



SHF

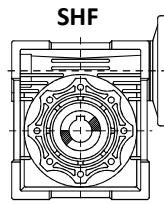


Motoreduktory ślimakowe **SHF**

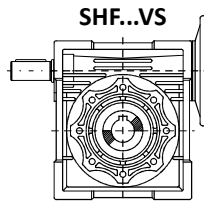
*Worm gearmotors **SHF***



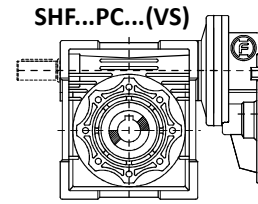
Oznaczenie kodowe



SHF



SHF...VS



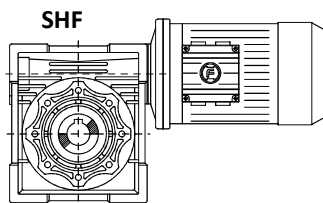
SHF...PC...(VS)

Classification

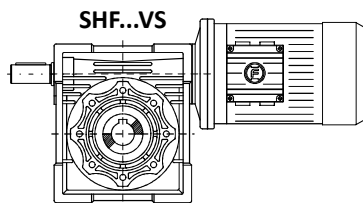
Przekładnia ślimakowa / Worm gearbox

SHF	040	PC063	i73.30	FA1	P63B5	M1
Typ / Type	Wielkość / Size	Stopień / Stages	Przełożenie Ratio	Element wyjściowy Output element	Kołnierzy wejściowy Input flange	Pozycja montażowa Mounting positions
SHF	025 030 040 050 063 075 090 110 130 150	brak stopnia / no stages PC063 PC071 PC080 PC090 VS L			Zgodnie z doбором See tables	

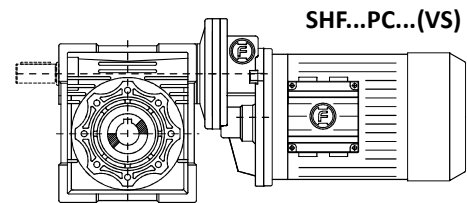
opis dla wersji L



SHF



SHF...VS



SHF...PC...(VS)

Motoreduktor ślimakowy / Worm gearmotors

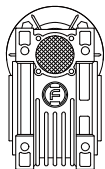
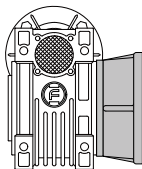
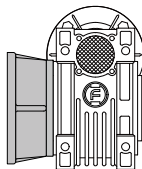
SHF	040	PC063	i73.30	FA1	P63B5	M1	0.09	6
Typ / Type	Wielkość Size	Stopień Stages	Przełożenie Ratio	Element wyjściowy Output element	Kołnierzy wejściowy Input flange	Pozycja montażowa Mounting positions	Moc silnika Motor power [kW]	Pola Poles
SHF	025 030 040 050 063 075 090 110 130 150	--- brak stopnia no stages PC063 PC071 PC080 PC090 VS L						2 4 6

Zgodnie z doбором
See tablesOkreśl pozycję puszek przyłączeniowych silnika
Terminal box position is required

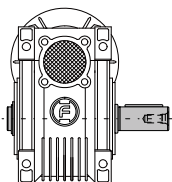
Element wyjściowy

Output element

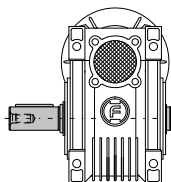
Kołnierzy wyjściowy / Output flange

Brak oznaczenia
No markFA1 FB1
FC1 FD1
FE1FA2 FB2
FC2 FD2
FE2

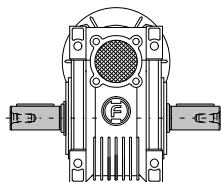
Wał wyjściowy / Output shaft



SS1

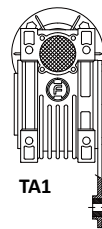


SS2

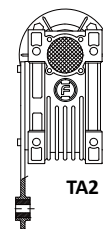


DD

Ramię reakcyjne / Torque arm



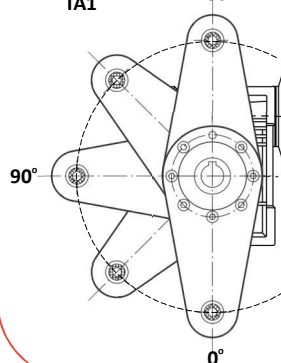
TA1



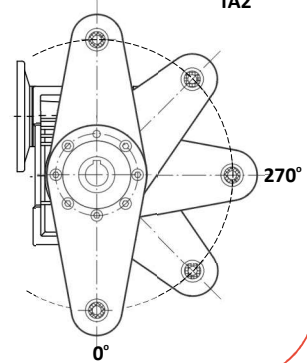
TA2

Kąt / Angle
TA1

180°

Kąt / Angle
TA2

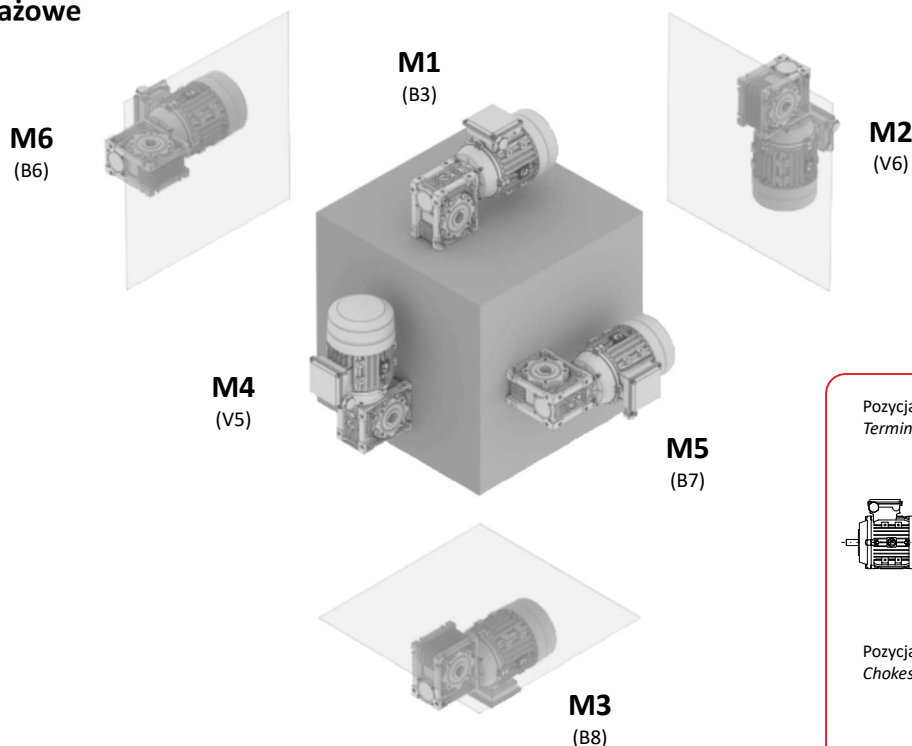
180°





Pozycje montażowe

Mounting positions



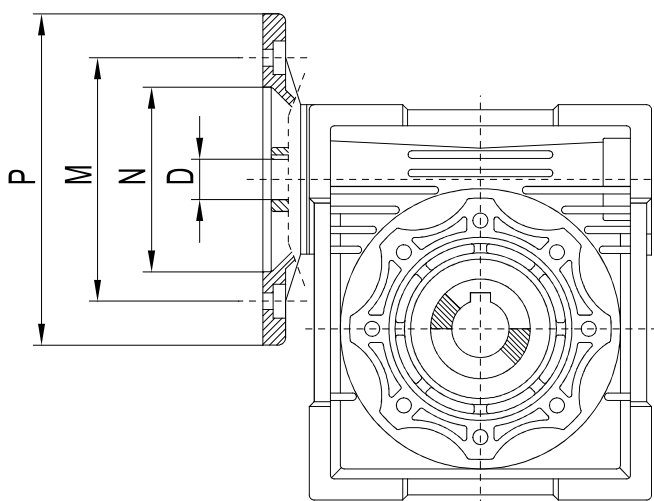
Wymiary kołnierza wejściowego IEC

IEC motor adapters

Wymiary kołnierza wejściowego IEC / IEC motor adapters

IEC	P56B14	P56B5	P63B5	P63B14	P71B5	P71B14	P80B5	P80B14	P90B5	P90B14	P100B5
D _{EB} [mm]	9	9	11	11	14	14	19	19	24	24	28
P [mm]	80	120	140	90	160	105	200	120	200	140	250
M [mm]	65	100	115	75	130	85	165	100	165	115	215
N [mm]	50	80	95	60	110	70	130	80	130	95	180

IEC	P100B14	P132B5	P160B5
D _{EB} [mm]	28	38	42
P [mm]	160	300	350
M [mm]	130	265	300
N [mm]	110	230	250





Dopuszczalne konfiguracje

Acceptable configurations

SHF 025... M_n 20 Nm			
i =	P56B14	P63B5 P63B14	P71B5 P71B14
100			
80			
60			
50			
40			
30			
25			
20			
15			
10			
7.5			

SHF 030... M_n 25 Nm				
i =	P56B5	P56B14	P63B5	P63B14
100				
80				
60				
50				
40				
30				
25				
20				
15				
10				
7.5				

SHF 040... M_n 55 Nm			
i =	P56B5	P63B5 P63B14	P71B5 P71B14
100			
80			
60			
50			
40			
30			
25			
20			
15			
10			
7.5			

SHF 050... M_n 85 Nm				
i =	P63B5	P71B5 P71B14	P80B5 P80B14	P90B5 P90B14
100				
80				
60				
50				
40				
30				
25				
20				
15				
10				
7.5				

SHF 063... M_n 180 Nm				
i =	P71B5 P71B14	P80B5 P80B14	P90B5 P90B14	P100B5 P100B14
100				
80				
60				
50				
40				
30				
25				
20				
15				
10				
7.5				

SHF 075... M_n 260 Nm					
i =	P71B5	P80B5 P80B14	P90B5 P90B14	P100B5 P100B14	P112B5 P112B14
100					
80					
60					
50					
40					
30					
25					
20					
15					
10					
7.5					

SHF 090... M_n 480 Nm				
i =	P80B5 P80B14	P90B5 P90B14	P100B5 P100B14	P112B5 P112B14
100				
80				
60				
50				
40				
30				
25				
20				
15				
10				
7.5				

SHF 110... M_n 660 Nm					
i =	P80B5	P90B5	P100B5	P112B5	P132B5
100					
80					
60					
50					
40					
30					
25					
20					
15					
10					
7.5					



Dopuszczalne konfiguracje

Acceptable configurations

SHF 130... M_n 1100 Nm					SHF 150... M_n 1595 Nm				
i =	P90B5	P100B5	P112B5	P132B5	i =	P100B5	P112B14	P132B5	P160B5
100					100				
80					80				
60					60				
50					50				
40					40				
30					30				
25					25				
20					20				
15					15				
10					10				
7.5					7.5				

SHF 040 PC... M_n 85 Nm					SHF 050 PC... M_n 125 Nm				
SHF 040 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45	SHF 050 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45
100					100				
80					80				
60					60				
50					50				
40					40				
30					30				
25					25				

SHF 063 PC... M_n 210 Nm					SHF 075 PC... M_n 340 Nm				
SHF 040 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45	SHF 050 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45
100					100				
80					80				
60					60				
50					50				
40					40				
30					30				
25					25				

SHF 090 PC... M_n 575 Nm					SHF 110 PC... M_n 990 Nm				
SHF 040 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45	SHF 050 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45
100					100				
80					80				
60					60				
50					50				
40					40				
30					30				
25					25				

SHF 130 PC... M_n 1150 Nm				
SHF 040 i =	PC 063 i = 2.93	PC 071 i = 2.94	PC 080 i = 3.00	PC 090 i = 2.45
100				
80				
60				
50				
40				
30				
25				



Parametry kół zębanych

Toothing data

SHF	i	5*	7.5	10	15	20	25	30	40	50	60	80	100
025	Z ₁	4	4	3	2	2		1	1	1	1		
	γ	30°57'	25°18'	19°31'	13°18'	10°53'		6°44'	5°29'	4°34'	3°56'		
	M _x	1.8	1.3	1.3	1.3	1		1.3	1	0.8	0.67		
	η _d	0.86	0.84	0.82	0.78	0.74		0.66	0.61	0.57	0.54		
	η _s	0.71	0.70	0.67	0.60	0.55		0.46	0.41	0.36	0.34		
030	Z ₁	4	4	3	2	2	1	1	1	1	1	1	
	γ	21°48'	18°50'	14°21'	9°40'	7°44'	5°34'	4°52'	3°53'	3°11'	2°46'	2°07'	
	M _x	2	1.44	1.44	1.44	1.1	1.7	1.44	1.1	0.88	0.75	0.56	
	η _d	0.86	0.84	0.81	0.76	0.72	0.67	0.64	0.58	0.54	0.50	0.44	
	η _s	0.71	0.66	0.62	0.54	0.50	0.43	0.39	0.35	0.31	0.27	0.23	
040	Z ₁	4	4	4	2	2	2	1	1	1	1	1	1
	γ	27°24'	21°48'	17°31'	11°18'	8°58'	7°41'	5°42'	4°30'	3°51'	3°17'	2°32'	2°05'
	M _x	2.8	2	1.5	2	1.5	1.25	2	1.5	1.25	1.04	0.78	0.63
	η _d	0.88	0.86	0.85	0.81	0.77	0.74	0.69	0.64	0.61	0.57	0.51	0.47
	η _s	0.72	0.69	0.65	0.58	0.53	0.5	0.44	0.4	0.36	0.32	0.28	0.24
050	Z ₁	4	4	4	2	2	2	1	1	1	1	1	1
	γ	23°49'	21°48'	17°42'	11°18'	9°04'	7°36'	5°42'	4°33'	3°49'	3°17'	2°33'	2°04'
	M _x	3.4	2.5	1.9	2.5	1.9	1.54	2.5	1.9	1.54	1.3	0.98	0.78
	η _d	0.87	0.86	0.84	0.8	0.77	0.74	0.7	0.65	0.61	0.57	0.51	0.49
	η _s	0.73	0.69	0.65	0.58	0.54	0.5	0.44	0.39	0.35	0.32	0.27	0.23
063	Z ₁		4	4	2	2	2	1	1	1	1	1	1
	γ		24°31'	20°19'	12°50'	10°29'	8°44'	6°30'	5°17'	4°23'	3°47'	2°59'	2°25'
	M _x		3.25	2.5	3.25	2.5	2	3.25	2.5	2	1.68	1.28	1.02
	η _d		0.87	0.86	0.82	0.8	0.77	0.73	0.69	0.65	0.61	0.56	0.5
	η _s		0.7	0.65	0.59	0.54	0.5	0.45	0.4	0.36	0.33	0.28	0.24
075	Z ₁		4	4	2	2	2	1	1	1	1	1	1
	γ		26°33'	21°48'	14°02'	11°18'	9°37'	7°07'	5°42'	4°50'	4°05'	3°15'	2°40'
	M _x		4	3	4	3	2.45	4	3	2.45	2	1.54	1.24
	η _d		0.88	0.87	0.84	0.81	0.79	0.75	0.71	0.68	0.64	0.59	0.54
	η _s		0.7	0.67	0.6	0.57	0.52	0.46	0.42	0.38	0.35	0.29	0.26
090	Z ₁		4	4	2	2	2	1	1	1	1	1	1
	γ		28°20'	23°26'	15°05'	12°14'	10°37'	7°40'	6°11'	5°21'	4°36'	3°36'	2°57'
	M _x		4.8	3.6	4.8	3.6	3	4.8	3.6	3	2.5	1.88	1.5
	η _d		0.89	0.88	0.85	0.83	0.81	0.77	0.74	0.71	0.68	0.62	0.58
	η _s		0.72	0.69	0.63	0.59	0.55	0.49	0.45	0.41	0.38	0.32	0.28
110	Z ₁		4	4	2	2	2	1	1	1	1	1	1
	γ		28°17'	27°35'	15°03'	14°38'	12°37'	7°39'	7°26'	6°23'	5°31'	4°23'	3°38'
	M _x		5.89	4.6	5.89	4.6	3.75	5.89	4.6	3.75	3.12	2.36	1.9
	η _d		0.89	0.88	0.85	0.84	0.83	0.78	0.77	0.74	0.71	0.66	0.62
	η _s		0.71	0.68	0.62	0.61	0.58	0.48	0.48	0.44	0.41	0.36	0.32
130	Z ₁		4	4	2	2	2	1	1	1	1	1	1
	γ		28°46'	26°15'	15°21'	13°51'	11°49'	7°48'	7°01'	5°58'	5°12'	4°05'	3°25'
	M _x		7	5.4	7	5.4	4.37	7	5.4	4.37	3.68	2.75	2.24
	η _d		0.9	0.88	0.86	0.85	0.83	0.79	0.77	0.74	0.71	0.67	0.63
	η _s		0.71	0.68	0.62	0.6	0.57	0.49	0.46	0.43	0.39	0.34	0.3
150	Z ₁		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'
	M _x		5.5	6.155	5.5	6.155	5	4.193	6.155	5	4.193	3.17	2.55
	η _d		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

* - dostępne tylko na specjalne zamówienie / only available on request



Tabela z danymi technicznymi

Poniżej znajduje się przykładowy wygląd i opis tabeli z danymi technicznymi przekładni hipoidalnych THF.

Technical data table

The following is an example of the design and description of the table with the THF gear unit technical data.

P_1 [kW]	n_2 [rpm]	M_2 [Nm]	f_s	$i =$		
0.12						
$n_1=1400$ [rpm]	24.0 28.7 35.0	45.0 38.0 31.0	2.90 3.50 4.20	58.36 48.86 40.09	THF 28B	P63B5

P_1 - moc silnika elektrycznego [kW]

n_1 - obroty wejściowe [rpm]

n_2 - obroty wyjściowe [rpm]

M_2 - wyjściowy moment obrotowy [Nm]

f_s - współczynnik pracy

$i =$ - przełożenie



- typ przekładni (zobacz oznaczenie kodowe)



- typ kołnierza wejściowego IEC (pod silnik)

P_1 - rated power driving motor [kW]

n_1 - input speed [rpm]

n_2 - output speed [rpm]

M_2 - rated output torque [Nm]

f_s - service factor

$i =$ - gear unit ratio

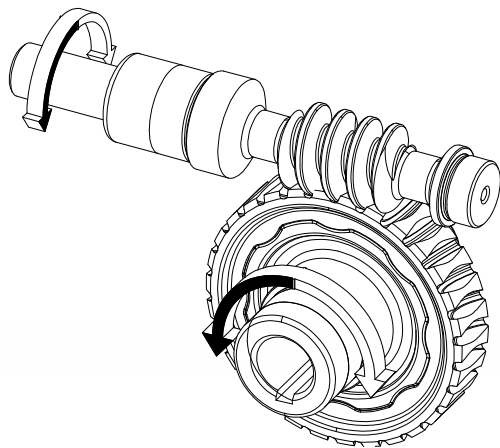


- gear unit type (see classification)

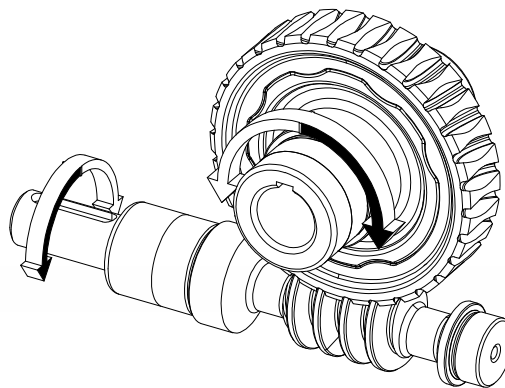


- input flange IEC (for AC motor)

Kierunki obrotu



Direction of rotation





Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.06					4p	
n ₁ =1400 [rpm]	186.7	2.6	4.2	7.5	SHF 025	P56B14
	140.0	3.4	3.5	10		
	93.3	4.9	2.5	15		
	70.0	6.1	2.0	20		
	46.7	8.2	1.6	30		
	35.0	10	1.3	40		
	28.0	12	0.9	50		
	23.3	14	0.7	60		
0.06					6p	
n ₁ =900 [rpm]	120.0	4.0	3.20	7.5	SHF 025	P56B14
	90.0	5.2	2.70	10		
	60.0	7.4	1.90	15		
	45.0	9.3	1.40	20		
	30.0	12	1.20	30		
	22.5	15	0.90	40		
	18.0	18	0.70	50		
	0.06					
n ₁ =1400 [rpm]	186.7	2.6	6.9	7.5	SHF 030	P56B5 P56B14
	140.0	3.4	5.4	10		
	93.3	4.7	3.8	15		
	70.0	6.0	3.0	20		
	56.0	7.0	3.0	25		
	46.7	8.0	2.5	30		
	35.0	9.7	1.9	40		
	28.0	11	1.5	50		
	23.3	13	1.3	60		
	17.5	14	0.9	80		
0.06					6p	
n ₁ =900 [rpm]	15.0	18	0.90	60	SHF 030	P56B5 P56B14
0.06					6p	
n ₁ =900 [rpm]	18.0	18	2.30	50	SHF 040	P56B5
	15.0	21	1.90	60		
	11.3	24	1.40	80		
	9.00	27	1.20	100		
0.09					4p	
n ₁ =1400 [rpm]	186.7	3.9	2.80	7.5	SHF 025	P56B14
	140.0	5.1	2.40	10		
	93.3	7.3	1.60	15		
	70.0	9.2	1.30	20		
	46.7	12	1.10	30		
	35.0	15	0.90	40		
0.09					4p	
n ₁ =1400 [rpm]	186.7	3.9	4.60	7.5	SHF 030	P56B5 P56B14
	140.0	5.0	3.60	10		
	93.3	7.1	2.50	15		
	70.0	9.0	2.00	20		
	56.0	10	2.00	25		
	46.7	12	1.70	30		
	35.0	14	1.20	40		
	28.0	17	1.00	50		
	23.3	19	0.90	60		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.09					6p	
n ₁ =900 [rpm]	120.0	5.9	3.40	7.5	SHF 030	P63B5 P63B14
	90.0	7.6	2.60	10		
	60.0	11	1.90	15		
	45.0	13	1.50	20		
	36.0	15	1.50	25		
	30.0	17	1.20	30		
	22.5	21	1.00	40		
	18.0	24	0.70	50		
0.09					4p	
n ₁ =1400 [rpm]	28.0	19	2.00	50	SHF 040	P56B5
	23.3	21	1.70	60		
	17.5	26	1.30	80		
	14.0	29	1.00	100		
0.09					6p	
n ₁ =900 [rpm]	30.0	19	2.60	30	SHF 040	P63B5 P63B14
	22.5	24	1.90	40		
	18.0	27	1.50	50		
	15.0	31	1.30	60		
	11.3	37	1.00	80		
	9.00	41	0.80	100		
0.09					6p	
n ₁ =900 [rpm]	12.3	47	1.30	73.3	SHF 040 PC 063	P63B5
	10.2	51	1.40	88		
	7.70	62	1.10	117.3		
	6.10	72	0.80	146.7		
	5.10	79	0.70	176		
0.09					6p	
n ₁ =900 [rpm]	15.0	32	2.30	60	SHF 050	P63B5
	11.3	37	1.80	80		
	9.00	42	1.30	100		
0.09					6p	
n ₁ =900 [rpm]	6.10	73	1.60	146.7	SHF 050 PC 063	P63B5
	5.10	81	1.30	176		
	3.80	94	0.90	234.6		
	3.00	106	0.70	293.3		
0.09					6p	
n ₁ =900 [rpm]	3.80	99	1.70	234.6	SHF 063 PC 063	P63B5
	3.00	109	1.40	293.3		
0.12					4p	
n ₁ =1400 [rpm]	186.7	5.2	3.40	7.5	SHF 030	P63B5 P63B14
	140.0	6.7	2.70	10		
	93.3	9.5	1.90	15		
	70.0	12	1.50	20		
	56.0	14	1.50	25		
	46.7	16	1.30	30		
	35.0	19	0.90	40		
	28.0	23	0.80	50		
0.12					6p	
n ₁ =900 [rpm]	120.0	7.9	2.50	7.5	SHF 030	P63B5 P63B14
	90.0	10	2.00	10		
	60.0	14	1.40	15		
	45.0	18	1.10	20		
	36.0	20	1.10	25		
	30.0	23	0.90	30		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.12						4p
n ₁ =1400 [rpm]	46.7	17	2.60	30	SHF 040	P63B5 P63B14
	35.0	21	1.90	40		
	28.0	25	1.50	50		
	23.3	28	1.30	60		
	17.5	34	1.00	80		
14.0	38	0.80	100			
0.12						6p
n ₁ =900 [rpm]	30.0	25	1.90	30	SHF 040	P63B5 P63B14
	22.5	32	1.40	40		
	18.0	36	1.20	50		
	15.0	41	0.90	60		
0.12						4p
n ₁ =1400 [rpm]	19.1	42	1.20	73.3	SHF 040 PC 063	P63B5
	15.9	46	1.20	88		
	11.9	57	0.90	117.3		
	9.50	66	0.70	146.7		
	7.90	74	0.60	176		
0.12						6p
n ₁ =900 [rpm]	12.3	62	1.00	73.3	SHF 040 PC 063	P63B5
	10.2	68	1.10	88		
	7.70	83	0.80	117.3		
0.12						4p
n ₁ =1400 [rpm]	23.3	29	2.30	60	SHF 050	P63B5
	17.5	35	1.90	80		
	14.0	40	1.40	100		
0.12						6p
n ₁ =900 [rpm]	22.5	32	2.60	40	SHF 050	P63B5
	18.0	38	2.00	50		
	15.0	42	1.70	60		
	11.3	50	1.40	80		
	9.00	56	1.00	100		
0.12						4p
n ₁ =1400 [rpm]	9.50	68	1.30	146.7	SHF 050 PC 063	P63B5
	8.00	75	1.10	176		
	5.80	88	0.80	234.6		
	4.80	98	0.70	293.3		
0.12						6p
n ₁ =900 [rpm]	12.3	63	1.70	73.3	SHF 050 PC 063	P63B5
	10.2	70	2.10	88		
	7.70	84	1.50	117.3		
	6.10	97	1.20	146.7		
	5.10	108	1.00	176		
	3.80	125	0.70	234.6		
0.12						4p
n ₁ =1400 [rpm]	6.00	92	1.50	234.6	SHF 063 PC 063	P63B5
	4.80	103	1.20	293.3		
0.12						6p
n ₁ =900 [rpm]	6.10	101	2.10	146.7	SHF 063 PC 063	P63B5
	5.10	112	1.80	176		
	3.80	131	1.30	234.6		
	3.10	145	1.00	293.3		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.18					4p	
n ₁ =1400 [rpm]	186.7	7.8	2.30	7.5	SHF 030	P63B5 P63B14
	140.0	10	1.80	10		
	93.3	14	1.30	15		
	70.0	18	1.00	20		
	56.0	21	1.00	25		
46.7	24	0.80	30			
0.18					4p	
n ₁ =1400 [rpm]	70.0	19	2.00	20	SHF 040	P63B5 P63B14
	56.0	23	1.70	25		
	46.7	26	1.70	30		
	35.0	32	1.30	40		
	28.0	38	1.00	50		
	23.3	43	0.80	60		
0.18					6p	
n ₁ =900 [rpm]	45.0	29	1.50	20	SHF 040	P71B5 P71B14
	36.0	34	1.30	25		
	30.0	38	1.30	30		
	22.5	47	1.00	40		
0.18					4p	
n ₁ =1400 [rpm]	19.1	64	0.80	73.3	SHF 040 PC 063	P63B5
	15.9	70	0.80	88		
	11.9	85	0.60	117.3		
0.18					4p	
n ₁ =1400 [rpm]	35.0	33	2.30	40	SHF 050	P63B5
	28.0	39	1.90	50		
	23.3	43	1.60	60		
	17.5	52	1.20	80		
	14.0	60	0.90	100		
0.18					6p	
n ₁ =900 [rpm]	18.0	56	1.40	50	SHF 050	P71B5 P71B14
	15.0	63	1.10	60		
	11.3	75	0.90	80		
0.18					4p	
n ₁ =1400 [rpm]	19.1	64	1.40	73.3	SHF 050 PC 063	P63B5
	15.9	71	1.50	88		
	11.9	87	1.10	117.3		
	9.50	101	0.90	146.7		
	7.90	113	0.70	176		
	5.80	133	0.60	234.6		
0.18					6p	
n ₁ =900 [rpm]	12.2	95	1.20	73.5	SHF 050 PC 071	P71B5
	10.2	105	1.40	88.2		
	7.70	126	1.00	117.6		
0.18					6p	
n ₁ =900 [rpm]	15.0	66	2.10	60	SHF 063	P71B5 P71B14
	11.3	79	1.60	80		
	9.00	90	1.40	100		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.18						4p
n ₁ =1400 [rpm]	9.50	103	1.70	146.7	SHF 063 PC 063	P63B5
	8.00	117	1.40	176		
	5.80	139	1.00	234.6		
	4.80	155	0.80	293.3		

0.18						6p
n ₁ =900 [rpm]	12.4	97	2.20	73.5	SHF 063 PC 071	P71B5
	10.2	107	2.40	88.2		
	7.70	131	1.80	117.6		
	6.10	152	1.40	147		
	5.10	168	1.20	176.4		
	3.80	197	0.90	235.2		
	3.10	218	0.70	294		

0.18						6p
n ₁ =900 [rpm]	5.10	179	1.70	176.4	SHF 075 PC 071	P71B5
	3.80	211	1.20	235.2		
	3.10	235	1.00	294		

0.25						4p
n ₁ =1400 [rpm]	186.7	11	3.60	7.5	SHF 040	P71B5 P71B14
	140.0	14	2.80	10		
	93.3	21	1.90	15		
	70.0	27	1.50	20		
	56.0	32	1.20	25		
	46.7	36	1.30	30		
	35.0	44	0.90	40		

0.25						6p
n ₁ =900 [rpm]	120.0	17	2.60	7.5	SHF 040	P71B5 P71B14
	90.0	22	2.00	10		
	60.0	31	1.40	15		
	45.0	40	1.10	20		
	36.0	48	0.90	25		
	30.0	53	0.90	30		

0.25						4p
n ₁ =1400 [rpm]	70.0	27	2.70	20	SHF 050	P71B5 P71B14
	56.0	32	2.20	25		
	46.7	37	2.30	30		
	35.0	46	1.70	40		
	28.0	54	1.40	50		
	23.3	60	1.10	60		
	17.5	72	0.90	80		

0.25						6p
n ₁ =900 [rpm]	45.0	40	1.90	20	SHF 050	P71B5 P71B14
	36.0	48	1.50	25		
	30.0	54	1.70	30		
	22.5	67	1.20	40		
	18.0	78	1.00	50		
	15.0	88	0.80	60		

0.25						4p
n ₁ =1400 [rpm]	19.0	88	1.00	73.5	SHF 050 PC 071	P71B5
	15.9	98	1.10	88.2		
	11.9	121	0.80	117.6		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.25						4p
n ₁ =1400 [rpm]	28.0	56	2.40	50	SHF 063	P71B5 P71B14
	23.3	63	2.00	60		
	17.5	78	1.60	80		
	14.0	87	1.40	100		

0.25						6p
n ₁ =900 [rpm]	18.0	81	1.80	50	SHF 063	P71B5 P71B14
	15.0	92	1.50	60		
	11.3	110	1.20	80		
	9.00	125	1.00	100		

0.25						4p
n ₁ =1400 [rpm]	19.0	91	1.80	73.5	SHF 063 PC 071	P71B5
	15.9	100	2.00	88.2		
	11.9	125	1.50	117.6		
	9.50	143	1.20	147		
	7.90	163	1.00	176.4		
	6.00	192	0.70	235.2		
	4.80	215	0.60	294		

0.25						6p
n ₁ =900 [rpm]	12.4	135	1.60	73.5	SHF 063 PC 071	P71B5
	10.2	148	1.80	88.2		
	7.70	181	1.30	117.6		
	6.10	211	1.00	147		

0.25						4p
n ₁ =1400 [rpm]	17.5	82	2.30	80	SHF 075	P71B5
	14.0	94	1.90	100		

0.25						6p
n ₁ =900 [rpm]	11.3	117	1.70	80	SHF 075	P71B5
	9.00	133	1.40	100		

0.25						4p
n ₁ =1400 [rpm]	9.50	151	1.70	147	SHF 075 PC 071	P71B5
	7.90	172	1.40	176.4		
	6.00	201	1.10	235.2		
	4.80	230	0.90	294		

0.25						6p
n ₁ =900 [rpm]	12.4	139	2.40	73.5	SHF 075 PC 071	P71B5
	10.2	155	2.50	88.2		
	7.70	191	1.90	117.6		
	6.10	219	1.50	147		
	5.10	248	1.20	176.4		

0.25						6p
n ₁ =900 [rpm]	5.10	263	1.90	176.4	SHF 090 PC 071	P71B5
	3.80	318	1.40	235.2		
	3.10	358	1.10	294		

0.37						4p
n ₁ =1400 [rpm]	186.7	16	2.40	7.5	SHF 040	P71B5 P71B14
	140.0	21	1.90	10		
	93.3	31	1.30	15		
	70.0	39	1.00	20		
	56.0	47	0.80	25		
	46.7	53	0.80	30		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.37						4p
n ₁ =1400 [rpm]	140.0	22	3.30	10	SHF 050	P71B5 P71B14
	93.3	31	2.40	15		
	70.0	40	1.80	20		
	56.0	48	1.50	25		
	46.7	55	1.50	30		
	35.0	68	1.10	40		
	28.0	80	0.90	50		
	23.3	89	0.80	60		
0.37						6p
n ₁ =900 [rpm]	120.0	25	3.30	7.5	SHF 050	P80B5 P80B14
	90.0	33	2.50	10		
	60.0	47	1.80	15		
	45.0	60	1.30	20		
	36.0	72	1.00	25		
	30.0	80	1.10	30		
0.37						4p
n ₁ =1400 [rpm]	35.0	71	2.10	40	SHF 063	P71B5 P71B14
	28.0	83	1.60	50		
	23.3	94	1.40	60		
	17.5	115	1.10	80		
	14.0	129	0.90	100		
0.37						6p
n ₁ =900 [rpm]	45.0	60	2.40	20	SHF 063	P80B5 P80B14
	36.0	74	1.90	25		
	30.0	82	2.10	30		
	22.5	102	1.60	40		
	18.0	120	1.20	50		
	15.0	137	1.00	60		
0.37						4p
n ₁ =1400 [rpm]	19.0	134	1.20	73.5	SHF 063 PC 071	P71B5
	15.9	148	1.40	88.2		
	11.9	185	1.00	117.6		
	9.50	212	0.80	147		
0.37						4p
n ₁ =1400 [rpm]	23.3	98	2.00	60	SHF 075	P71B5
	17.5	121	1.60	80		
	14.0	139	1.30	100		
0.37						6p
n ₁ =900 [rpm]	18.0	126	1.80	50	SHF 075	P80B5 P80B14
	15.0	144	1.50	60		
	11.3	173	1.20	80		
	9.00	196	1.00	100		
0.37						4p
n ₁ =1400 [rpm]	19.0	138	1.80	73.5	SHF 075 PC 071	P71B5
	15.9	154	1.90	88.2		
	11.9	191	1.50	117.6		
	9.50	223	1.10	147		
	7.90	254	0.90	176.4		
0.37						6p
n ₁ =900 [rpm]	12.0	206	1.60	75	SHF 075 PC 080	P80B5
	10.0	230	1.70	90		
	7.50	283	1.30	120		
	6.00	324	1.00	150		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.37						6p
n ₁ =900 [rpm]	11.3	185	1.70	80	SHF 090	P80B5 P80B14
	9.00	212	1.30	100		
0.37						4p
n ₁ =1400 [rpm]	7.90	268	1.50	176.4	SHF 090 PC 071	P71B5
	6.00	321	1.10	235.2		
	4.80	371	0.90	294		
0.37						6p
n ₁ =900 [rpm]	6.00	347	1.60	150	SHF 090 PC 080	P80B5
	5.00	389	1.30	180		
	3.80	471	1.00	240		
0.37						6p
n ₁ =900 [rpm]	3.80	509	1.60	240	SHF 110 PC 080	P80B5
	3.00	577	1.30	300		
0.55						4p
n ₁ =1400 [rpm]	186.7	25	2.90	7.5	SHF 050	P80B5 P80B14
	140.0	32	2.20	10		
	93.3	46	1.60	15		
	70.0	59	1.20	20		
	56.0	71	1.00	25		
	46.7	81	1.00	30		
0.55						6p
n ₁ =900 [rpm]	120.0	38	2.20	7.5	SHF 050	P80B5 P80B14
	90.0	49	1.70	10		
	60.0	69	1.20	15		
	45.0	89	0.90	20		
0.55						4p
n ₁ =1400 [rpm]	70.0	61	2.20	20	SHF 063	P80B5 P80B14
	56.0	73	1.80	25		
	46.7	83	1.90	30		
	35.0	105	1.40	40		
	28.0	124	1.10	50		
	23.3	140	0.90	60		
0.55						6p
n ₁ =900 [rpm]	60.0	71	2.20	15	SHF 063	P80B5 P80B14
	45.0	90	1.60	20		
	36.0	109	1.30	25		
	30.0	123	1.40	30		
	22.5	152	1.10	40		
0.55						4p
n ₁ =1400 [rpm]	35.0	108	2.00	40	SHF 075	P80B5 P80B14
	28.0	129	1.60	50		
	23.3	146	1.40	60		
	17.5	180	1.10	80		
	14.0	206	0.90	100		
0.55						6p
n ₁ =900 [rpm]	30.0	128	2.00	30	SHF 075	P80B5 P80B14
	22.5	159	1.50	40		
	18.0	187	1.20	50		
	15.0	214	1.00	60		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
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0.55						4p
n ₁ =1400 [rpm]	18.7	205	1.20	75	SHF 075 PC 080	P80B5
	15.6	230	1.30	90		
	11.7	284	1.00	120		
	9.30	332	0.80	150		

0.55						6p
n ₁ =900 [rpm]	12.0	306	1.10	75	SHF 075 PC 080	P80B5
	10.0	341	1.10	90		

0.55						4p
n ₁ =1400 [rpm]	17.5	189	1.50	80	SHF 090	P80B5 P80B14
	14.0	221	1.20	100		

0.55						6p
n ₁ =900 [rpm]	18.0	198	2.00	50	SHF 090	P80B5 P80B14
	15.0	224	1.60	60		
	11.3	275	1.10	80		
	9.00	315	0.90	100		

0.55						4p
n ₁ =1400 [rpm]	15.6	240	2.30	90	SHF 090 PC 080	P80B5
	11.7	297	1.60	120		
	9.30	355	1.30	150		
	7.80	398	1.00	180		

0.55						6p
n ₁ =900 [rpm]	10.0	357	2.00	90	SHF 090 PC 080	P80B5
	7.50	441	1.40	120		
	6.00	516	1.10	150		
	5.00	578	0.90	180		

0.55						4p
n ₁ =1400 [rpm]	17.5	201	2.60	80	SHF 110	P80B5
	14.0	236	2.00	100		

0.55						6p
n ₁ =900 [rpm]	11.3	294	1.90	80	SHF 110	P80B5
	9.00	338	1.50	100		

0.55						4p
n ₁ =1400 [rpm]	7.80	425	1.80	180	SHF 110 PC 080	P80B5
	5.80	513	1.30	240		
	4.70	597	1.00	300		

0.55						6p
n ₁ =900 [rpm]	7.50	462	2.60	120	SHF 110 PC 080	P80B5
	6.00	552	2.00	150		
	5.00	620	1.60	180		
	3.80	756	1.10	240		

0.55						6p
n ₁ =900 [rpm]	3.80	756	1.60	240	SHF 130 PC 080	P80B5
	3.00	858	1.30	300		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
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0.75						4p
n ₁ =1400 [rpm]	186.7	34	2.10	7.5	SHF 050	P80B5 P80B14
	140.0	44	1.60	10		
	93.3	63	1.20	15		
	70.0	81	0.90	20		

0.75						4p
n ₁ =1400 [rpm]	93.3	64	2.20	15	SHF 063	P80B5 P80B14
	70.0	83	1.60	20		
	56.0	100	1.30	25		
	46.7	114	1.40	30		
	35.0	143	1.00	40		

0.75						6p
n ₁ =900 [rpm]	120.0	52	2.90	7.5	SHF 063	P90B5 P90B14
	90.0	68	2.30	10		
	60.0	97	1.60	15		
	45.0	123	1.20	20		
	36.0	149	0.90	25		
	30.0	167	1.00	30		

0.75						4p
n ₁ =1400 [rpm]	56.0	102	2.00	25	SHF 075	P80B5 P80B14
	46.7	117	2.00	30		
	35.0	147	1.50	40		
	28.0	177	1.20	50		
	23.3	200	1.00	60		

0.75						6p
n ₁ =900 [rpm]	60.0	98	2.40	15	SHF 075	P90B5 P90B14
	45.0	126	1.90	20		
	36.0	153	1.40	25		
	30.0	174	1.50	30		
	22.5	216	1.10	40		

0.75						4p
n ₁ =1400 [rpm]	18.7	280	0.90	75	SHF 075 PC 080	P80B5
	15.6	313	1.00	90		

0.75						4p
n ₁ =1400 [rpm]	28.0	184	1.80	50	SHF 090	P80B5 P80B14
	23.3	212	1.50	60		
	17.5	258	1.10	80		
	14.0	302	0.90	100		

0.75						6p
n ₁ =900 [rpm]	30.0	179	2.60	30	SHF 090	P90B5 P90B14
	22.5	226	1.80	40		
	18.0	271	1.40	50		
	15.0	306	1.10	60		

0.75						4p
n ₁ =1400 [rpm]	15.6	327	1.70	90	SHF 090 PC 080	P80B5
	11.7	405	1.20	120		
	9.30	483	0.90	150		
	7.80	543	0.70	180		

0.75						4p
n ₁ =1400 [rpm]	17.5	274	1.90	80	SHF 110	P80B5
	14.0	322	1.50	100		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
0.75 6p						
n ₁ =900 [rpm]	15.0	325	2.10	60	SHF 110	P90B5
	11.3	401	1.40	80		
	9.00	462	1.10	100		
0.75 4p						
n ₁ =1400 [rpm]	11.7	430	2.20	120	SHF 110	P80B5
	9.30	506	1.70	150	PC 080	
	7.80	580	1.30	180		
	5.80	700	0.90	240		
0.75 6p						
n ₁ =900 [rpm]	12.2	393	3.20	73.5	SHF 110	P90B5
	9.20	508	2.30	98	PC 090	
	7.30	607	1.80	122.5		
	6.10	682	1.50	147		
	4.60	832	1.00	196		
0.75 6p						
n ₁ =900 [rpm]	11.3	407	2.10	80	SHF 130	P90B5
	9.00	470	1.70	100		
0.75 4p						
n ₁ =1400 [rpm]	5.80	712	1.40	240	SHF 130	P80B5
	4.70	813	1.10	300	PC 080	
0.75 6p						
n ₁ =900 [rpm]	12.2	399	4.40	73.5	SHF 130	P90B5
	9.20	508	3.20	98	PC 090	
	7.30	607	2.60	122.5		
	6.10	682	2.10	147		
	4.60	832	1.50	196		
	3.70	944	1.20	245		
1.10 6p						
n ₁ =900 [rpm]	120.0	76	2.00	7.5	SHF 063	P90B5
	90.0	99	1.50	10		P90B14
	60.0	142	1.10	15		
	45.0	180	0.80	20		
1.10 4p						
n ₁ =1400 [rpm]	186.7	50	2.60	7.5	SHF 063	P90B5
	140.0	65	2.00	10		P90B14
	93.3	93	1.50	15		
	70.0	122	1.10	20		
	56.0	146	0.90	25		
	46.7	167	1.00	30		
1.10 6p						
n ₁ =900 [rpm]	90.0	100	2.30	10	SHF 075	P90B5
	60.0	144	1.60	15		P90B14
	45.0	184	1.30	20		
	36.0	225	1.00	25		
	30.0	256	1.00	30		
1.10 4p						
n ₁ =1400 [rpm]	93.3	96	2.10	15	SHF 075	P90B5
	70.0	123	1.70	20		P90B14
	56.0	150	1.30	25		
	46.7	171	1.30	30		
	35.0	216	1.00	40		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
1.10 6p						
n ₁ =900 [rpm]	36.0	231	1.60	25	SHF 090	P90B5
	30.0	263	1.80	30		P90B14
	22.5	331	1.20	40		
	18.0	397	1.00	50		
	15.0	448	0.80	60		
1.10 4p						
n ₁ =1400 [rpm]	35.0	225	1.60	40	SHF 090	P90B5
	28.0	270	1.30	50		P90B14
	23.3	311	1.00	60		
1.10 6p						
n ₁ =900 [rpm]	22.5	345	2.30	40	SHF 110	P90B5
	18.0	414	1.80	50		
	15.0	476	1.40	60		
	11.3	588	1.00	80		
1.10 4p						
n ₁ =1400 [rpm]	28.0	281	2.30	50	SHF 110	P90B5
	23.3	324	1.90	60		
	17.5	402	1.30	80		
	14.0	473	1.00	100		
1.10 6p						
n ₁ =900 [rpm]	12.2	576	2.20	73.5	SHF 110	P90B5
	9.20	746	1.60	98	PC 090	
	7.30	890	1.20	122.5		
	6.10	1000	1.00	147		
1.10 4p						
n ₁ =1400 [rpm]	19.0	392	2.50	73.5	SHF 110	P90B5
	14.3	508	1.80	98	PC 090	
	11.4	599	1.50	122.5		
	9.50	686	1.10	147		
	7.10	828	0.80	196		
1.10 6p						
n ₁ =900 [rpm]	11.3	598	1.40	80	SHF 130	P90B5
	9.00	689	1.10	100		
1.10 4p						
n ₁ =1400 [rpm]	17.5	408	2.10	80	SHF 130	P90B5
	14.0	480	1.50	100		
1.10 6p						
n ₁ =900 [rpm]	12.2	585	3.00	73.5	SHF 130	P90B5
	9.20	746	2.20	98	PC 090	
	7.30	890	1.70	122.5		
	6.10	1000	1.40	147		
	4.60	1220	1.00	196		
1.10 4p						
n ₁ =1400 [rpm]	19.0	398	3.50	73.5	SHF 130	P90B5
	14.3	508	2.60	98	PC 090	
	11.4	608	2.00	122.5		
	9.50	686	1.60	147		
	7.10	843	1.20	196		
	5.70	962	0.90	245		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
1.50						4p
n ₁ =1400 [rpm]	186.7	68	1.90	7.5	SHF 063	P90B5 P90B14
	140.0	89	1.50	10		
	93.3	127	1.10	15		
	70.0	166	0.80	20		
1.50						6p
n ₁ =900 [rpm]	120.0	105	2.00	7.5	SHF 075	P100B5 P100B14
	90.0	137	1.70	10		
	60.0	196	1.20	15		
1.50						4p
n ₁ =1400 [rpm]	140.0	90	2.20	10	SHF 075	P90B5 P90B14
	93.3	130	1.50	15		
	70.0	168	1.30	20		
	56.0	205	1.00	25		
	46.7	233	1.00	30		
1.50						6p
n ₁ =900 [rpm]	90.0	138	2.70	10	SHF 090	P100B5 P100B14
	60.0	201	2.10	15		
	45.0	258	1.50	20		
	36.0	314	1.20	25		
	30.0	358	1.30	30		
1.50						4p
n ₁ =1400 [rpm]	70.0	172	2.10	20	SHF 090	P90B5 P90B14
	56.0	210	1.60	25		
	46.7	239	1.70	30		
	35.0	307	1.20	40		
	28.0	368	0.90	50		
	23.3	424	0.80	60		
1.50						6p
n ₁ =900 [rpm]	45.0	264	2.70	20	SHF 110	P100B5
	36.0	322	2.40	25		
	30.0	363	2.30	30		
	22.5	471	1.70	40		
	18.0	565	1.30	50		
	15.0	649	1.10	60		
1.50						4p
n ₁ =1400 [rpm]	35.0	319	2.20	40	SHF 110	P90B5
	28.0	384	1.70	50		
	23.3	442	1.40	60		
	17.5	548	0.90	80		
1.50						4p
n ₁ =1400 [rpm]	19.0	535	1.90	73.5	SHF 110 PC 090	P90B5
	14.3	693	1.30	98		
	11.4	817	1.10	122.5		
	9.50	936	0.80	147		
1.50						6p
n ₁ =900 [rpm]	22.5	478	2.30	40	SHF 130	P100B5
	18.0	573	1.80	50		
	15.0	659	1.40	60		
	11.3	815	1.10	80		

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
1.50					4p	
n ₁ =1400 [rpm]	17.5	557	1.50	80	SHF 130	P90B5
	14.0	655	1.10	100		
1.50					4p	
n ₁ =1400 [rpm]	19.0	542	2.60	73.5	SHF 130 PC 090	P90B5
	14.3	693	1.90	98		
	11.4	830	1.50	122.5		
	9.50	936	1.10	147		
	7.10	1149	0.80	196		
2.20					4p	
n ₁ =1400 [rpm]	186.7	100	1.80	7.5	SHF 075	P100B5 P100B14
	140.0	132	1.50	10		
	93.3	191	1.00	15		
2.20					4p	
n ₁ =1400 [rpm]	186.7	101	2.90	7.5	SHF 090	P100B5 P100B14
	140.0	134	2.30	10		
	93.3	194	1.90	15		
	70.0	252	1.40	20		
	56.0	308	1.10	25		
	46.7	351	1.20	30		
2.20					6p	
n ₁ =900 [rpm]	120.0	156	2.20	7.5	SHF 090	P112B5 P112B14
	90.0	203	1.80	10		
	60.0	294	1.40	15		
	45.0	378	1.00	20		
2.20					4p	
n ₁ =1400 [rpm]	70.0	255	2.50	20	SHF 110	P100B5
	56.0	315	2.20	25		
	46.7	356	2.00	30		
	35.0	468	1.50	40		
	28.0	563	1.20	50		
	23.3	648	1.00	60		
2.20					6p	
n ₁ =900 [rpm]	90.0	205	3.50	10	SHF 110	P112B5
	60.0	298	2.60	15		
	45.0	388	1.90	20		
	36.0	473	1.60	25		
	30.0	532	1.60	30		
2.20					4p	
n ₁ =1400 [rpm]	35.0	468	2.20	40	SHF 130	P100B5
	28.0	563	1.70	50		
	23.3	648	1.40	60		
	17.5	816	1.00	80		
2.20					6p	
n ₁ =900 [rpm]	36.0	479	2.20	25	SHF 130	P112B5
	30.0	546	2.10	30		
	22.5	700	1.60	40		
	18.0	840	1.20	50		
	15.0	966	1.00	60		
2.20					4p	
n ₁ =1400 [rpm]	17.5	816	1.40	80	SHF 150	P100B5
	14.0	960	1.00	100		



Dane techniczne

Technical data

P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
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3.00 4p

n ₁ =1400 [rpm]	186.7 140.0 93.3	137 180 261	1.40 1.10 1.00	7.5 10 15	SHF 075	P100B5 P100B14
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3.00 4p

n ₁ =1400 [rpm]	186.7 140.0 93.3 70.0 56.0 46.7	138 182 264 344 420 479	2.10 1.70 1.40 1.00 0.80 0.90	7.5 10 15 20 25 30	SHF 090	P100B5 P100B14
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3.00 4p

n ₁ =1400 [rpm]	93.3 70.0 56.0 46.7 35.0 28.0	264 348 430 485 638 767	2.50 1.90 1.60 1.50 1.10 0.90	15 20 25 30 40 50	SHF 110	P100B5
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3.00 6p

n ₁ =900 [rpm]	120.0 90.0 60.0 45.0	212 280 406 528	3.10 2.50 1.90 1.40	7.5 10 15 20	SHF 110	P132B5
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3.00 4p

n ₁ =1400 [rpm]	56.0 46.7 35.0 28.0 23.3 17.5	430 491 638 767 884 1113	2.20 2.10 1.60 1.30 1.00 0.80	25 30 40 50 60 80	SHF 130	P100B5
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3.00 6p

n ₁ =900 [rpm]	90.0 60.0 45.0	280 406 535	3.40 2.60 1.90	10 15 20	SHF 130	P132B5
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3.00 6p

n ₁ =900 [rpm]	36.0 30.0 22.5	653 745 955	1.60 1.60 1.20	25 30 40	SHF 130	P132B5
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3.00 4p

n ₁ =1400 [rpm]	28.0 23.3 17.5 14.0	778 896 1113 1310	1.80 1.40 1.00 0.80	50 60 80 100	SHF 150	P100B5
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4.00 4p

n ₁ =1400 [rpm]	186.7 140.0 93.3 70.0	184 243 352 458	1.60 1.30 1.00 0.80	7.5 10 15 20	SHF 090	P112B5 P112B14
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P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
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4.00 4p

n ₁ =1400 [rpm]	140.0 93.3 70.0 56.0 46.7	243 352 464 573 647	2.50 1.90 1.40 1.20 1.10	10 15 20 25 30	SHF 110	P112B5
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4.00 6p

n ₁ =900 [rpm]	120.0 90.0 60.0	283 374 541	2.30 1.90 1.40	7.5 10 15	SHF 110	P132B5
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4.00 4p

n ₁ =1400 [rpm]	56.0 46.7 35.0 28.0 23.3	573 655 851 1023 1179	1.60 1.60 1.20 1.00 0.80	25 30 40 50 60	SHF 130	P112B5
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4.00 6p

n ₁ =900 [rpm]	120.0 90.0 60.0 45.0 36.0	287 374 541 713 870	3.10 2.60 2.00 1.50 1.20	7.5 10 15 20 25	SHF 130	P132B5
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4.00 4p

n ₁ =1400 [rpm]	28.0 23.3 17.5	1037 1195 1484	1.40 1.10 0.80	50 60 80	SHF 150	P112B5
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5.50 4p

n ₁ =1400 [rpm]	186.7 140.0 93.3 70.0	253 334 484 638	2.20 1.80 1.40 1.00	7.5 10 15 20	SHF 110	P132B5
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5.50 4p

n ₁ =1400 [rpm]	140.0 93.3 70.0 56.0 46.7 35.0	334 490 645 788 900 1171	2.50 1.90 1.40 1.20 1.20 0.90	10 15 20 25 30 40	SHF 130	P132B5
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5.50 4p

n ₁ =1400 [rpm]	70.0 56.0 46.7 35.0 28.0 23.3	645 788 934 1171 1426 1643	2.00 1.50 1.30 1.30 1.00 0.80	20 25 30 40 50 60	SHF 150	P132B5
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7.50 4p

n ₁ =1400 [rpm]	186.7 140.0 93.3	345 455 660	1.60 1.30 1.00	7.5 10 15	SHF 110	P132B5
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Dane techniczne

Technical data

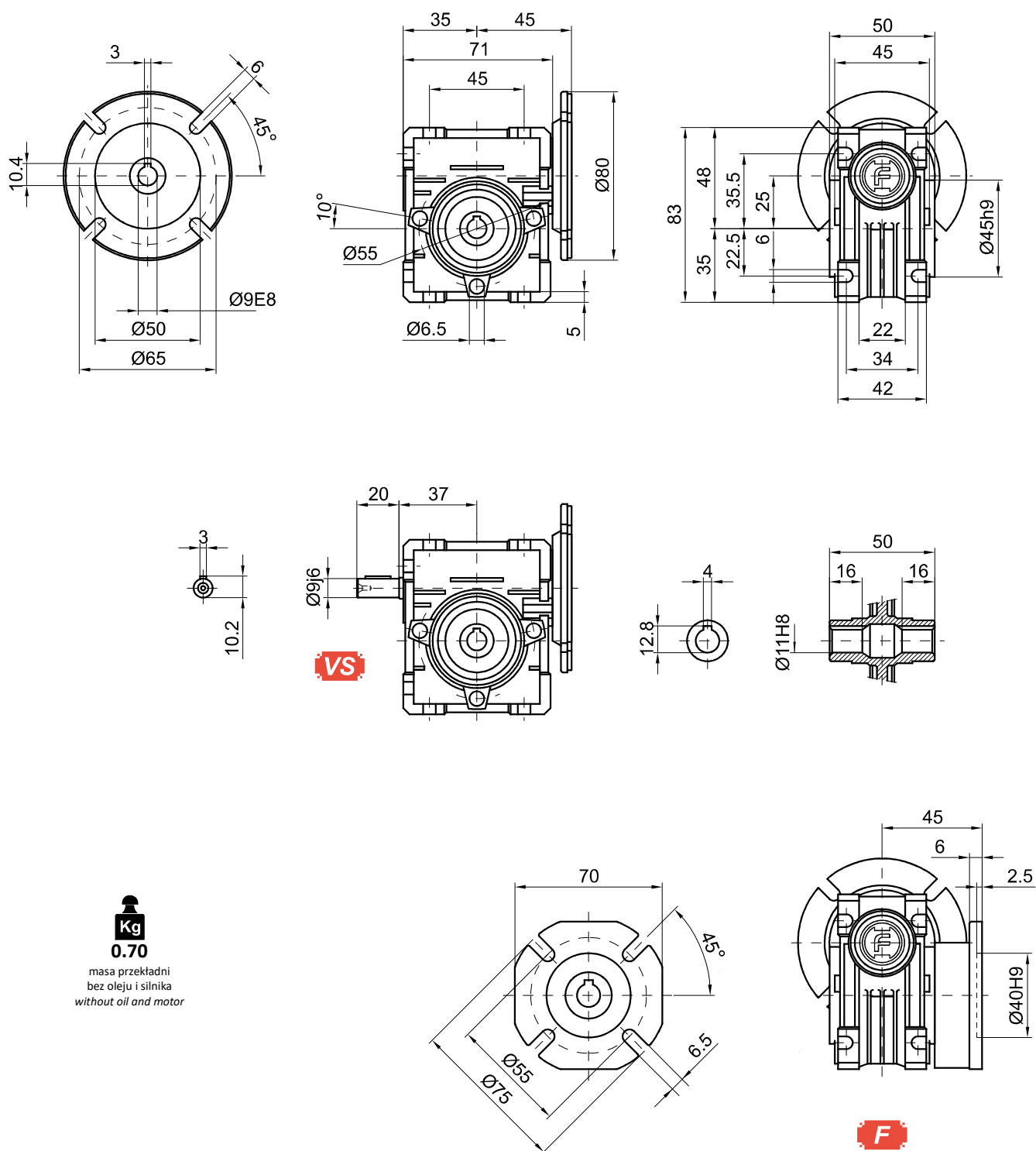
P ₁ [kW]	n ₂ [rpm]	M ₂ [Nm]	f _s	i =		
7.50					4p	
n ₁ =1400 [rpm]	186.7	349	2.10	7.5	SHF 130	P132B5
	140.0	455	1.80	10		
	93.3	668	1.40	15		
	70.0	880	1.00	20		
	56.0	1074	0.90	25		
	46.7	1228	0.80	30		
	35.0	1596	0.70	40		
7.50					4p	
n ₁ =1400 [rpm]	70.0	880	1.50	20	SHF 150	P132B5
	56.0	1074	1.10	25		
	46.7	1274	0.90	30		
	35.0	1596	1.00	40		
11.0					4p	
n ₁ =1400 [rpm]	186.7	512	2.30	7.5	SHF 150	P160B5
	140.0	675	1.80	10		
	93.3	990	1.30	15		
	70.0	1291	1.00	20		
	56.0	1576	0.80	25		
15.0					4p	
n ₁ =1400 [rpm]	186.7	698	1.70	7.5	SHF 150	P160B5
	140.0	921	1.30	10		
	93.3	1351	0.90	15		
	70.0	1760	0.70	20		



Wymiary przekładni

Dimensions

SHF - 025 - ... - P(IEC)



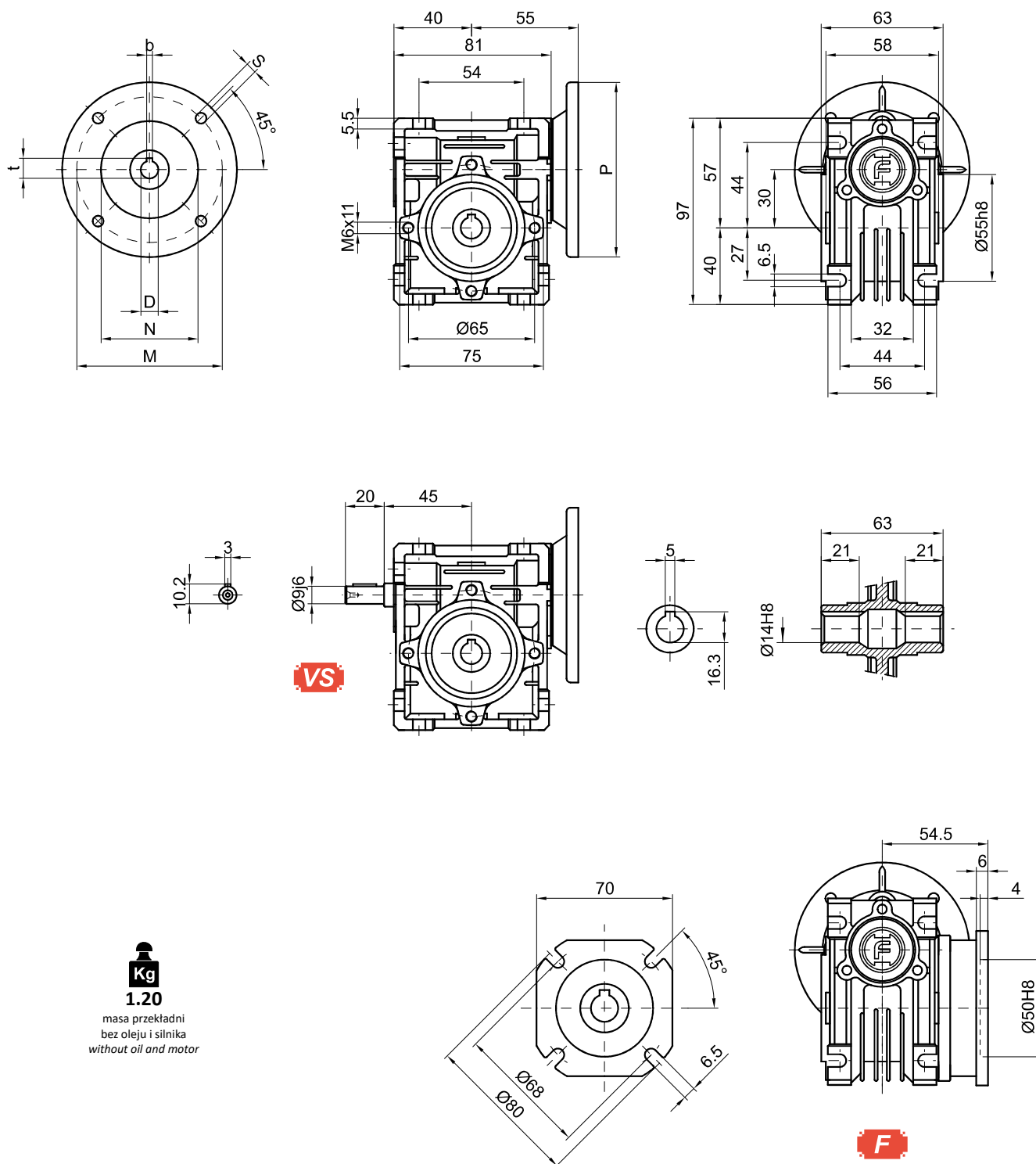
Kg
0.70
masa przekładni
bez oleju i silnika
without oil and motor



Wymiary przekładni

Dimensions

SHF - 030 - ... - P(IEC)



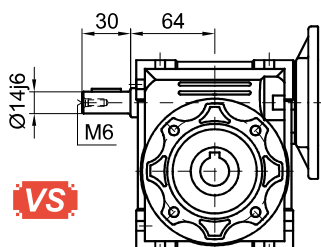
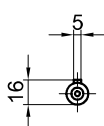
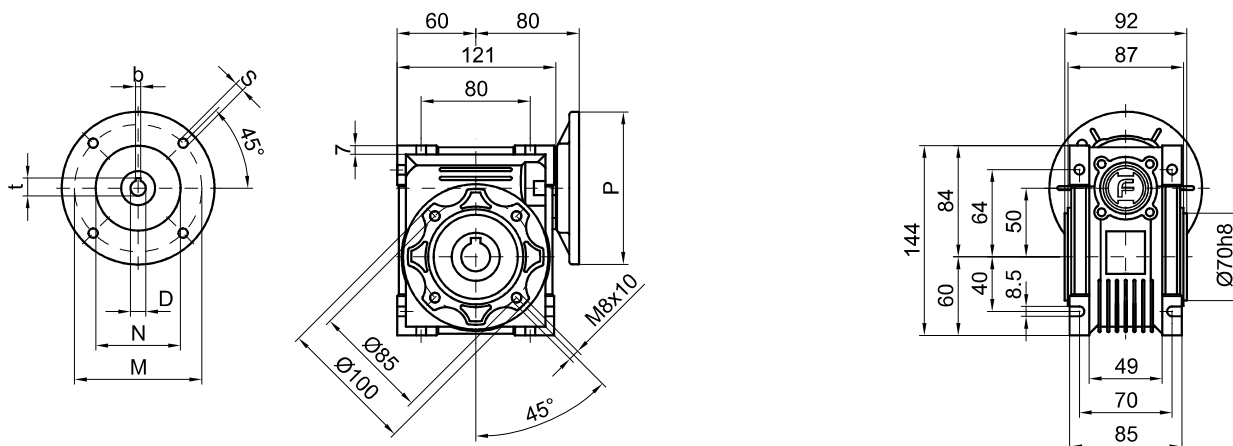
PAM IEC	D _{E8}	b	t	P	M	N	S
63B5	11	4	12.8	140	115	95	9
63B14	11	4	12.8	90	75	60	5.5
56B5	9	3	10.4	120	100	80	6.5
56B14	9	3	10.4	80	65	50	5.5



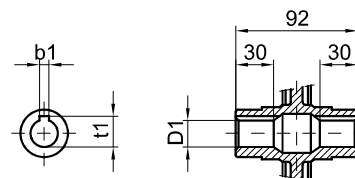
Wymiary przekładni

Dimensions

SHF - 050 - ... - P(IEC)

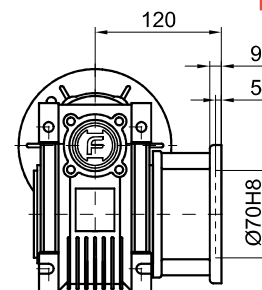
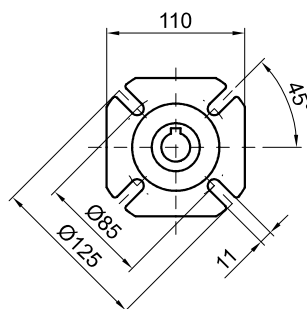
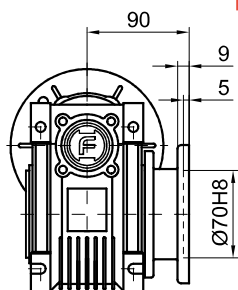
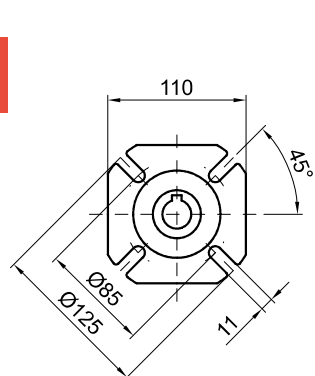


VS



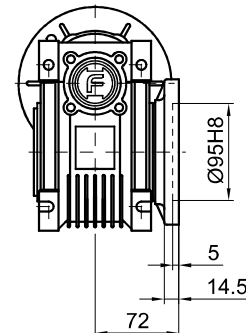
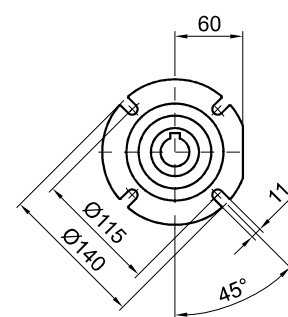
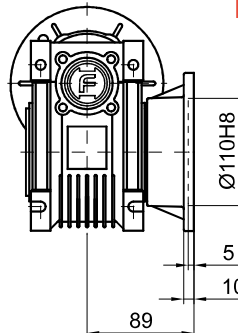
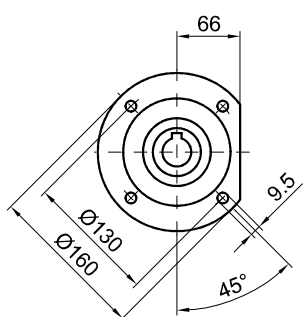
FA

FB



FC

FD



PAM IEC	D _{E8}	b	t	P	M	N	S	Wyjście Output	D _{1H8}	b ₁	t ₁
80B5	19	6	21.8	200	165	130	11		25	8	28.3
80B14	19	6	21.8	120	100	80	6.5		(24)	(8)	(27.3)
71B5	14	5	16.3	160	130	110	8.5		(...) tylko na zamówienie (...) only on request		
71B14	14	5	16.3	105	85	70	7				
63B5	11	4	12.8	140	115	95	8.5				



3.50

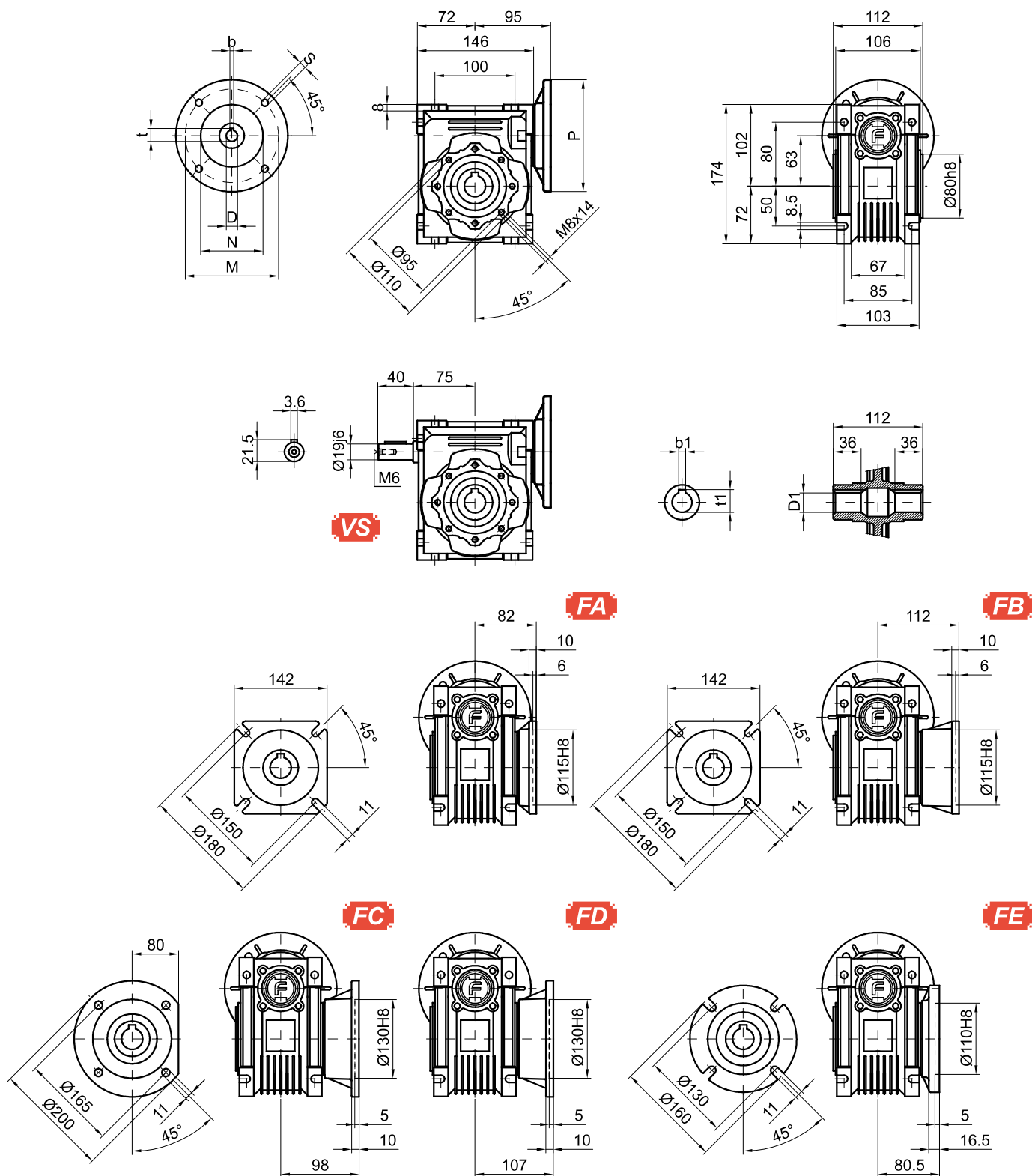
masa przekładni
bez oleju i silnika
without oil and motor



Wymiary przekładni

Dimensions

SHF - 063 - ... - P(IEC)



PAM IEC	D _{E8}	b	t	P	M	N	S	Wyjście Output	D1 _{H8}	b1	t1
90B5	24	8	27.3	200	165	130	11		25	8	28.3
90B14	24	8	27.3	140	115	95	9		(28)	(8)	(31.3)
80B5	19	6	21.8	200	165	130	11	(...) tylko na zamówienie (...) only on request			
80B14	19	6	21.8	120	100	80	7				
71B5	14	5	16.3	160	130	110	8.5				
71B14	14	5	16.3	105	85	70	7				

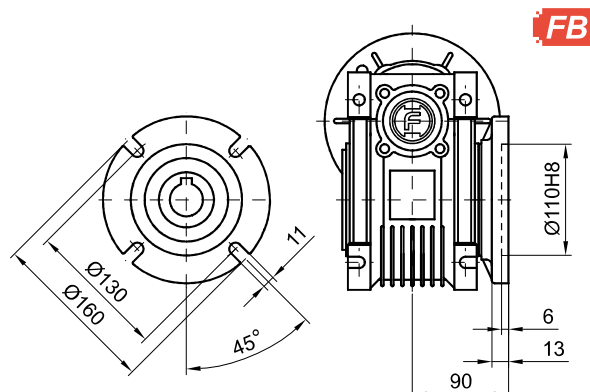
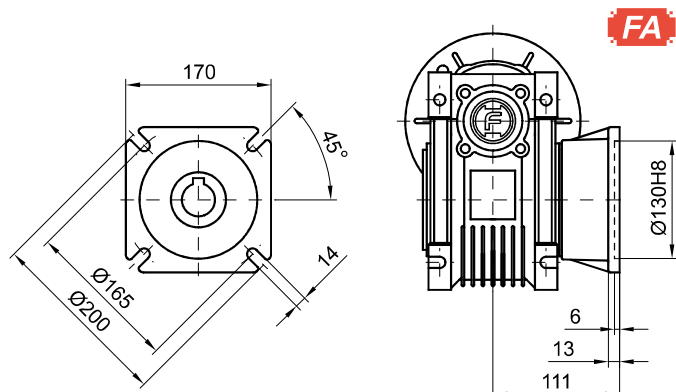
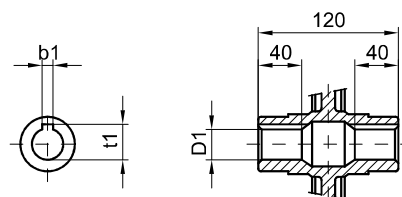
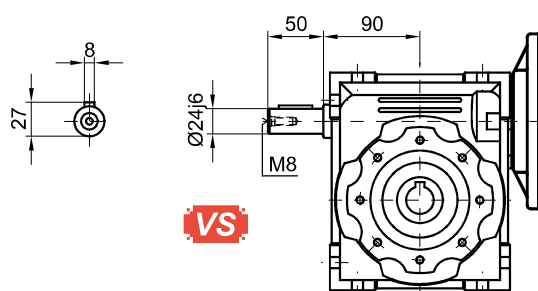
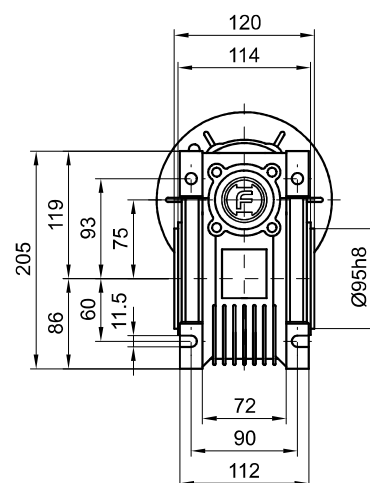
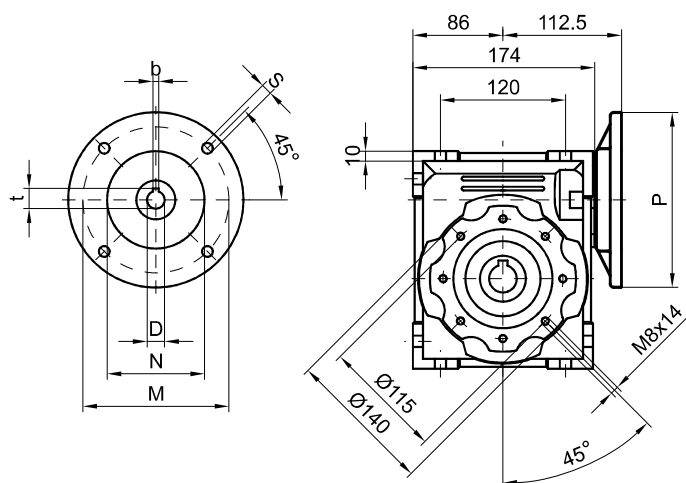
Kg
6.20
masa przekładni
bez oleju i silnika
without oil and motor



Wymiary przekładni

Dimensions

SHF - 075 - ... - P(IEC)



PAM IEC	D_{Es}	b	t	P	M	N	S	Wyjście Output	D1_{H8}	b1	t1
100/112B5	28	8	31.3	250	215	180	13		28	8	31.3
100/112B14	28	8	31.3	160	130	110	9		(35)	(10)	(38.3)
90B5	24	8	27.3	200	165	130	11		(…) tylko na zamówienie (…) only on request		
90B14	24	8	27.3	140	115	95	9				
80B5	19	6	21.8	200	165	130	11				
80B14	19	6	21.8	120	100	80	6.5				
71B5	14	5	16.3	160	130	110	9				

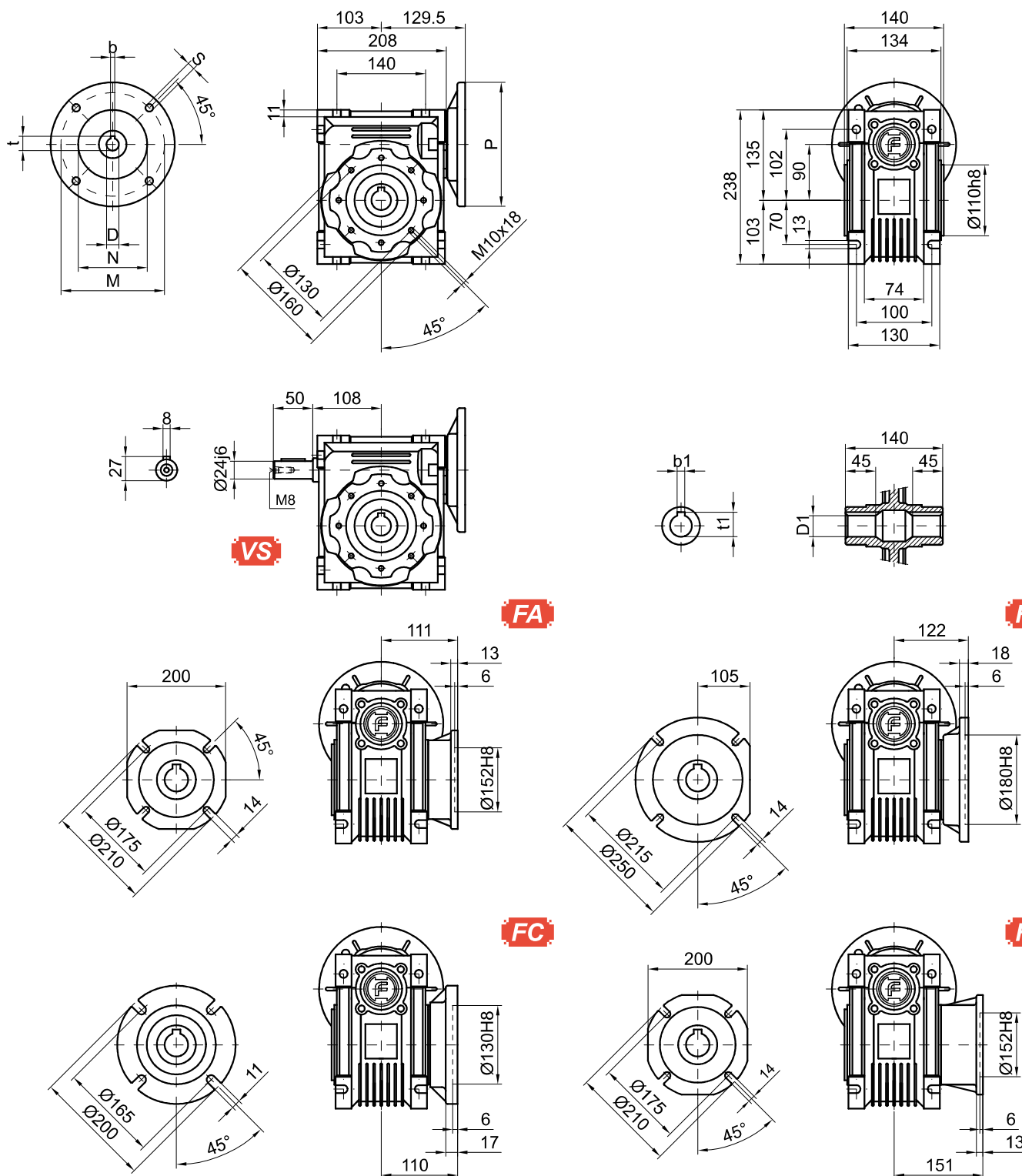

9.00
masa przekładni
bez oleju i silnika
without oil and motor



Wymiary przekładni

Dimensions

SHF - 090 - ... - P(IEC)



PAM IEC	D _{E8}	b	t	P	M	N	S	Wyjście Output	D _{1H8}	b ₁	t ₁
100/112B5	28	8	31.3	250	215	180	13		35	10	38.3
100/112B14	28	8	31.3	160	130	110	9		(38)	(10)	(41.3)
90B5	24	8	27.3	200	165	130	11		(...) tylko na zamówienie (...) only on request		
90B14	24	8	27.3	140	115	95	9				
80B5	19	6	21.8	200	165	130	11				
80B14	19	6	21.8	120	100	80	6.5				

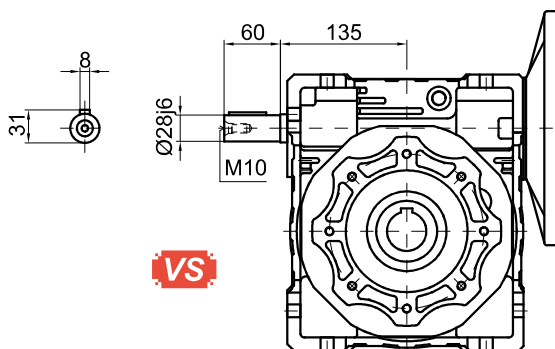
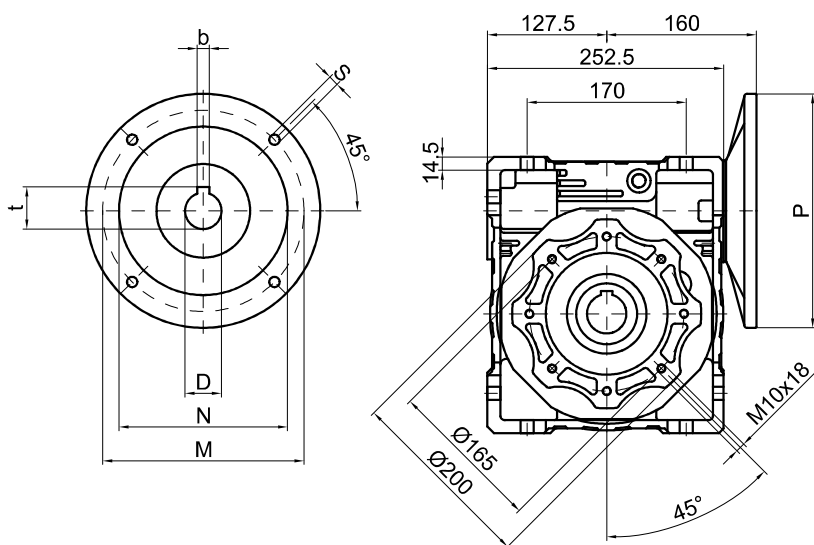
13.0
masa przekładni
bez oleju i silnika
without oil and motor



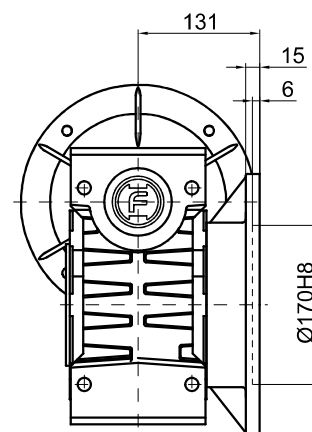
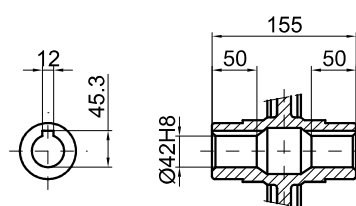
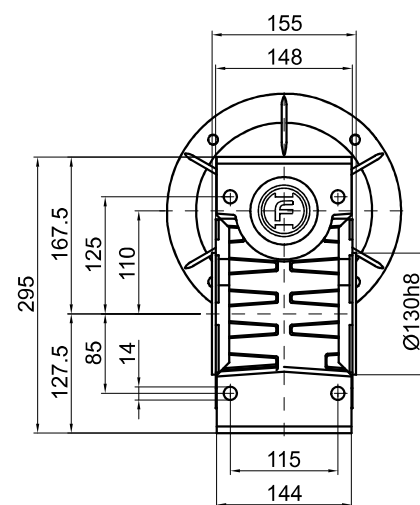
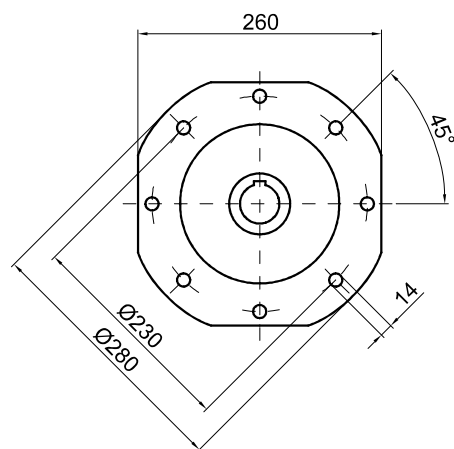
Wymiary przekładni

Dimensions

SHF - 110 - ... - P(IEC)



VS



FA

PAM IEC	D _{E8}	b	t	P	M	N	S
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	13
90B5	24	8	27.3	200	165	130	11
80B5	19	6	21.8	200	165	130	11



35.0

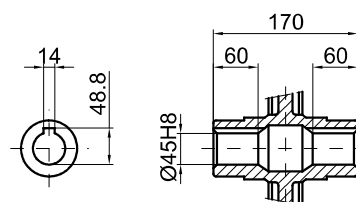
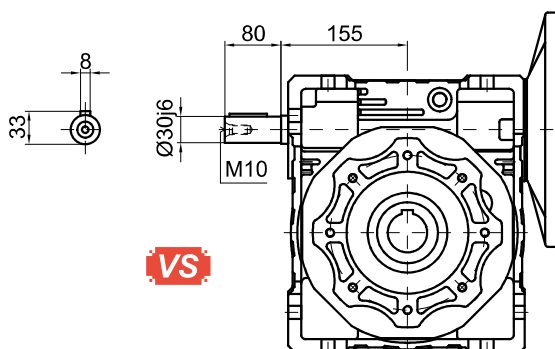
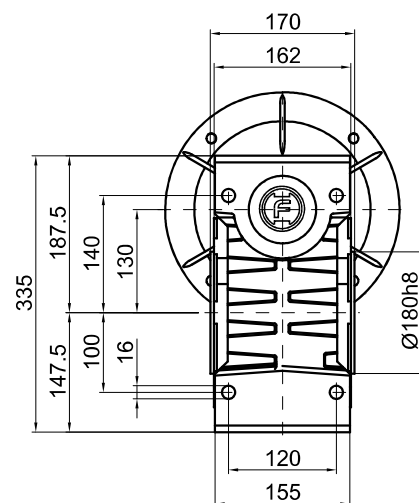
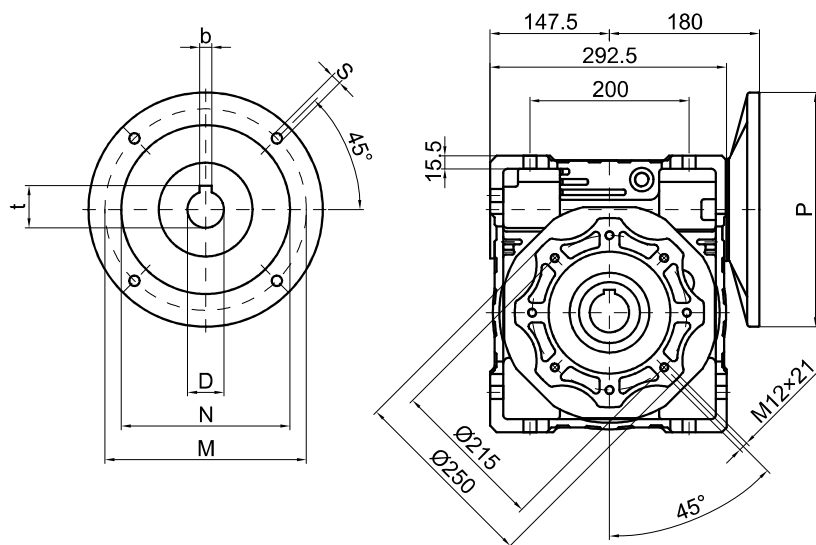
masa przekładni
bez oleju i silnika
without oil and motor



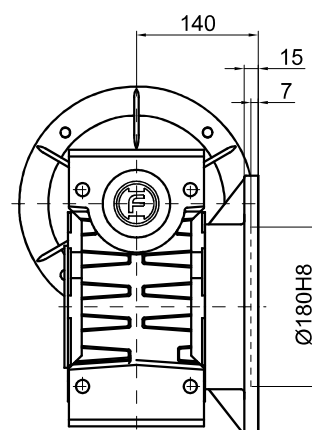
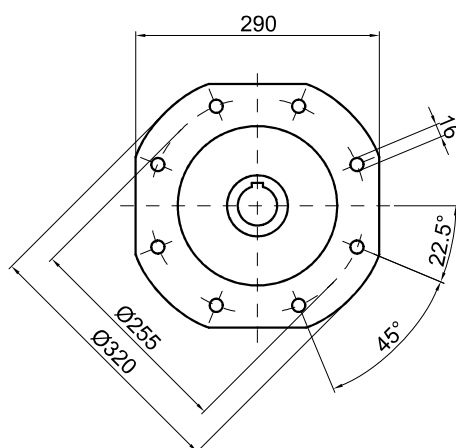
Wymiary przekładni

Dimensions

SHF - 130 - ... - P(IEC)



VS



FA

PAM IEC	D _{E8}	b	t	P	M	N	S
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	13
90B5	24	8	27.3	200	165	130	11



48.0

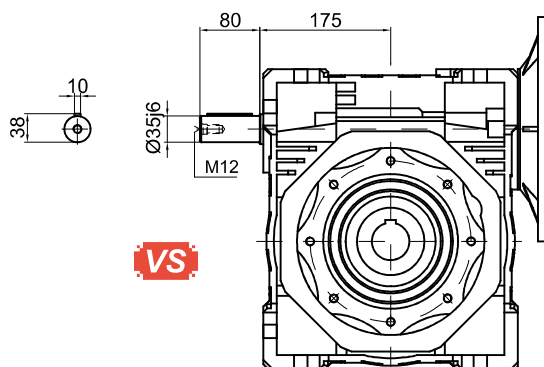
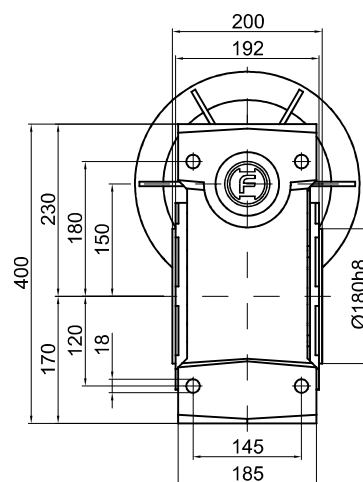
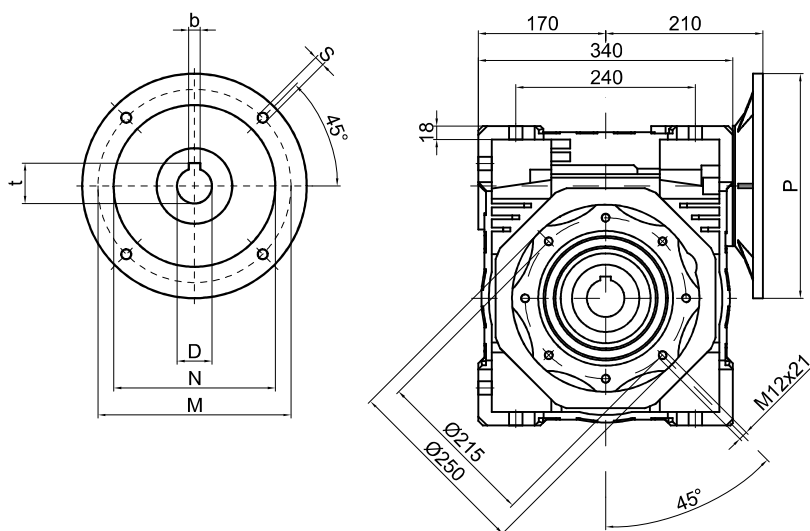
masa przekładni
bez oleju i silnika
without oil and motor



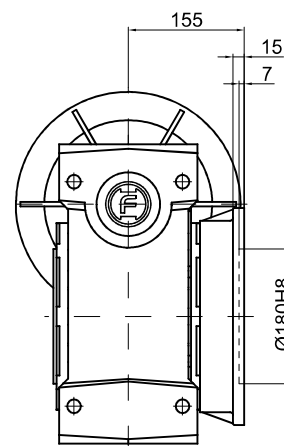
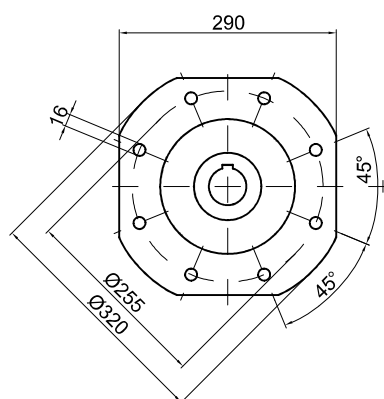
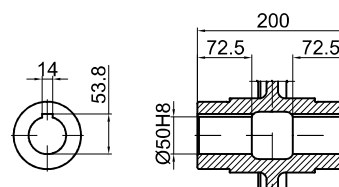
Wymiary przekładni

Dimensions

SHF - 150 - ... - P(IEC)



VS



FA

PAM IEC	D _{E8}	b	t	P	M	N	S
160B5	42	12	45.3	350	300	250	19
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	M12



84.0

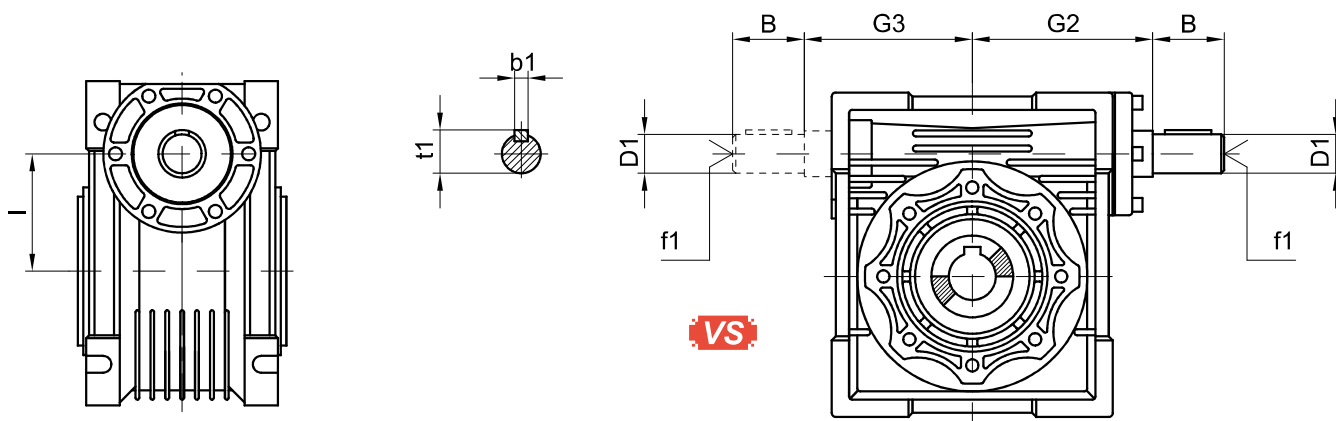
masa przekładni
bez oleju i silnika
without oil and motor



Wymiary przekładni

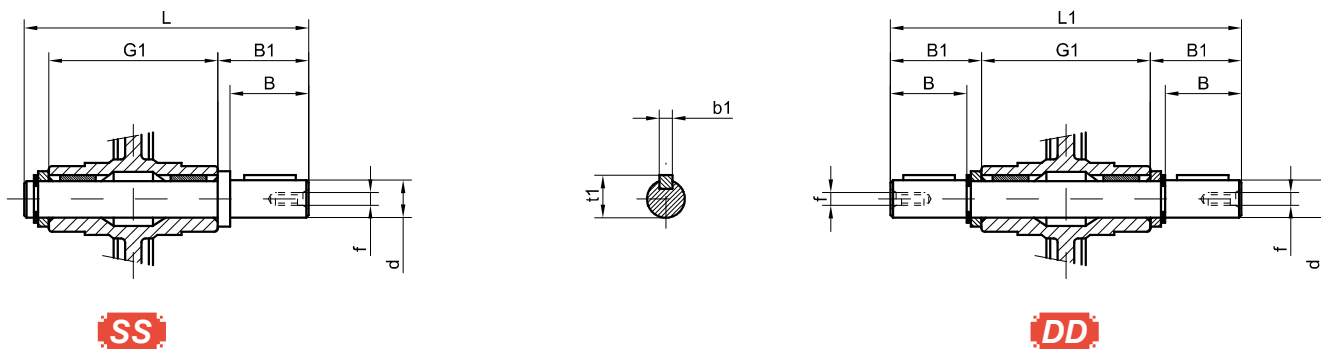
Dimensions

SHF - ... - VS - ... - P(IEC)



SHF	025	030	040	050	063	075	090	110	130	150
B	20	20	23	30	40	50	50	60	80	80
D1	9 j6	9 j6	11 j6	14 j6	19 j6	24 j6	24 j6	28 j6	30 j6	35 j6
G2	38	51	60	74	90	105	125	142	162	195
G3	37	45	53	64	75	90	108	135	155	175
I	25	30	40	50	63	75	90	110	130	150
b1	3	3	4	5	6	8	8	8	8	10
f1	-	-	-	M6	M6	M8	M8	M10	M10	M12
t1	10.2	10.2	12.5	16	21.5	27	27	31	33	38

Wał wyjściowy / Output shaft



SHF	d	B	B1	G1	L	L1	f	b1	t1
025	11 g6 (9)	23 (25)	25.5 (30)	50	81 (85.5)	101	-	4 (3)	12.5 (10.2)
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
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

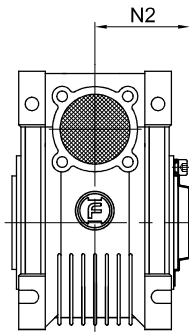
(...) tylko na zamówienie
(...) only on request



Wymiary przekładni

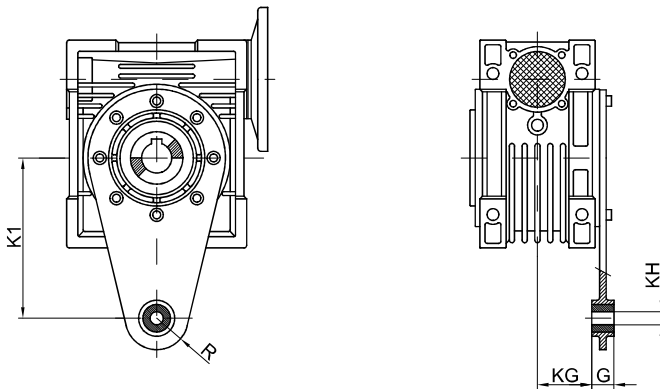
Dimensions

Pokrywka / Safety cover



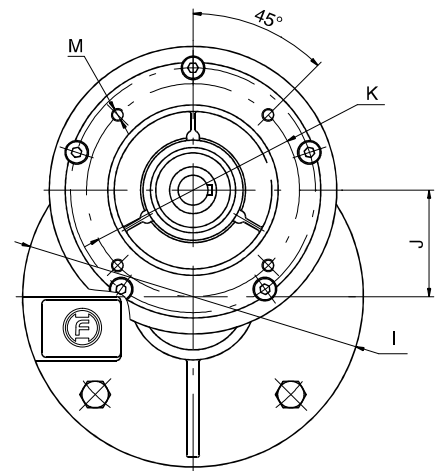
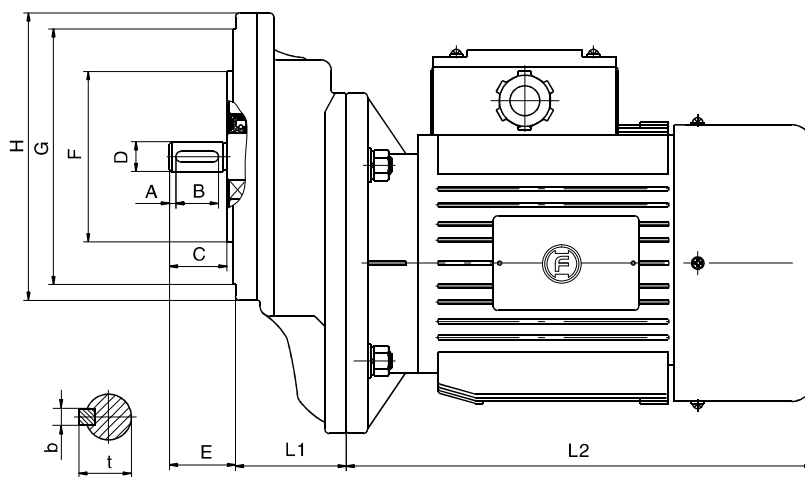
SHF	N2
030	42
040	50
050	58
063	69
075	74
090	86
110	94
130	102
150	113

Ramię reakcyjne / Torque arm



SHF	K1	G	KG	Kh	R
025	70	14	17.5	8	15
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
110	250	30	62	25	35
130	250	30	69	25	35
150	250	30	84	25	35

Stopień walcowy PC / PC helical pre-stage



	A	B	C	D(js6)	b	t	E	F(H8)	G	H	I	J	K	M	L1	L2*
PC063	1.5	18	21	11	4	12.5	23	70	105	114	140	40	85	4-M6×10	45	202 (63B5)
	2	20	28	※14	5	16	30									
PC071	3	20	27	14	5	16	30	80	120	135	160	50	100	4-M6×10	53	220 (71B5)
	3	32	37	※19	6	21.5	40									
PC080 PC090	3	32	40	19	6	21.5	40	110	160	200	63	130	4-M8×11	72.5	255 (80B5)	
	4	40	50	※24	8	27	50									
	4	50	60	※28	8	31	60									
	3	32	40	※19	6	21.5	40	110	160	200	63	130	4-M8×11	72.5	265 (90B5) 290 (90LB5)	
	3	40	50	24	8	27	50									
	3	50	60	※28	8	31	60									

※ - wykonanie specjalne / built on request

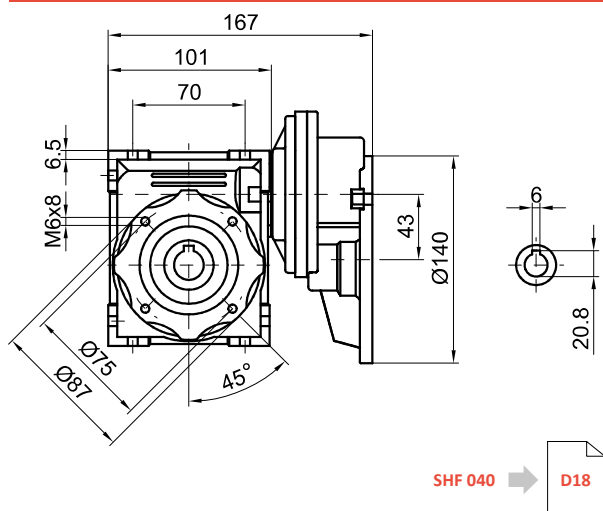
L2* - wymiar może różnić się w zależności od producenta silnika elektrycznego
The dimension may vary depending on the manufacturer of the electric motor



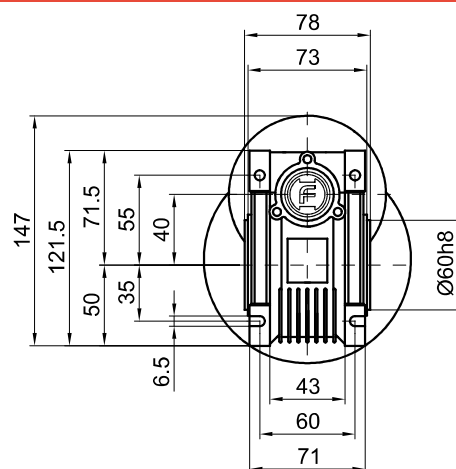
Wymiary przekładni

Dimensions

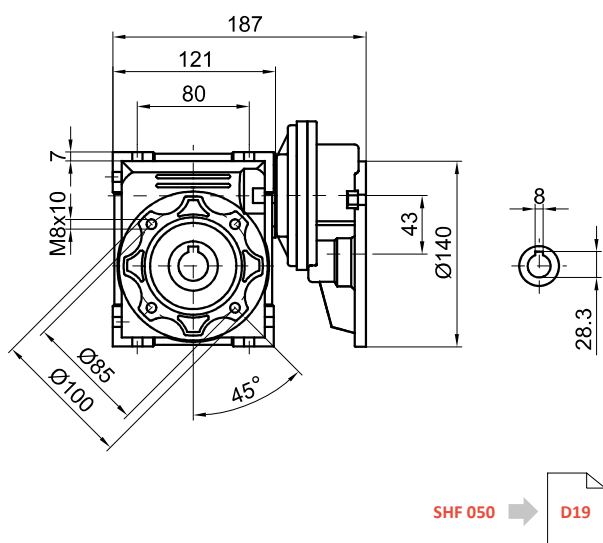
SHF 040-PC063



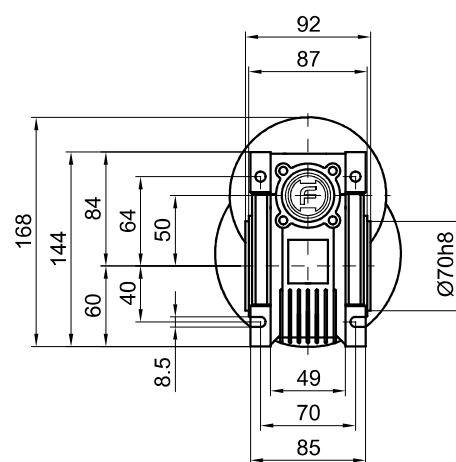
Kg
3.40
masa przekładni
bez oleju i silnika
without oil and motor



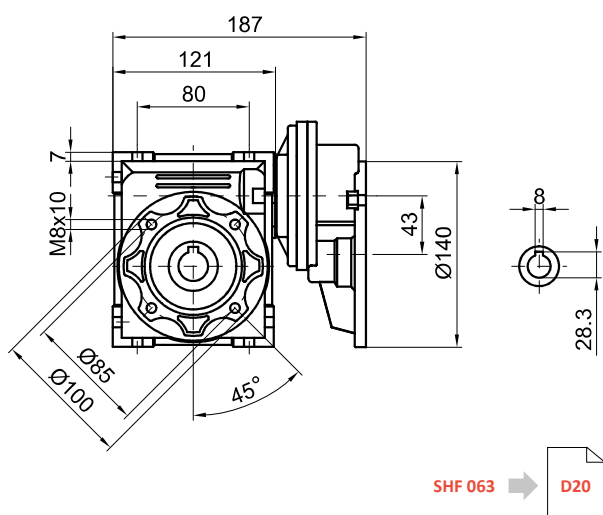
SHF 050-PC063



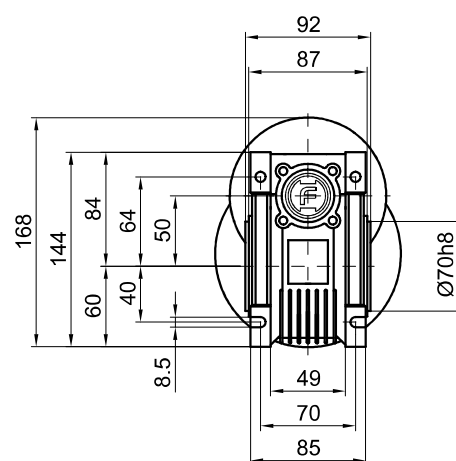
Kg
4.60
masa przekładni
bez oleju i silnika
without oil and motor



SHF 063-PC063



Kg
7.30
masa przekładni
bez oleju i silnika
without oil and motor

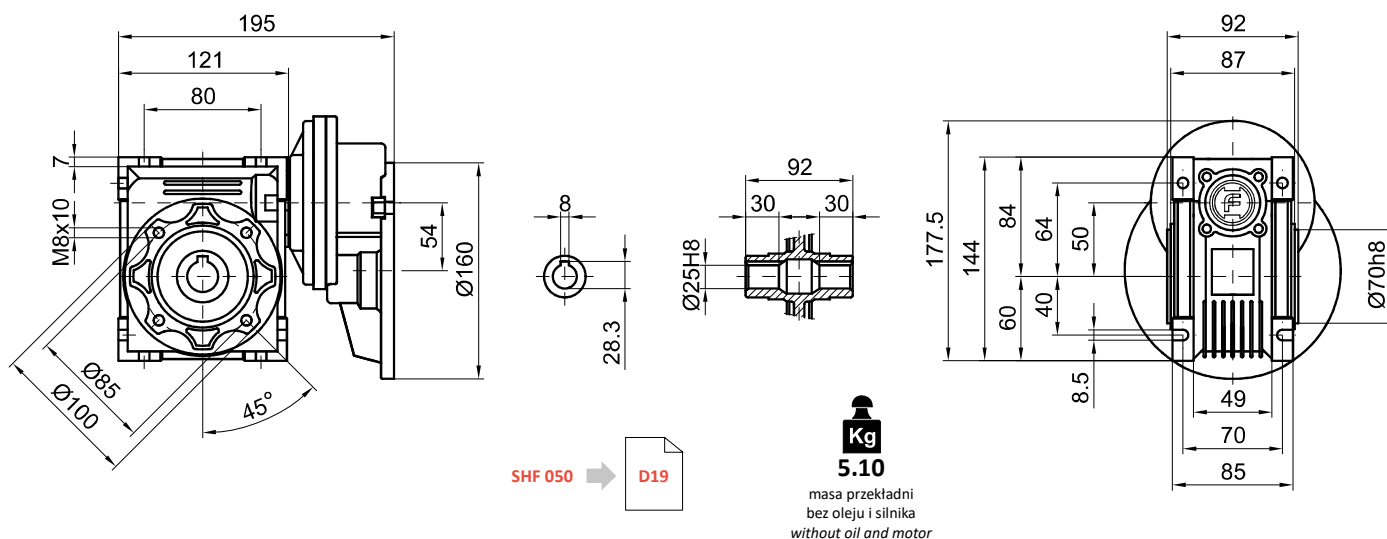




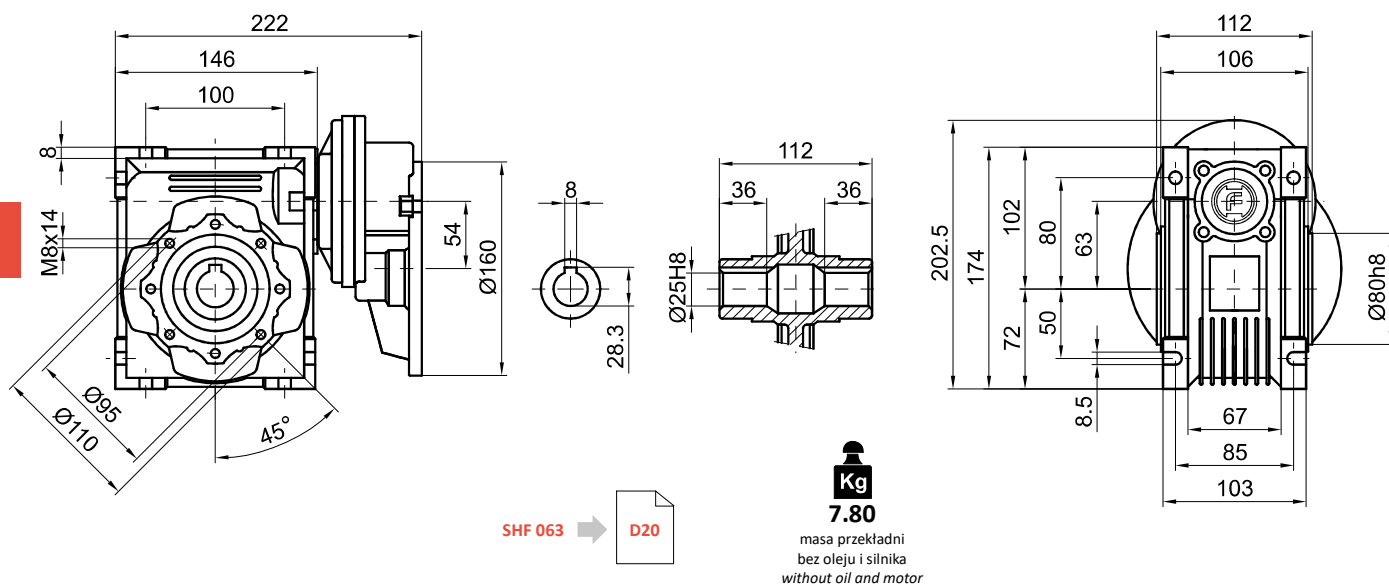
Wymiary przekładni

Dimensions

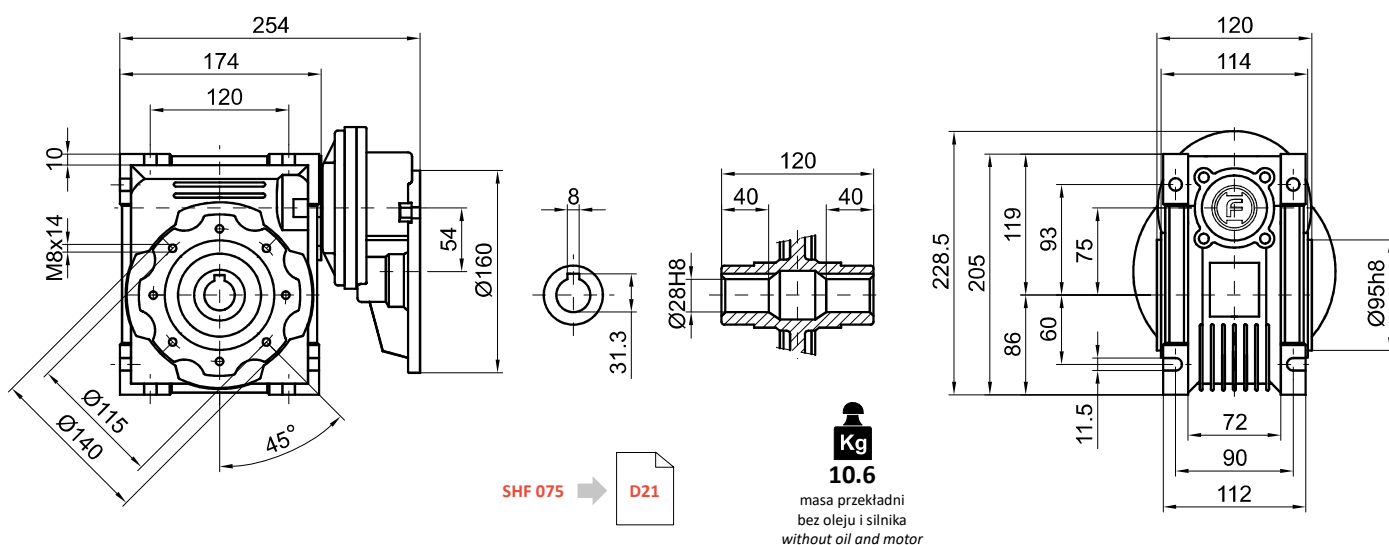
SHF 050-PC071



SHF 063-PC071



SHF 075-PC071

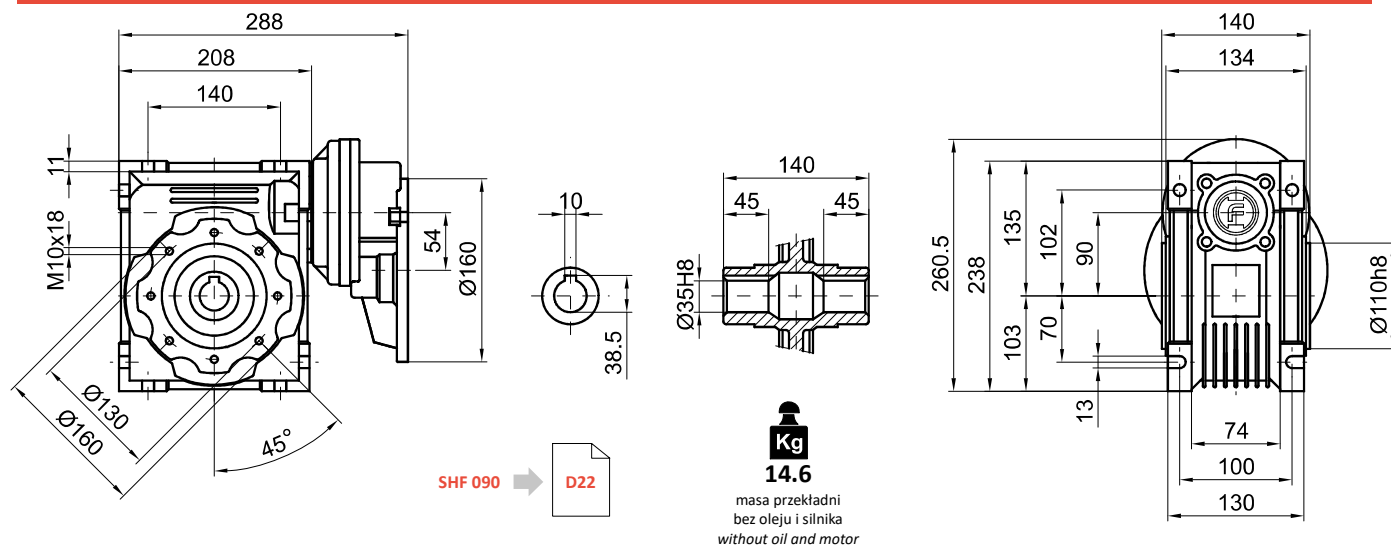




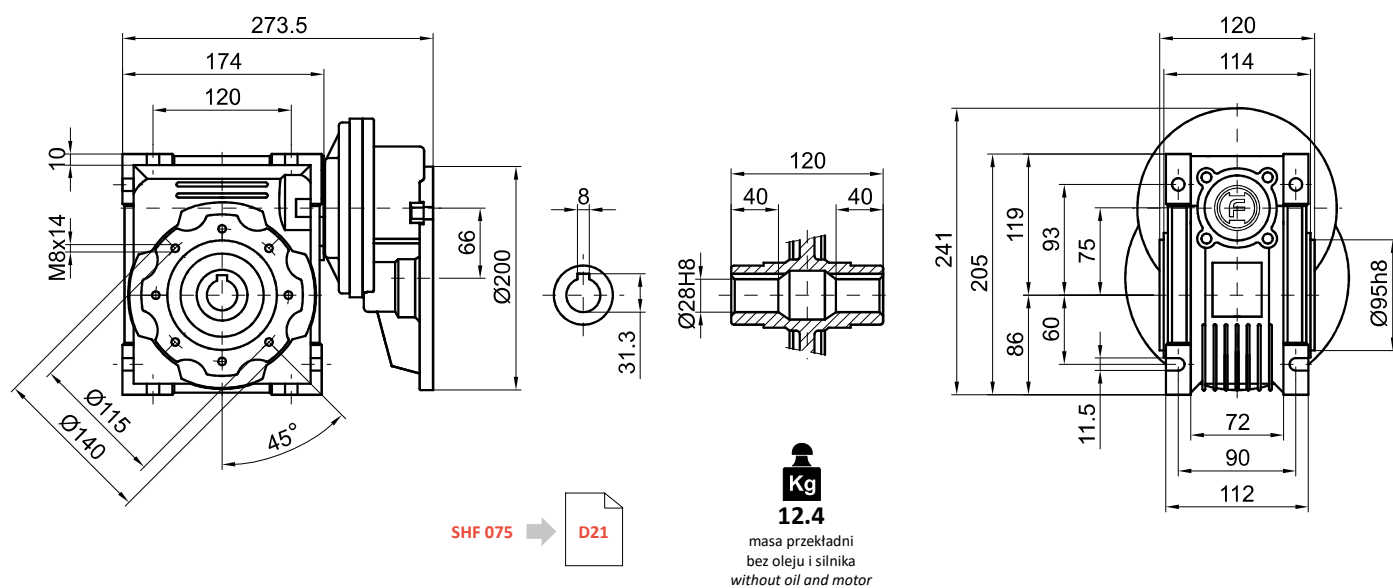
Wymiary przekładni

Dimensions

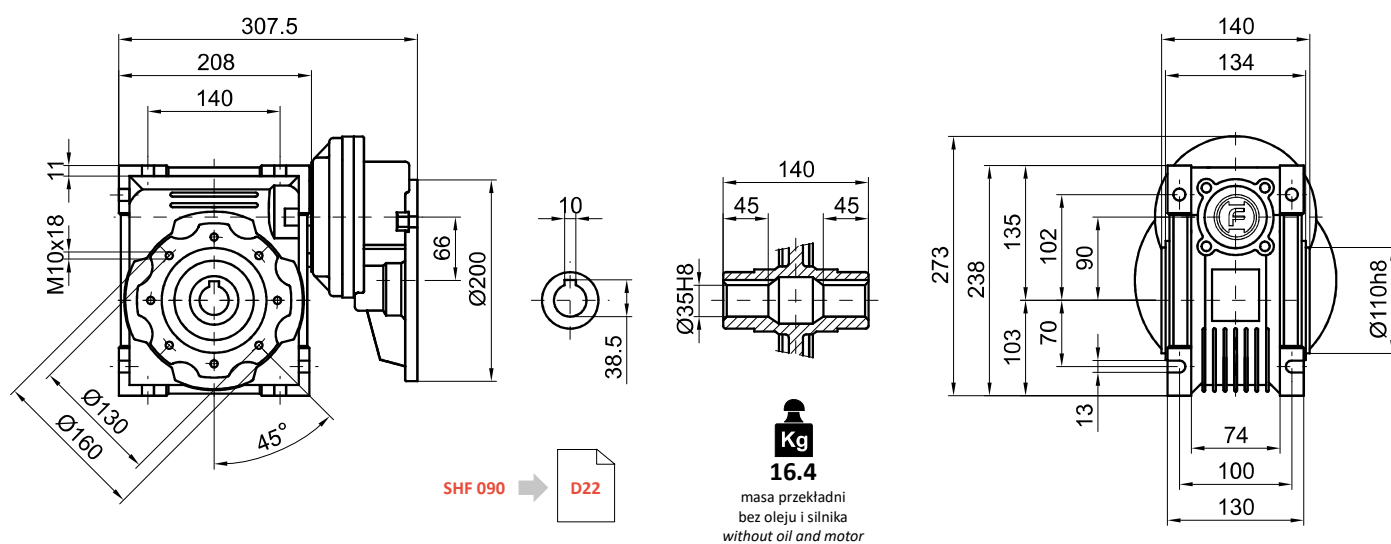
SHF 090-PC071



SHF 075-PC080



SHF 090-PC080

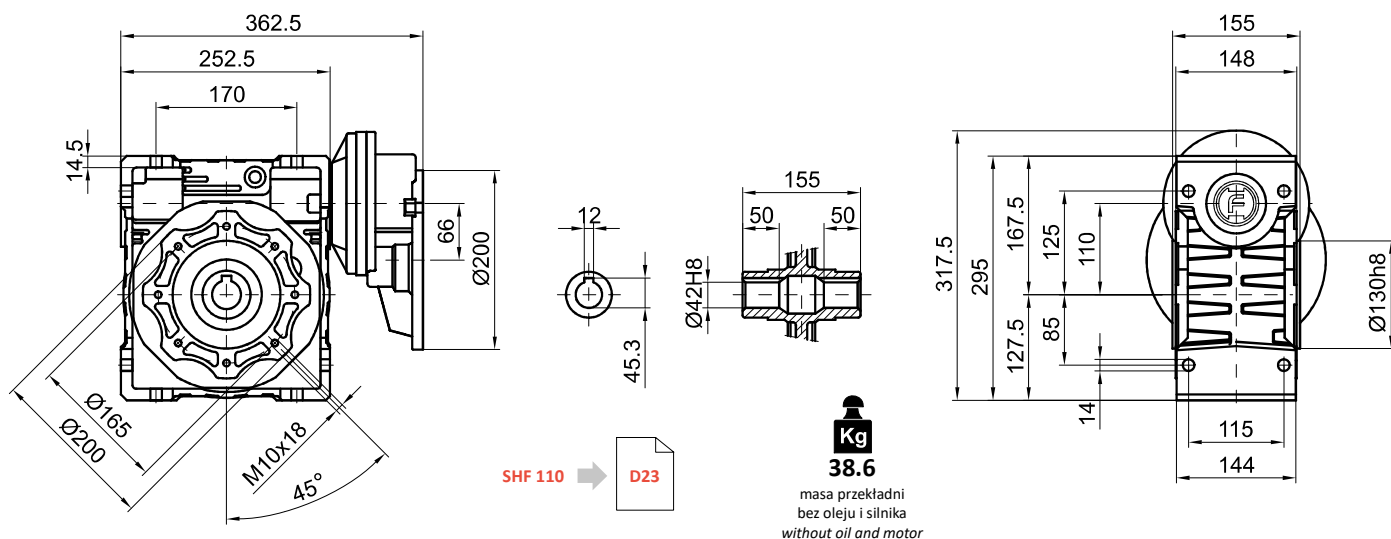




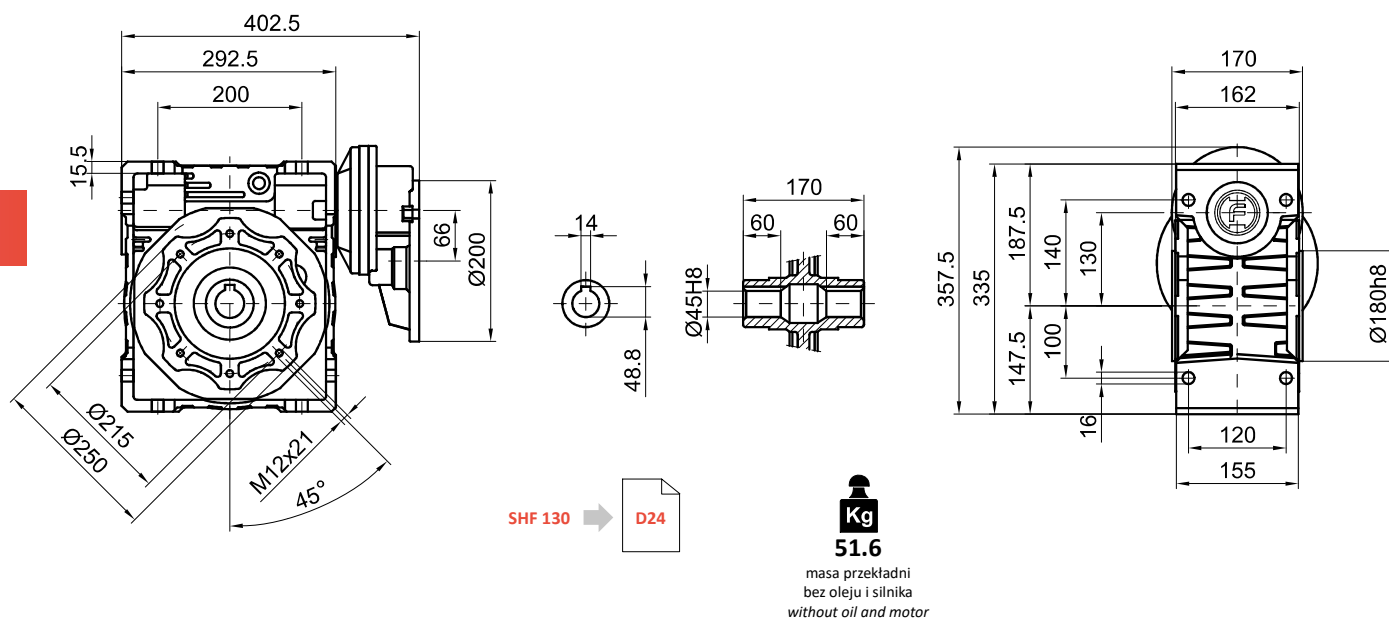
Wymiary przekładni

Dimensions

SHF 110-PC080 (PC090)

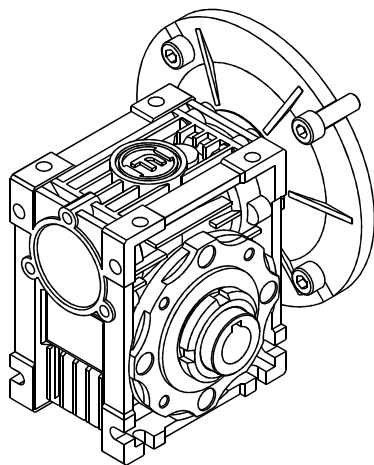


SHF 130-PC080 (PC090)



Ogranicznik momentu obrotowego

Torque limiter

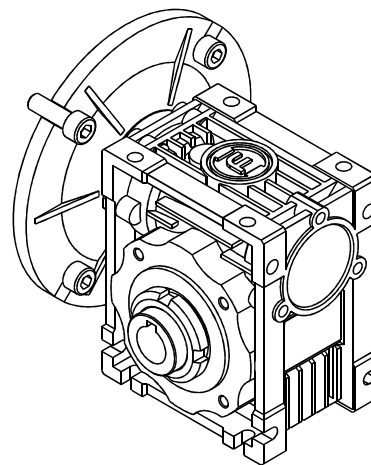


Ogranicznik momentu obrotowego jest urządzeniem mechanicznym zaprojektowanym w celu ochrony przekładni ślimakowej przed ruchami spowodowanymi chwilowymi lub nierównomiernymi przeciążeniami. Jest on stosowany na wyjściu reduktorów ślimakowych i działa jak tarcie wewnętrzne na wale wyjściowym, które może być regulowane ręcznie za pomocą zewnętrznej nakrętki pierścieniowej. W porównaniu z elektronicznymi lub zewnętrznymi urządzeniami mechanicznymi, rozwiązanie to posiada następujące zalety:

- szybkie działanie bezpośrednio na przekładni, która musi być chroniona;
- pracuje w kąpeli olejowej, dzięki czemu nie zużywa się i jest niezawodny;
- po przekroczeniu momentu poślizgowego ogranicznik momentu obrotowego jest nadal "zawieszony", co zapewnia automatyczny restart maszyny bez zewnętrznej interwencji;
- ręczna regulacja momentu poślizgowego;
- wał drążony wyjściowy bez zmian średnicy w porównaniu z wersją standardową;
- ograniczone dodatkowe wymiary gabarytowe przekładni ślimakowej w porównaniu z wersją bez ogranicznika momentu obrotowego.

Ogranicznik momentu obrotowego jest dostępny dla przekładni ślimakowej typu SHF040L, SHF050L, SHF063L, SHF075L i SHF090L we wszystkich oferowanych w katalogu kombinowanych konfiguracjach urządzeń, również dla podwójnych przekładni ślimakowych - najczęściej na ostatniej przekładni.

Ogranicznik momentu obrotowego może być zainstalowany jako system ochrony przed przypadkowymi zdarzeniami, a nie jako zabezpieczenie przed niewłaściwym doбором przekładni (np. po wybraniu przekładni o niskim współczynniku serwisowym w porównaniu z rzeczywistymi potrzebami zastosowania).



The torque limiter is a mechanical device designed to protect the transmission from movement caused by accidental overloads or irregularities. It is applied to the output of the worm gear reducers and it works as an internal friction applied on the output shaft, which can be adjusted manually through an external locking ring nut. Compared to electronic or external mechanical devices, this solution presents the following advantages:

- *Quick action directly on the transmission that must be protected;*
- *It has been designed for oil-bath operation, therefore wear-free and reliable;*
- *Over the slip torque, the torque limiter is still "on hold", ensuring the automatic machine restart without external intervention;*
- *Manual adjustment of the slip torque;*
- *Hollow output shaft without changes in terms of diameter compared to the standard version;*
- *Limited additional dimensions worm gear compared to the version without the torque limiter.*

The torque limiter is available for worm gearbox type SHF040L, SHF050L, SHF063L, SHF075L and SHF090L it is applicable in all combined unit configurations provided in the catalogue, also double worm gearboxes - usually on the last gearbox.

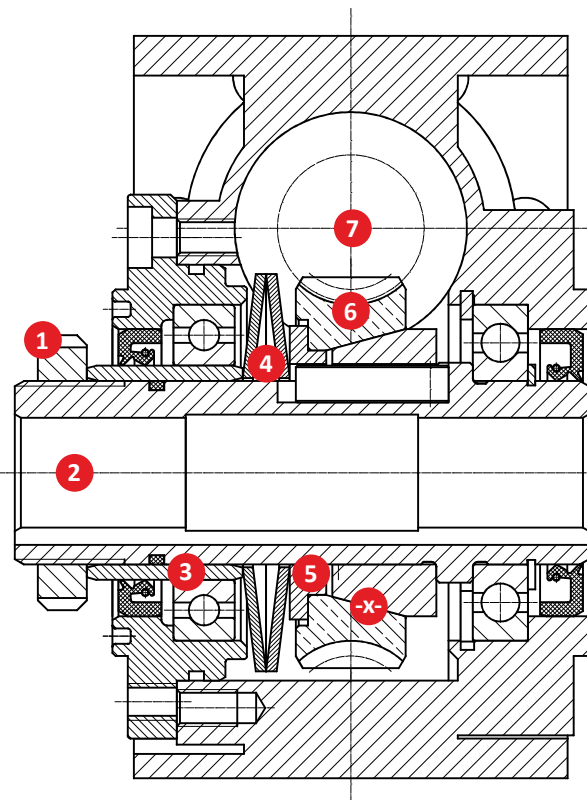
The torque limiter device must to be installed as a protection system for accidental events and not as protection of wrong gearbox selection (for example after selecting a gearbox with a low service factor compared with the real needs of the application).



Budowa ogranicznika momentu obrotowego

Operating principle of the torque limiter

- 1 Nakrętka pierścieniowa / DIN 70852
Locking ring nut / DIN 70852
- 2 Piasta
Hub
- 3 Tuleja
Bushing
- 4 Dwie sprężyny krążkowe
Two belleville washers
- 5 Płytkę dociskową
Plate
- 6 Ślimacznica
Worm wheel
- 7 Ślimak
Worm
- x- Przesunięcie
Shift



W tym urządzeniu mechanicznym przenoszenie ruchu odbywa się poprzez tarcie pomiędzy powierzchnią napędową (ślimak 7) a powierzchnią napędzaną (ślimacznica 6). Są one poddawane określonemu dociskowi wytwarzanemu przez płytkę dociskową 5, który jest generowany przez dwie sprężyny krążkowe 4, ułożone szeregowo. Działanie sprężyn krążkowych jest generowane przez tuleję 3, na którą wywierana jest siła przez zewnętrzną nakrętkę pierścieniową 1 (DIN70852), przykręcaną do wału wyjściowego. Przesunięcie -x- jest zapewnione przez połączenie dwóch stożkowych elementów piasty 2 z kołem ślimakowym. Przenoszenie ruchu odbywa się standardowo do maksymalnej dopuszczalnej wartości momentu obrotowego (moment poślizgowy); powyżej tej wartości ogranicznik momentu obrotowego zaczyna pracować, generując poślizg pomiędzy kołem ślimakowym, które nadal obraca się pod wpływem wału wejściowego, a piastą, która pozostaje nieruchoma. Powyżej momentu poślizgowego oczekiwanego od regulacji, ogranicznik momentu obrotowego jest nadal "zawieszony": przekazuje on ustaloną wartość i nie przekazuje wyższych wartości. Gwarantuje to automatyczny restart maszyny bez konieczności podejmowania działań zewnętrznych.

Ze względów bezpieczeństwa nie zaleca się instalowania tego urządzenia w urządzeniach podnoszących: w przypadku przeciążenia lub nieprawidłowości, podczas zmiany, ciężar nie mógłby być utrzymywany w zawieszeniu.

In this mechanical device the transmission of movement takes place by means of friction between the driving surface (input shaft 7) and the driven surface (wormwheel 6). These are subject of a determined compression created by the plate 5 which is generated by two belleville washers 4, arranged in series. The belleville washers action is generated by the bushing 3, driven by the external locking ring nut 1 (DIN70852) which is screwed on the output shaft. The shift -x- is guaranteed by the connection between the two conical elements of the hub 2 and the worm wheel.

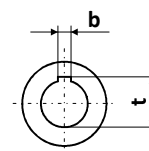
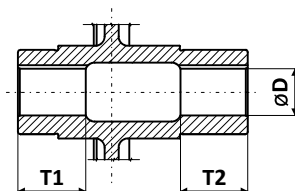
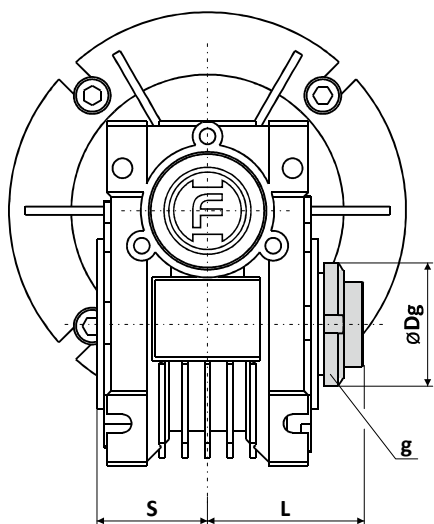
The transmission of movement has a standard operation up to a maximum admissible torque value (slip torque); over this value the torque limiter starts to work generating a slip between the worm wheel, which continues to spin conducted by the input shaft, and the hub which remains still. Over the slip torque expected from the regulation, the torque limiter is still "on hold": it transmits the set value and it doesn't transmit higher values. This ensures to the machine to restart automatically without external action.

For safety reasons it isn't recommended to install this device in lifting equipment: in case of overloads or irregularities, during the shift, the weight could not be maintained in suspension.



Wymiary

Ogranicznik momentu obrotowego jest dostarczany jednorazowo dla każdej przekładni z wałem drążonym o średnicy wału wyjściowego równej wymiarowi $\varnothing D$ podanemu w tabeli. Na życzenie, po przeprowadzeniu kontroli technicznej i produkcyjnej, mogą być dostarczone inne średnice. Na życzenie możliwy jest montaż zestawu pełnego wału wyjściowego, innego niż ten standardowy, dostępny w katalogu.



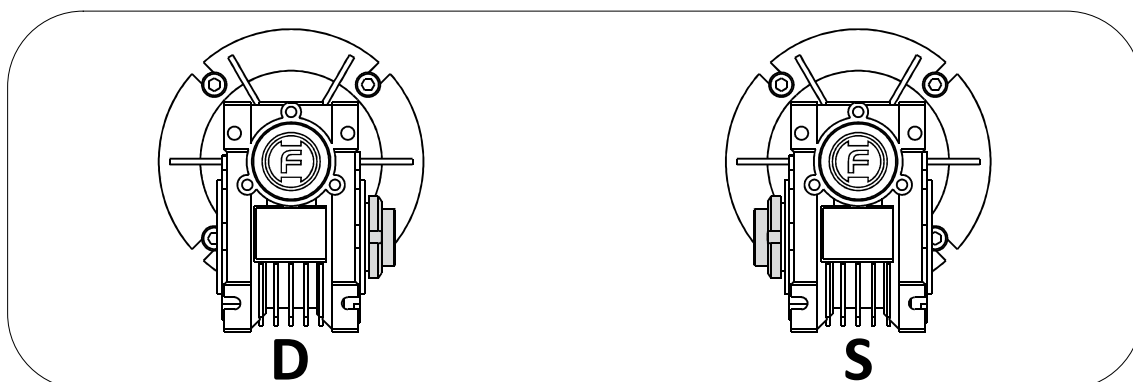
Dimensions

The torque limiter is univocally supplied for every gear unit with the hollow output shaft diameter equal to dimension $\varnothing D$ show in the table. Different diameters could be provided upon request, after technical and manufacturing control. Upon request it's possible to assemble an output solid shaft kit, different from the standard one available in the catalogue.

[mm]	SHF040L	SHF050L	SHF063L	SHF075L	SHF090L
L	55	63.5	74	78.5	89.5
S	39	46	56	60	70
$\varnothing Dg$	$\varnothing 45$	$\varnothing 56$	$\varnothing 62$	$\varnothing 68$	$\varnothing 80$
g	M30 x 1.5	M40 x 1.5	M45 x 1.5	M50 x 1.5	M60 x 2.0
b	6	8	8	8	10
t	20.8	28.3	28.3	31.3	38.3
$\varnothing D$	$\varnothing 18$	$\varnothing 25$	$\varnothing 25$	$\varnothing 28$	$\varnothing 35$
T1	26	33	37	40	45
T2	26	33	37	40	45

Pozycje instalacji ogranicznika momentu obrotowego

Torque limiter positions





Ustawienie ogranicznika

Ustawienie momentu poślizgowego można łatwo regulować z zewnątrz poprzez obrót nakrętki pierścienia zabezpieczającego, charakteryzujący się 4 znakami, aby określić liczbę obrotów (każdy znak jest równoważny $\frac{1}{4}$ obrotu). Urządzenie jest wstępnie nastawiane podczas fazy montażu. Na ustawienie mogą mieć wpływ następujące czynniki: temperatura i okres regulacji. W związku z tym zaleca się, aby w trakcie instalacji sprawdzić rzeczywistą wartość graniczną momentu poślizgowego, zgodnie z rzeczywistymi potrzebami zastosowania.

Standardowy kierunek obrotów jest zgodny z ruchem wskazówek zegara. Patrząc od przodu od strony nakrętki pierścieniowej, ogranicznik momentu obrotowego znajduje się w pozycji D, gdy silnik znajduje się po prawej stronie; z silnikiem po lewej stronie ogranicznik momentu obrotowego znajduje się w pozycji S.

W przypadku długich postojów, nawet jeśli maszyna uruchamia się automatycznie, zaleca się przywrócenie nakrętki pierścieniowej do pozycji wyjściowej i ponowne jej ustawienie.

Jak już wcześniej wspomniano, dla każdego rozmiaru reduktora zakres momentu poślizgowego zależy od przełożenia i kierunku obrotów przekładni, co wpływa na tolerancje pomiędzy dwoma stożkowymi elementami, które generują poślizg (istnieje element osiowy, który ma tendencję do zbliżania się lub oddalania).

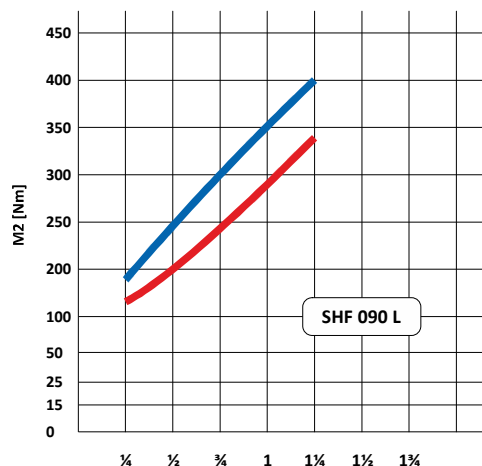
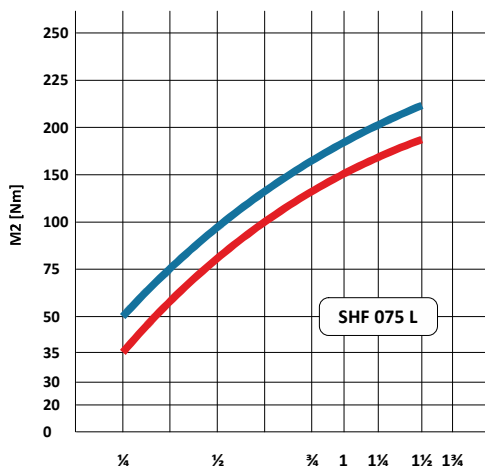
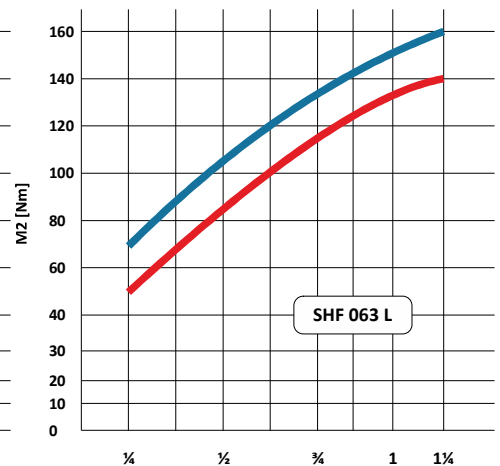
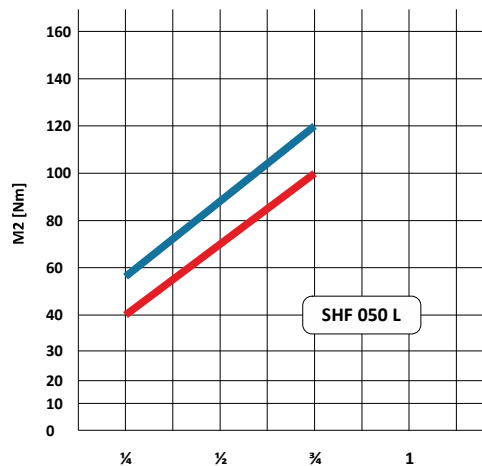
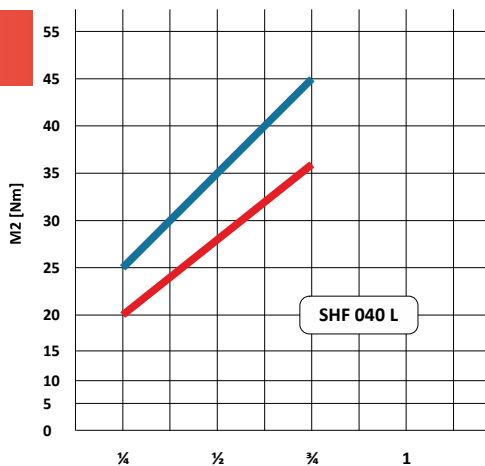
Torque limiter setting

A slip torque setting is easily adjustable from the outside through the rotation of the locking ring nut, characterized by 4 marks to define the number of turns (each mark is equivalent to $\frac{1}{4}$ of a turn). The device is preliminary set during the assembly phase. The following factors may affect the setting: temperature and period of adjustment. It is therefore recommended, during the installation, to actually verify the slip torque limit, in according to the real needs of the application.

The standard direction of rotation for the registration of the ring nut is clockwise. Looking frontally from the ring nut side, the torque limiter is in D position when the motor position is on the right side; with the motor on left side the torque limiter is in S position.

It's recommended for long stops, even if the machine restarts automatically, to return the ring nut to its original position and to set it again.

As previously mentioned, for each reducers size the slip torque range depends by the ratio and the direction of rotation of the gearbox, which affects the tolerances between the two conical components that generate the slip (there is an axial component which tends to approach or move their away).



Typ / Type	Obrót nakrętką pierścieniową Ring nut rotation
SHF 040 L	$\frac{1}{2}$ obrotu / $\frac{1}{2}$ turn
SHF 050 L	$\frac{1}{2}$ obrotu / $\frac{1}{2}$ turn
SHF 063 L	$\frac{3}{4}$ obrotu / $\frac{3}{4}$ turn
SHF 075 L	1 obrót / 1 turn
SHF 090 L	1 obrót / 1 turn