265	490	10320
400	3.5		0.92	80C4	1382	0.9		1185	490	10320
500	2.8		0.55	80A4	984	1.1		1100	490	10320
600	2.3		0.55	80A4	1181	1.0		1185	490	10320
750	1.9		0.55	80A4	1411	0.9		1265	490	10320
900	1.6		0.37	71B4	1079	1.2		1265	490	10320
1200	1.2		0.37	71B4	1396	0.8		1185	490	10320
1500	0.93		0.25	71A4	1064	1.2		1265	490	10320
1800	0.78		0.25	71A4	1195	1.1		1265	490	10320
2400	0.58		0.18	63B4	1113	1.1		1185	490	10320
3000	0.47		0.12	63A4	884	1.2		1100	490	10320
4000	0.35		0.12	63A4	784	1.0		819	490	10320
5000	0.28	0.12	63A4	928	0.80	746	490	10320		
300	4.7	SW063/130	1.5	90L4	1789	1.0	ISW063/130	1760	700	13500
400	3.5		1.5	90L4	2279	0.7		1650	700	13500
500	2.8		1.1	90S4	1991	0.8		1550	700	13500
600	2.3		0.75	80B4	1631	1.0		1650	700	13500
750	1.9		0.75	80B4	2005	0.9		1760	700	13500
900	1.6		0.75	80B4	2283	0.8		1760	700	13500
1200	1.2		0.55	80A4	2132	0.8		1650	700	13500
1500	0.93		0.37	71B4	1674	1.1		1760	700	13500
1800	0.78		0.37	71B4	1887	0.9		1760	700	13500
2400	0.58		0.25	71A4	1624	1.0		1650	700	13500
3000	0.47		0.25	71A4	1935	0.8		1550	700	13500
4000	0.35		0.25	71A4	2046	0.6		1220	700	13500
5000	0.28	0.25	71A4	2430	0.5	1100	700	13500		
150	9.3	SW063/150	1.84	90LL4	1259	1.9	ISW063/150	2340	700	18000
200	7.0		1.84	90LL4	1616	1.4		2340	700	18000
250	5.6		1.84	90LL4	1966	1.0		2050	700	18000
300	4.7		1.84	90LL4	2281	1.0		2340	700	18000
400	3.5		1.84	90LL4	2708	1.0		2670	700	18000
500	2.8		1.84	90LL4	3167	0.7		2330	700	18000
600	2.3		1.5	90L4	3057	0.9		2670	700	18000
750	1.9		1.1	90S4	2616	0.9		2330	700	18000
900	1.6		0.92	80C4	2717	0.8		2100	700	18000
1200	1.2		0.92	80C4	3288	0.8		2670	700	18000
1800	0.8		0.55	80A4	2638	0.8		2100	700	18000
2400	0.6		0.55	80A4	3182	0.8		2670	700	18000
3000	0.5	0.37	71B4	2535	0.9	2330	700	18000		
4000	0.4	0.25	71A4	2026	0.9	1880	700	18000		
5000	0.3	0.25	71A4	2251	0.7	1650	700	18000		



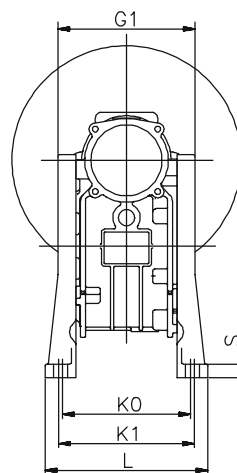
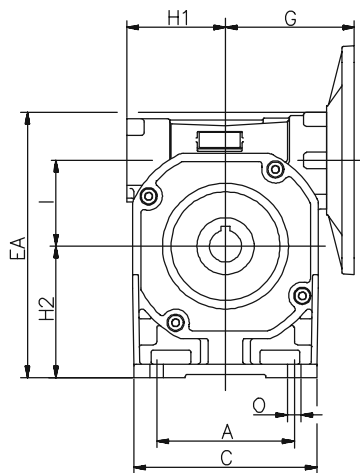
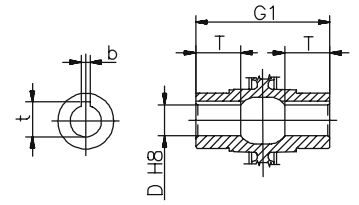
Dimensions



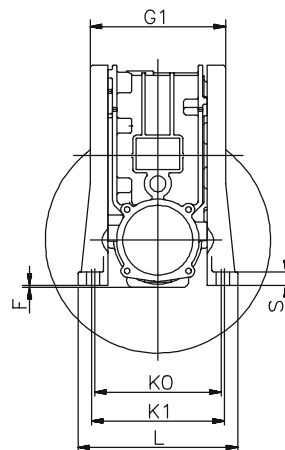
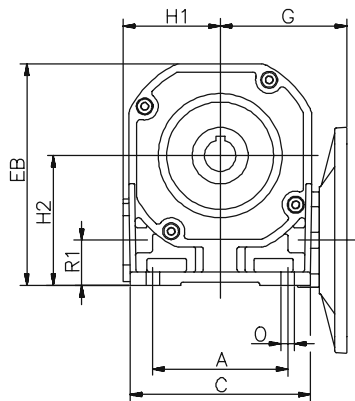
VS



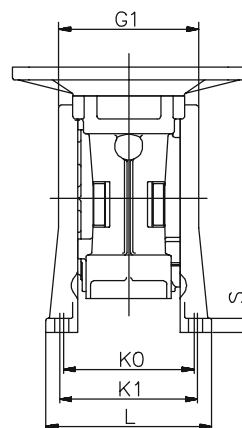
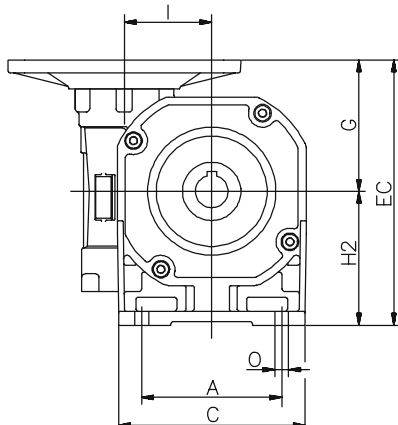
SW...T



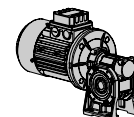
SW...PA-PAS



SW...PB-PBS



SW...PV-PVS



Dimensions

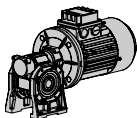
SW...

SW...	030	040	050	063	075	090	105	
...T	G	55	70	80	95	112.5	129.5	160
	G1	63	78	92	112	120	140	155
	G3	45	53	64	75	90	108	135
	H	37.5	42	52	66	80	97	115
	H1	40	50	60	72	86	103	127.5
	I	30	40	50	63	75	90	110
	KE	M6x11 (n°4)	M6x10 (n°4)	M8x10 (n°4)	M8x14 (n°8)	M8x14 (n°8)	M10x18 (n°8)	M10x18 (n°8)
	M	65	75	85	95	115	130	165
	N	55	60	70	80	95	110	130
	N1	29	36.5	43.5	53	57	67	74
	P	75	87	97.6	110	130	148	200
	R	57	70	84	102	117	133	166
	W	90°	45°	45°	45°	45°	45°	45°
	D	14	18 (19)	25 (24)	25 (28)	28 (35)	35 (38)	42
	T	21	26	30	36	40	45	50
	b	5	6	8	8	8 (10)	10	12
	t	16.3	20.8 (21.8)	28.3 (27.3)	28.3 (31.3)	31.3 (38.3)	38.3 (41.3)	45.3
	B	20	23	30	40	50	50	60
	D1	9	11	14	19	24	24	28
	b1	3	4	5	6	8	8	8
t1	10.2	12.5	16	21.5	27	27	27	
f	/	/	M6	M6	M8	M8	M10	
...PA - ...PB - ...PV	A	50	52	63	95	120	140	200
	C	80	90	110	140	160	200	250
	EA	112	142	166	202	232	275	338
	EB	96.5	117	137	170	196	242	293.5
	EC	110	142	162	195	227.5	271.5	332
	F	2	/	2	2	2	/	/
	H2	55	72	82	100	115	142	172
	K0	66	81	98.5	111	115	140	160
	K1	/	/	/	/	/	146	181
	L	80	98	124	138	142	180	208
	O	7	9	9	12	12	13	13
	R1	30	32	32	37	40	52	62
S	7	9	10	10	12	14	18	
...PAS - ...PBS - ...PVS	A	/	70	85	/	/	160	200
	C	/	96	112	/	/	210	250
	EA	/	141	169	/	/	283	336
	EB	/	116	141	/	/	250	291.5
	EC	/	141	165	/	/	279.5	330
	F	/	/	/	/	/	/	/
	H2	/	71	85	/	/	150	170
	K0	/	84	96	/	/	164	160
	K1	/	/	99	/	/	/	181
	L	/	100	116	/	/	195	208
	O	/	7	9	/	/	13	13
	R1	/	31	35	/	/	60	60
S	/	9	10	/	/	14	16	
~Kg	1.2	2.3	3.5	6.2	9	13	21	

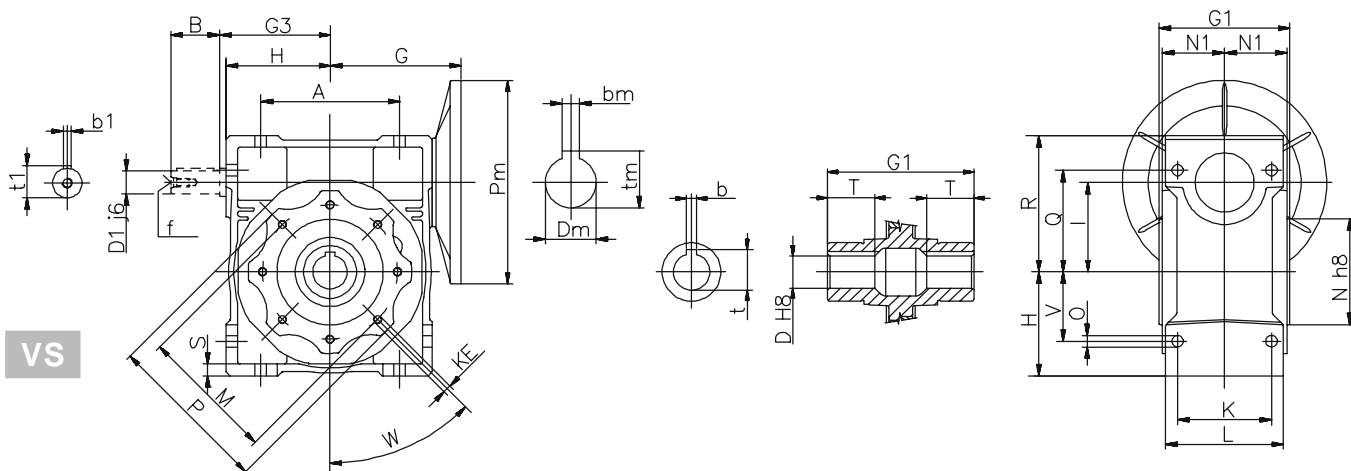
~kgWeight without motor

(..) Only on request

For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table shown at page 42.



SW... Dimensions SW110/150

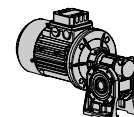


SW	A	B	D	D1	G	G1	G3	H	I	K	L	M	N	N1	O
110	170	60	42	28	160	155	135	127.5	110	115	144	165	130	74	14
130	200	80	45	30	180	170	155	147.5	130	120	155	215	180	81	16
150	240	80	50	35	210	200	175	170	150	145	185	215	180	96	18
SW	P	Q	R	S	T	V	W	b	t	b1	t1	f	KE		
110	200	125	167.5	14.5	50	85	45°	12	45.3	8	31	M10	M10*18 (8)		
130	250	140	187.5	15.5	60	100	45°	14	48.8	8	33	M10	M12*21 (8)		
150	250	180	230	18	72.5	120	45°	14	53.8	10	38	M12	M12*21 (8)		

SW	~Kg
110	35
130	48
150	84

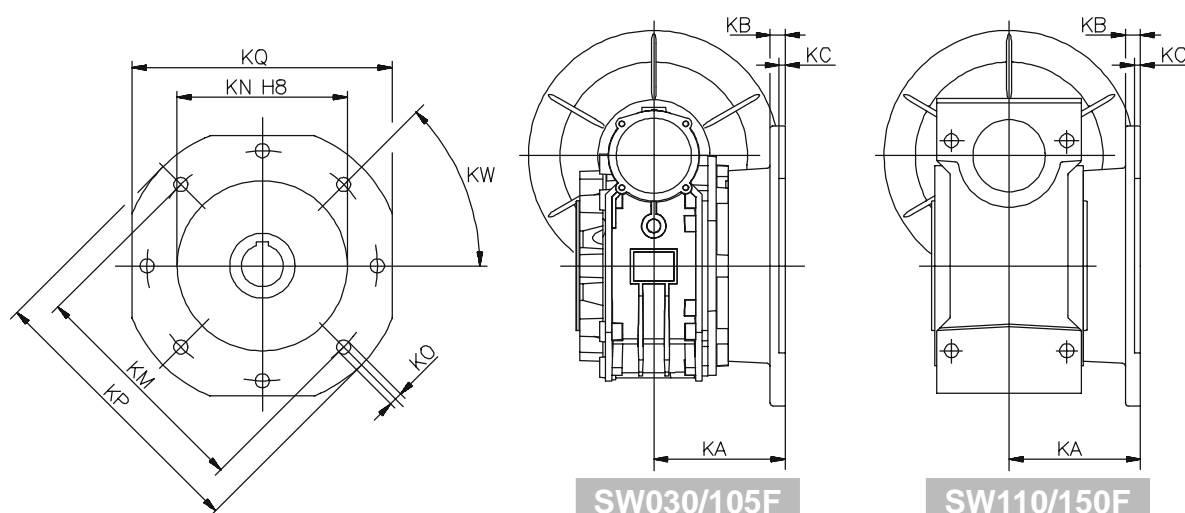
Weight without motor

For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the table shown at page 42.

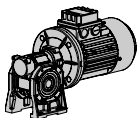


Dimensions

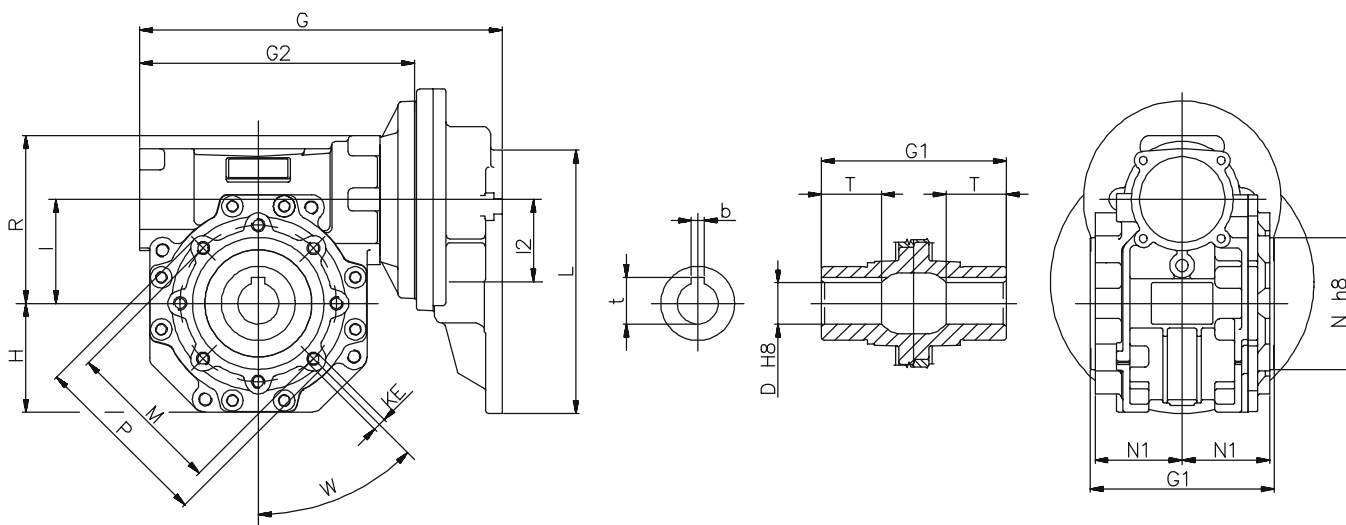
SW.F



		030	040	050	063	075	090	105	110	130	150
FA	KA	54.5	67	90	82	111	111	131	131	140	155
	KB	6	7	9	10	13	13	15	15	15	15
	KC	4	4	5	6	6	6	6	6	6	6
	KN	50	60	70	115	130	152	170	170	180	180
	KM	68	80 min	90 min	150	165	175	230	230	255	255
	KO	6.5 (n°4)	9 (n°4)	11 (n°4)	11 (n°4)	14 (n°4)	14 (n°4)	14 (n°8)	14 (n°8)	16 (n°8)	16 (n°8)
	KP	80	110	125	180	200	210	280	280	320	320
	KQ	70	95	110	142	170	200	260	260	290	290
	KW	45°	45°	45°	45°	45°	45°	45°	45°	22.5°	22.5°
FB	KA	-	97	120	112	90	122	180	180	-	-
	KB	-	7	9	10	13	18	15	15	-	-
	KC	-	4	5	6	6	6	6	6	-	-
	KN	-	60	70	115	110	180	170	170	-	-
	KM	-	80 min	90 min	150	130	215	230	230	-	-
	KO	-	9 (n°4)	11 (n°4)	11 (n°4)	14 (n°4)	14 (n°4)	14 (n°8)	14 (n°8)	-	-
	KP	-	110	125	180	160	250	280	280	-	-
	KQ	-	95	110	142	-	-	260	260	-	-
	KW	-	45°	45°	45°	45°	45°	45°	45°	-	-
FC	KA	-	80	89	98	-	110	-	-	-	-
	KB	-	9	10	10	-	17	-	-	-	-
	KC	-	5	5	5	-	6	-	-	-	-
	KN	-	95	110	130	-	130	-	-	-	-
	KM	-	115	130	165	-	165	-	-	-	-
	KO	-	9.5 (n°4)	9.5 (n°4)	11 (n°4)	-	11 (n°4)	-	-	-	-
	KP	-	140	160	200	-	200	-	-	-	-
	KW	-	45°	45°	45°	-	45°	-	-	-	-
FD	KA	-	58	72	107	-	151	-	-	-	-
	KB	-	12	14.5	10	-	13	-	-	-	-
	KC	-	5	5	5	-	6	-	-	-	-
	KN	-	80	95	130	-	152	-	-	-	-
	KM	-	100	115	165	-	175	-	-	-	-
	KO	-	9 (n°4)	11 (n°4)	11 (n°4)	-	14 (n°4)	-	-	-	-
	KP	-	120	140	200	-	210	-	-	-	-
	KW	-	45°	45°	45°	-	45°	-	-	-	-
FE	KA	-	-	-	80.5	-	-	-	-	-	-
	KB	-	-	-	16.5	-	-	-	-	-	-
	KC	-	-	-	5	-	-	-	-	-	-
	KN	-	-	-	110	-	-	-	-	-	-
	KM	-	-	-	130	-	-	-	-	-	-
	KO	-	-	-	11 (n°4)	-	-	-	-	-	-
	KW	-	-	-	45°	-	-	-	-	-	-

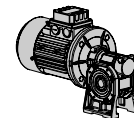


PC + SW Dimensions PC063/090+SW040/105



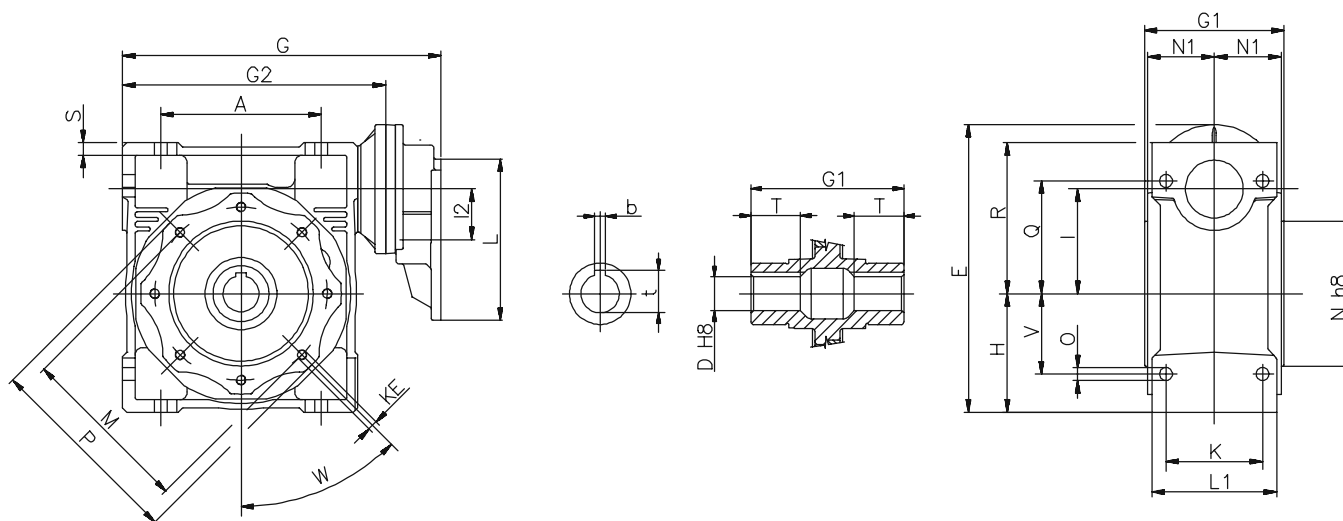
	PC063+SW			PC071+SW				PC080 / PC090+SW		
	040	050	063	050	063	075	090	075	090	105
G	165	185	212	193	220	251.5	285.5	267.5	301.5	356.5
G1	78	92	112	92	112	120	140	120	140	155
G2	120	140	167	140	167	198.5	232.5	198.5	232.5	287.5
H	42	52	66	52	66	80	97	80	97	115
I	40	50	63	50	63	75	90	75	90	110
I2	40	40	40	50	50	50	50	63	63	63
L	140	140	140	160	160	160	160	200	200	200
KE	M6*10(4)	M8*10(4)	M8*14(8)	M8*10(4)	M8*14(8)	M8*14(8)	M10*18(8)	M8*14(8)	M10*18(8)	M10*18(8)
M	75	85	95	85	95	115	130	115	130	165
N	60	70	80	70	80	95	110	95	110	130
N1	36.5	43.5	53	43.5	53	57	67	57	67	74
P	87	97.6	110	97.6	110	130	148	130	148	200
R	70	84	102	84	102	117	133	117	133	166
T	26	30	36	30	36	40	45	40	45	50
W	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
D	18	25	25	25	25	28	35	28	35	42
b	6	8	8	8	8	8	10	8	10	12
t	20.8	28.3	28.3	28.3	28.3	31.3	38.3	31.3	38.3	45.3
~Kg	3.4	4.6	7.3	5.1	7.8	10.6	14.6	12.4	16.4	24.4

-kg Peso senza motore / Weight without motor / Gewicht ohne Motor / Poids sans moteur / Peso sin motor



Dimensions PC + SW

PC080/090+SW110/130



PC080 / PC090+SW														
SW	A	E	G	G1	G2	H	I	I2	L	L1	K	M	N	N1
110	170	317.5	356.5	155	287.5	127.5	110	63	200	144	115	165	130	74
130	200	357.5	396.5	170	327.5	147.5	130	63	200	155	120	215	180	81
SW	O	P	Q	R	S	T	V	W	D	b	t	KE		
110	14	200	125	167.5	14.5	50	85	45°	42	12	45.3	M10*18 (8)		
130	16	250	140	187.5	15.5	60	100	45°	45	14	48.8	M12*21 (8)		

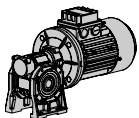
~Kg	110	130
	38.4	51.4

~kg Peso senza motore / Weight without motor / Gewicht ohne Motor / Poids sans moteur / Peso sin motor

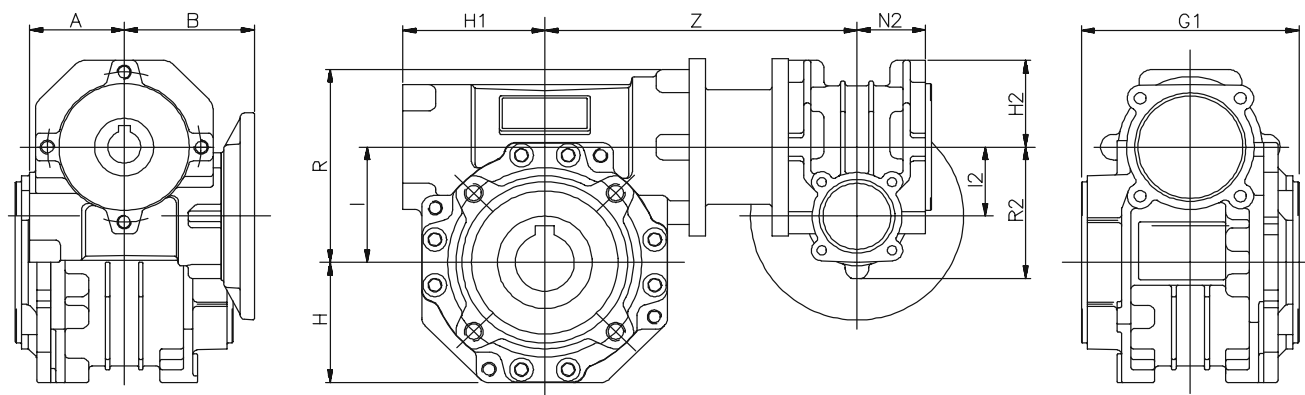
- For the dimensions of the output flanges, please consider the drawing of relevant SW size.

- For the dimensions of the hollow shafts in option, please consider the drawing of relevant SW size.

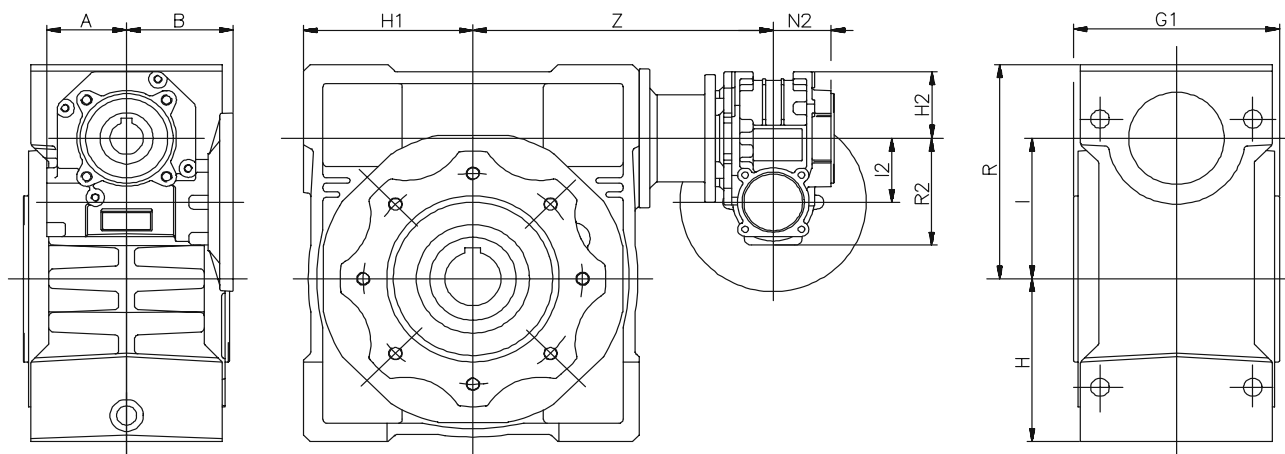
- For the dimensions of the double extension worm shafts, please consider the drawing of relevant SW size.



SW + SW Dimensions SW030/050+SW040/105

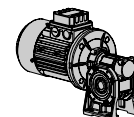


SW050/063+SW110/150

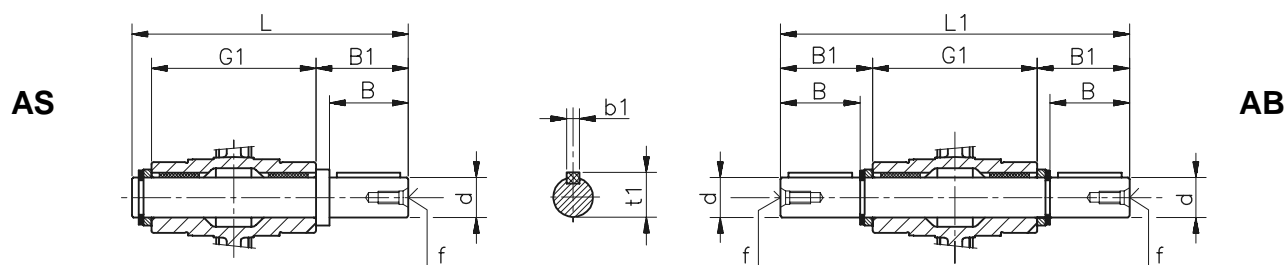


SW + SW									
	030-040	030-050	030-063	040-075	040-090	050-105	050-110	063-130	063-150
A	40	40	40	50	50	60	60	72	72
B	55	55	55	70	70	80	80	95	95
G1	78	92	112	120	140	155	155	170	200
H	42	52	66	80	97	115	127.5	147.5	170
H1	50	60	72	86	103	127.5	127.5	147.5	170
I	40	50	63	75	90	110	110	130	150
R	70	84	102	117	133	166	167.5	187.5	230
H2	37.5	37.5	37.5	42	42	52	52	66	66
I2	30	30	30	40	40	50	50	63	63
N2	29	29	29	36.5	36.5	43.5	43.5	53	53
R2	57	57	57	70	70	84	84	102	102
Z	122	132	145	167.5	184.5	226	226	245	275
~Kg	3.5	4.7	7.4	11.3	15.3	24.5	38.5	54.2	90.2

~kg Weight without motor

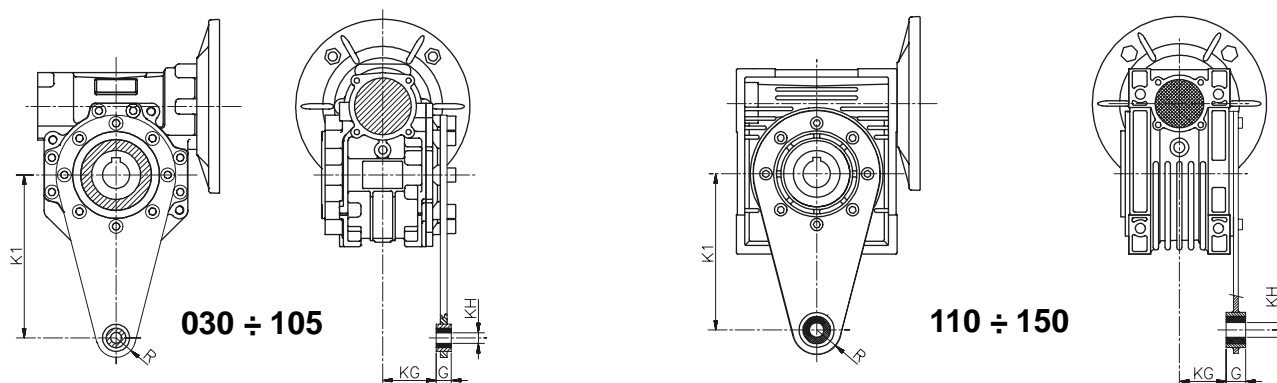


Low speed shafts



	d	B	B1	G1	L	L1	f	b1	t1
030	14 g6	30	32,5	63	102	128	M6	5	16
040	18 h6	40	43	78	128	164	M6	6	20,5
050	25 h6	50	53,5	92	153	199	M10	8	28
063	25 h6	50	53,5	112	173	219	M10	8	28
075	28 h6	60	63,5	120	192	247	M10	8	31
090	35 h6	80	84,5	140	234	309	M12	10	38
105	42 h6	80	84,5	155	249	324	M16	12	45
110	42 h6	80	84,5	155	249	324	M16	12	45
130	45 h6	80	85	170	265	340	M16	14	48,5
150	50 h6	82	87	200	297	374	M16	14	53,5

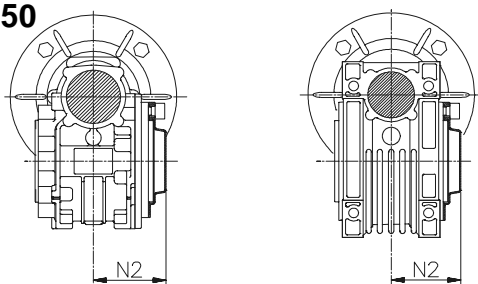
Torque arm



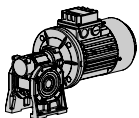
	K1	G	KG	KH	R
030	85	14	24	8	15
040	100	14	31,5	10	18
050	100	14	38,5	10	18
063	150	14	49	10	18
075	200	25	47,5	20	30
090	200	25	57,5	20	30
105	250	30	62	25	35
110	250	30	62	25	35
130	250	30	69	25	35
150	250	30	84	25	35

Cover 030 ÷ 105

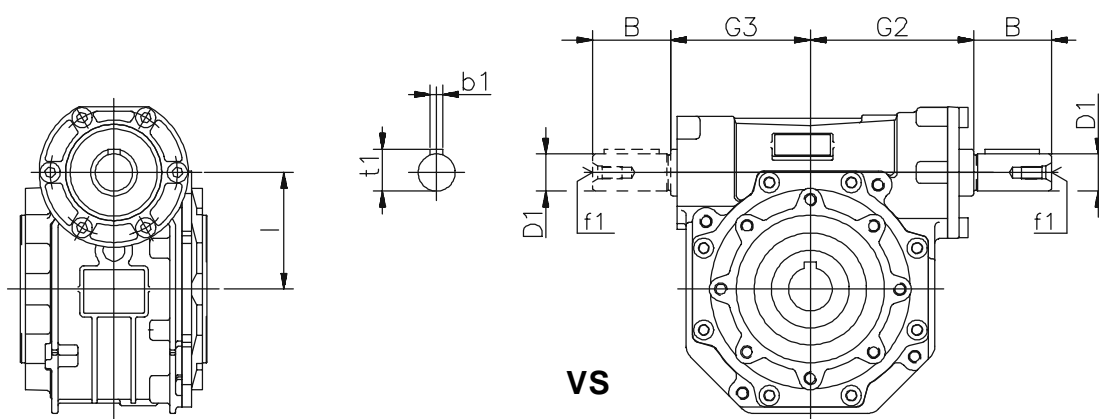
110 ÷ 150



	030	040	050	063	075	090	105	110	130	150
N2	42	50	58	69	74	86	94	94	102	113

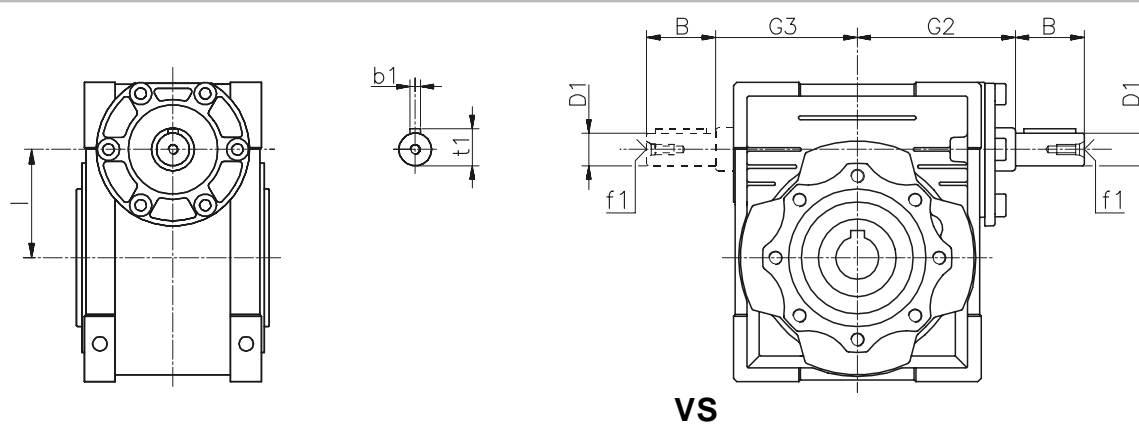


ISW Dimensions



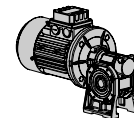
ISW	030	040	050	063	075	090	105
B	20	23	30	40	50	50	60
D1	9 j6	11 j6	14 j6	19 j6	24 j6	24 j6	28 j6
G2	51	60	74	90	105	125	142
G3	45	53	64	75	90	108	135
l	30	40	50	63	75	90	110
b1	3	4	5	6	8	8	8
f1	-	-	M6	M6	M8	M8	M10
t1	10,2	12,5	16	21,5	27	27	31

ISW Dimensions

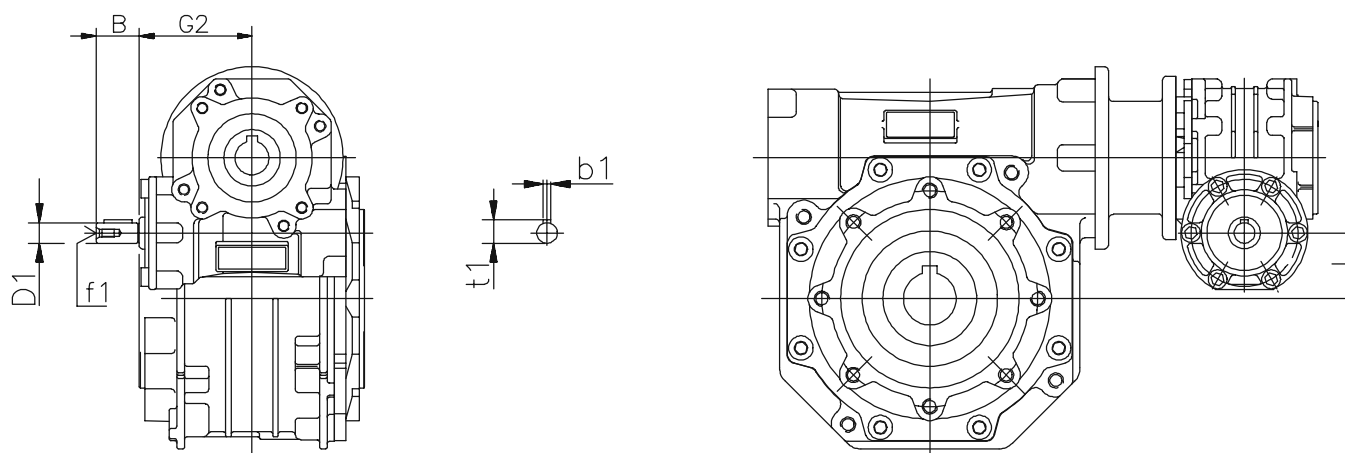


ISW	110	130	150
B	60	80	80
D1	28 j6	30 j6	35 j6
G2	142	162	195
G3	135	155	175
l	110	130	150
b1	8	8	10
f1	M10	M10	M12
t1	31	33	38

For the missing dimensions, please consider the drawing of relevant SW size.

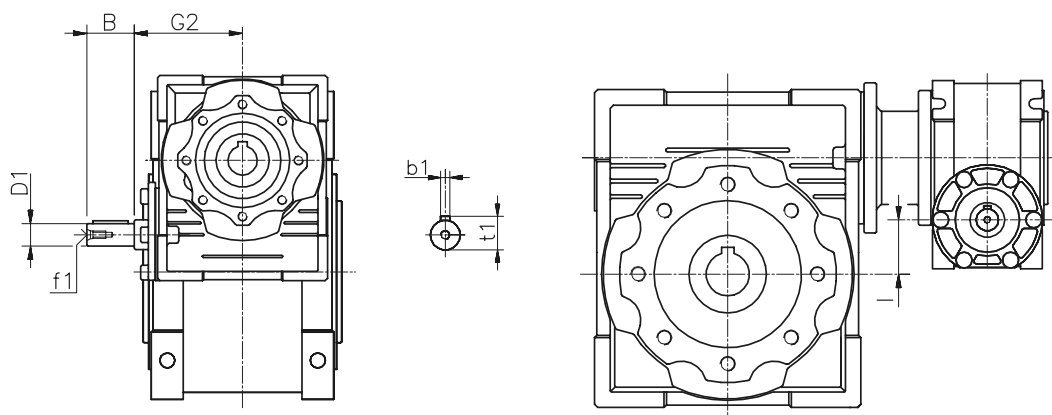


Dimensions ISW-SW

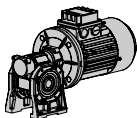


ISW-SW	030-040	030-050	030-063	040-075	040-090	050-105
B	20	20	20	23	23	30
D1	9 j6	9 j6	9 j6	11 j6	11 j6	14 j6
G2	51	51	51	60	60	74
I	10	20	33	35	50	60
b1	3	3	3	4	4	5
f1	-	-	-	-	-	M6
t1	10,2	10,2	10,2	12,5	12,5	16

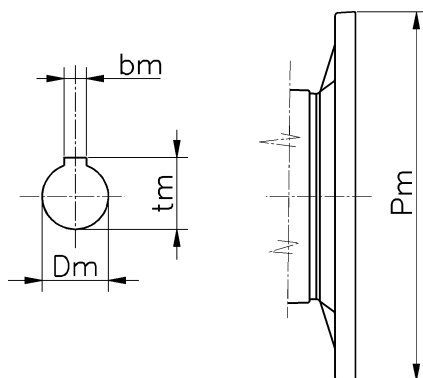
Dimensions ISW-SW



ISW-SW	050-110	063-130	063-150
B	30	40	40
D1	14 j6	19 j6	19 j6
G2	74	90	90
I	60	67	87
b1	5	6	6
f1	M6	M6	M6
t1	16	21,5	21,5



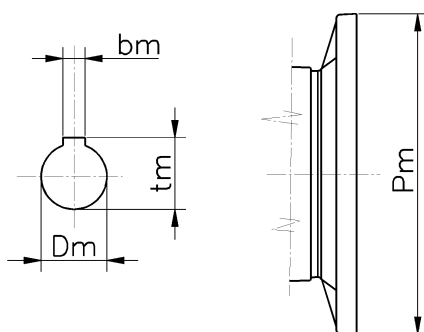
PAM B5 - Dimensions



B5	IEC										
	056	063	071	080	090	100	112	132	160	180	200
Pm	120	140	160	200	200	250	250	300	350	350	400
Dm	9	11	14	19	24	28	28	38	42	48	55
bm	3	4	5	6	8	8	8	10	12	14	16
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3	45,3	51,8	59,3

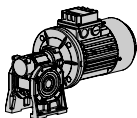
SW (105 ÷ 130) tm= 40,3 (IEC 132)

PAM B14 - Dimensions



B14	IEC							
	056	063	071	080	090	100	112	132
Pm	80	90	105	120	140	160	160	200
Dm	9	11	14	19	24	28	28	38
bm	3	4	5	6	8	8	8	10
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3

SW (105 ÷ 130) tm= 40,3 (IEC 132)



Worm gearmotors and reducers with torque limiter.

SWL

SWL - Feature

00

The torque limiter, in oil bath, is designed for sizes 040-050-063-075-090.

This device assures the protection of the transmission from accidental high overloads which could damage the gearbox and the power transmission components.

If necessary, it prevents reversing conditions of the worm gear unit by opportunely loosening the lock nut.

Features

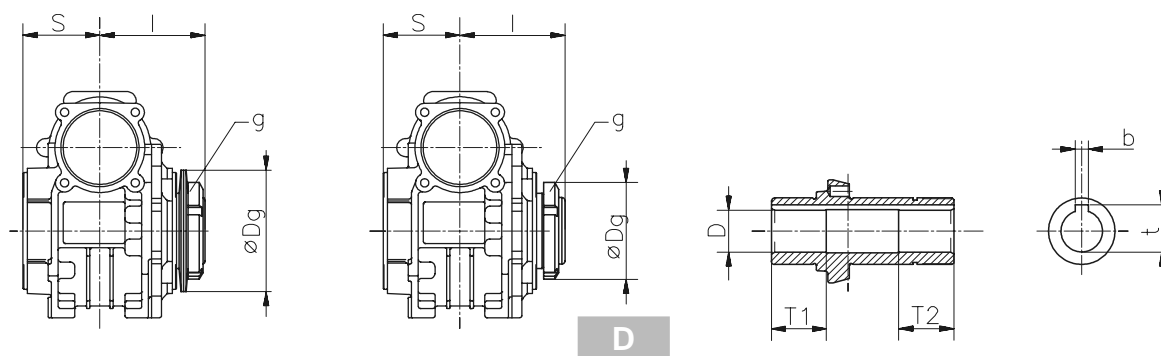
- external dimensions are almost the same as the version without torque limiter.
- no difference of the mountings.
- no difference of the hollow output shaft diameter with respect to the standard gearbox.
- the slipping torque can be easily adjusted by means of an external ring nut.
- no maintenance required on slipping components.
- functional features are the same as standard version.

Torque adjustment

The adjustment is carried out during assembly at about 80% of the nominal torque reported in the catalogue. This torque is transmitted by friction and so many factors could influence the adjustment value, like: temperature, running-in, vibrations, etc., therefore it is advised to adjust the torque limit by means of the lock nut when installing the gearbox on the machine, in accordance to application requirements.

SWL - Dimensions

The torque limiter is supplied in D position.



SWL 040

SWL 050 ÷ 090

	040	050	063	075	090
I	55	63,5	74	78,5	89,5
S	39	46	56	60	70
Dg	63	56	62	68	80
g	M30x1,5	M40x1,5	M45x1,5	M50x1,5	M60x2
b	6	8	8	8	10
t	20,8	28,3	28,3	31,3	38,3
D	Ø18	Ø25	Ø25	Ø28	Ø35
T1	28	33	37	40	45
T2	28	33	37	40	45

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