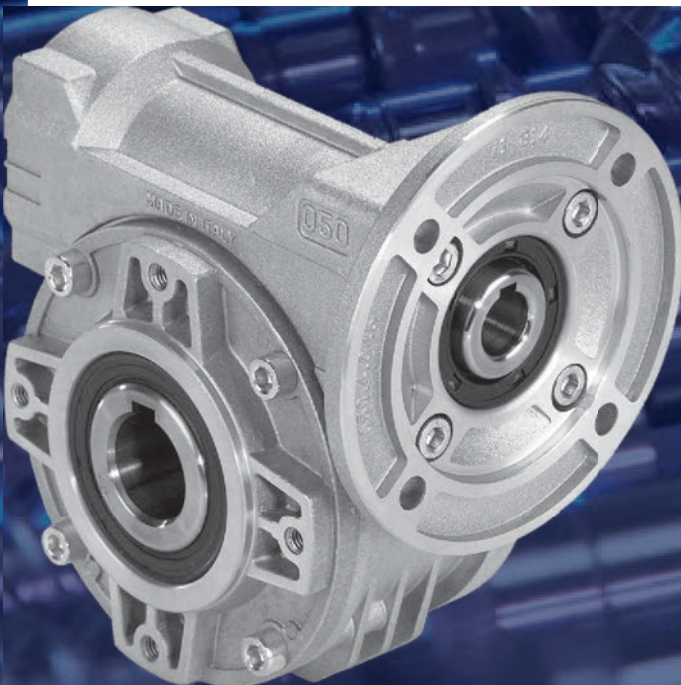
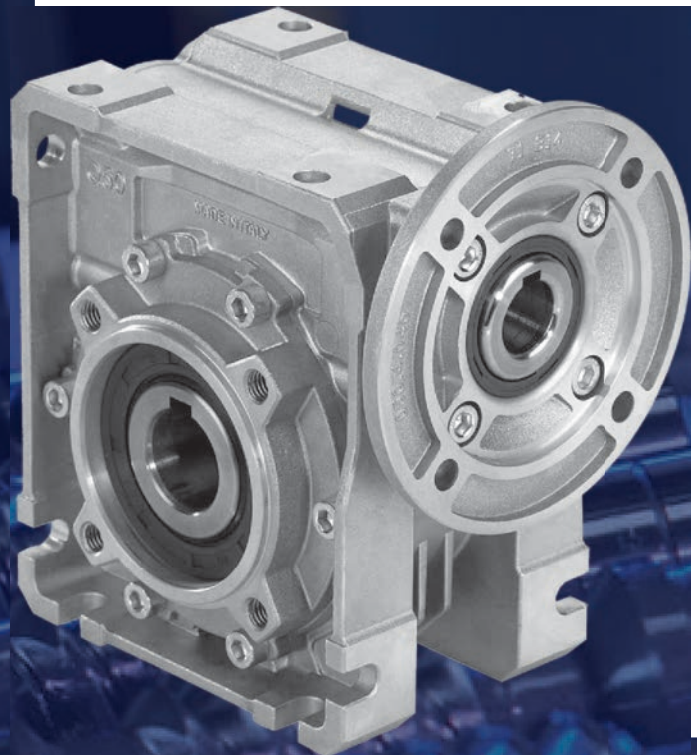


Worm Gears

Cat.: CT-VFI-BS-HM015

Worm gearboxes



Nema-Inch Range



www.tvtamerica.com

Worm gearboxes

A modular and compact product

Single-piece aluminum alloy housing

Is vacuum impregnated (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint. Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing.

Single piece alloy steel input shaft and worm shaft.

High helix angle worm is case-hardened (Rc 58-60), ground, teeth are profiled and radiused, for noise reduction and enhanced efficiency.

Flange

Fully modular to IEC and compact integrated motor. NEMA C flange.

Oversized bearings

Support positively-retained, high speed shaft for higher shock load capacity - ideal for frequent starting and reversing application. Premium, Nitrile® high temperature seals each end.

Premium, high temperature

Nitrile® output seals

Bronze alloy worm gears.

Is centrifugally cast onto an iron hub for maximum strength and superior life.

Standard hollow output shaft mounting

Reduces total drive envelope size, weight and cost. Single and double solid output shaft is available.

Impregnated and machined bearing caps

With exterior machined surfaces enable a variety of mounting accessories. Extra-deep thread engagement provided for greater support strength. Zinc plated hardware.

Oversize bearing

For radial load capability and maximum hollow output shaft diameter.

Vent Free Design.

No breather or vents to leak! Factory lubricated for life with synthetic, semi-fluid gear lubricant with an operating range of -15°C to 130°C.

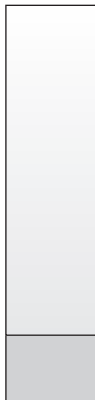
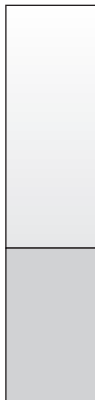


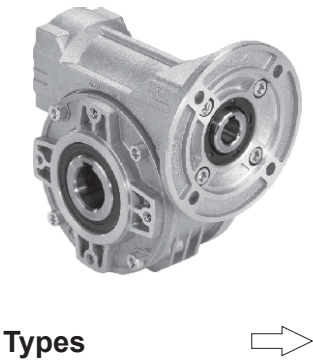
www.tvtamerica.com



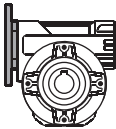
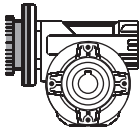
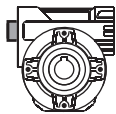
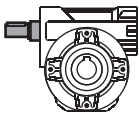
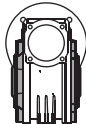
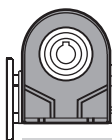
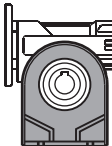
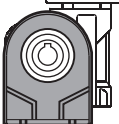
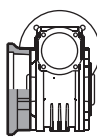
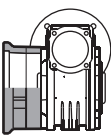
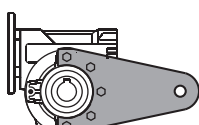
Specific type datasheet on page...

On page / A pagina / En la página

1-5	1-7	1-9	1-11
			
045 345 lb in	050 611 lb in	063 1240 lb in	085 2921lb in

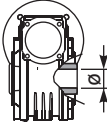
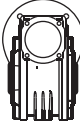
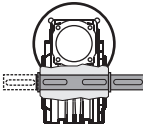
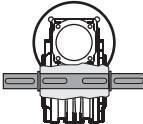
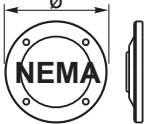
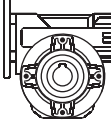
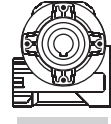
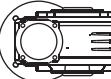
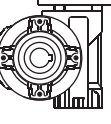
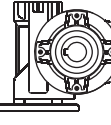


1

Type	Size	Mounting
P	045	PA
Worm gearboxes  P  M  B  R	045 050 063 085	 FB  PB  PA  PV  FC  FL F1 F2 F3 F4  BR



On request we can deliver our products according to the ATEX

Ratio Rapporto Relación	Hub Mozzo corona Nucleo corona	Output shaft Albero lento Eje solida	Motor size Grandezza motore Tamaño motor	Terminal box position Posizione morsettiera Posición caja de bornes	Mounting position Posizione montaggio Position de montaje
10	U	Ø	-W	B	B3
See technical data table Vedi tabelle dati tecnici. Ver tabla datos técnicos	 U INCH 045 ⇒ Ø0.750" 050 ⇒ Ø1.000" 063 ⇒ Ø1.125" 085 ⇒ Ø1.500"	 Ø  S  D	 With Flange for type P -W ⇒ 56C -X ⇒ 143/5TC -Y ⇒ 182/4TC -N without flange Senza flangia For Modular Base type B 045 ⇒ Ø0.625 050 ⇒ Ø0.625 063 ⇒ Ø0.875 085 ⇒ Ø1.125 -Z For Type - R	 A  B STANDARD  C  D	 B3  B8  B6  B7  V5  V6

USEFUL FORMULAS

REQUIRED POWER

Lifting

$$P \text{ [KW]} = \frac{M \text{ [Kg]} \cdot g \text{ [9.81]} \cdot v \text{ [m / s]}}{1000}$$

Rotation

$$P \text{ [KW]} = \frac{M \text{ [Nm]} \cdot n \text{ [rpm]}}{9550}$$

Linear movement

$$P \text{ [KW]} = \frac{F \text{ [N]} \cdot v \text{ [m / s]}}{1000}$$

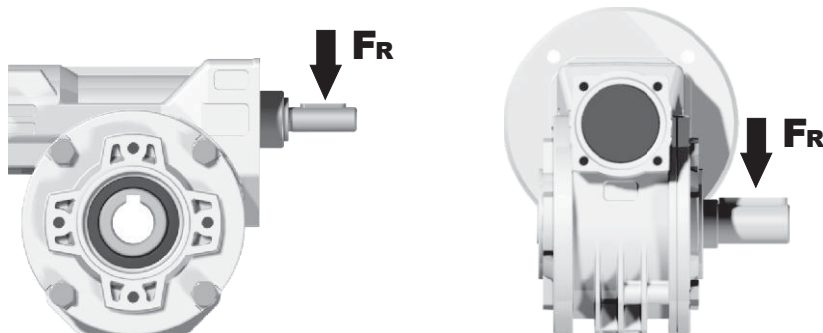
TORQUE

$$M \text{ [Nm]} = \frac{9550 \cdot P \text{ [KW]}}{n \text{ [rpm]}}$$

$$M \text{ [lb in]} = \frac{63030 \cdot P \text{ [HP]}}{n \text{ [rpm]}}$$

RADIAL LOADS

- Radial load generated by external transmissions keyed onto input and/or output shafts.

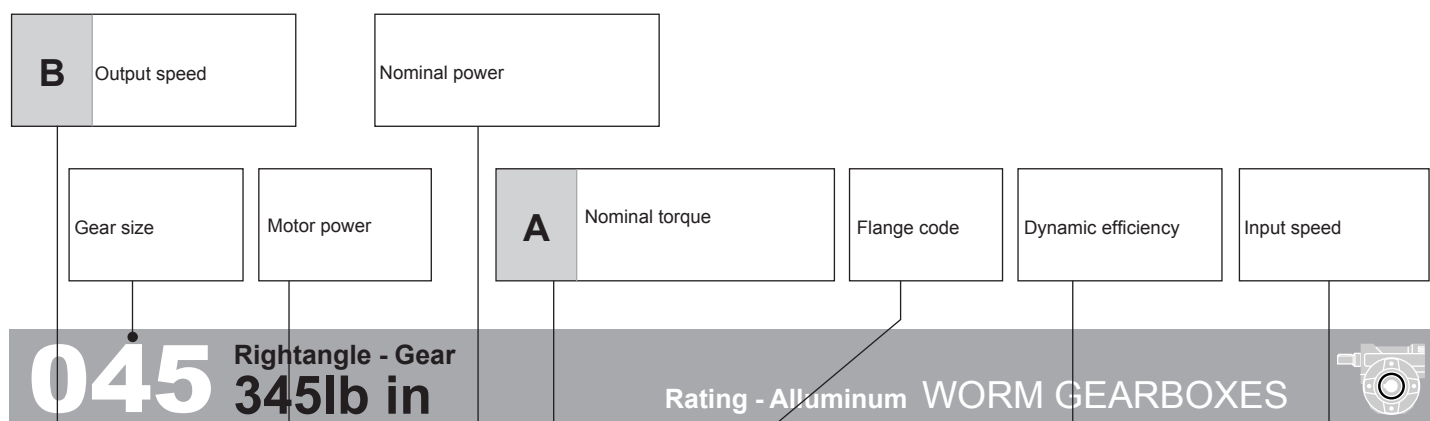


$F_R \text{ [N]} = \frac{M \text{ [Nm]} \cdot 2000}{d \text{ [mm]}} \cdot f_k$		$F_R \text{ [N]} = \frac{M \text{ [lb in]} \cdot 8.9}{d \text{ [in]}} \cdot f_k$	
M	Output torque		
d	Diam. of driving element		
f_k	Factor 1.15 Gearwheels 1.25 Chain sprochets 1.75 Narrow v-belt pulley 2.50 Flat-belt pulley		

— If your application requires higher radial loads, contact our technical office. Higher load may be possible.

How to select a gearbox

1



QUICK SELECTION

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges	Dynamic efficiency	Tooth Module [mm]	Ratios code
250.0	7	1	202	1.3	1.29	257	-W	RD	2.2	01
175.0	10	0.75	213	1.2	0.91	257	-	80	2.2	02
125.0	14	0.5	194	1.3	0.67	257	56C	77	2.4	03

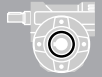
input speed (n_1) = 1750 min⁻¹



fs		Oper. hours per day		
Type of load and starts per hour		<2 h	2 - 8 h	8 - 16 h
Continuous or intermittent appl. with start / hour ≤ 10	Uniform	0.9	1	1.25
	Moderate	1	1.25	1.5
	Heavy	1.25	1.5	1.75
Intermittent application with start / hour > 10	Uniform	1.25	1.5	1.75
	Moderate	1.5	1.75	2
	Heavy	1.75	2	2.25

B)	Mounting with reduction ring	
C)	Motor flangeholes position/terminal box position	
B)	Available without reuction bushes	

A	Select required torque (according to service factor)
B	Select ouput speed
C	On the same line of selected geared motor, you can find the gear ratio
D	Select motor flange available (if requested)



QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency	Tooth Module  [mm]	 Ratios code
							-W	-			
							56C	-	RD		
250.0	7	1	202	1.3	1.29	257			80	2.2	01
175.0	10	0.75	213	1.2	0.91	257			79	2.2	02
125.0	14	0.5	194	1.3	0.67	257			77	2.4	03
83.3	21	0.5	253	1.4	0.69	345			67	1.6	04
62.5	28	0.5	328	1.1	0.53	345			65	2.5	05
47.3	37	0.33	277	1.2	0.42	345			63	1.8	06
38.0	46	0.33	323	1.1	0.36	345			59	1.5	07
29.2	60	0.25	303	1.1	0.29	345			56	1.2	08
25.0	70	0.25	340	0.8	0.19	257			54	1.0	09
17.2	102	0.25*	450	<0.8	0.14	248			49	0.72	10

Motor Flanges Available



B) Supplied with Reduction Bushing



B) Available on Request without reduction bushing



C) Motor Flange Holes Position

* Power higher than the maximum one which can be supported by the gearbox. Select according to the torque M_{2R}

EN Unit 045 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

LUBRICATION 045 Oil Quantity 3.17 ounces

AGIP Telium VSF 320

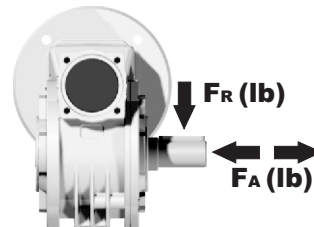
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

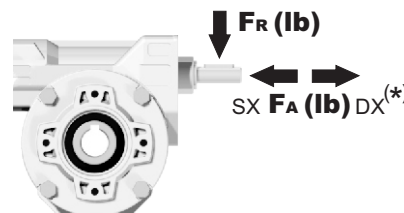
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	40	202
150	45	225
100	49	247
75	54	270
50	58	315
25	67	405
15	90	450

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	9	47

*Strong axial loads in the DX direction are not allowed.

tab. 2

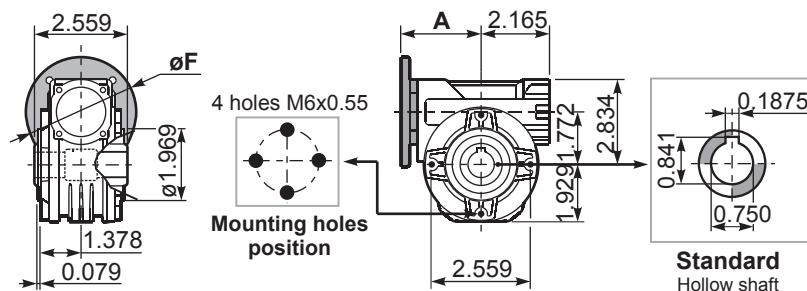
P045FB...

Basic wormbox

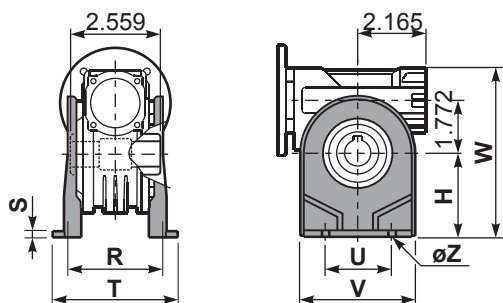
Gearbox
weight

5.30 lb

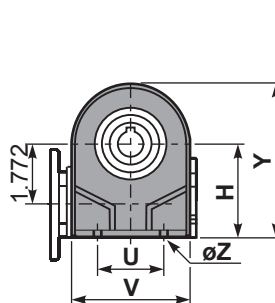
M. flanges	Kit code	øF	A
56C	KU050.4.041	6.5	3.709



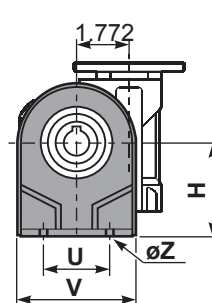
P045PA...

Feet
Piedini

P045PB...

Feet
Piedini

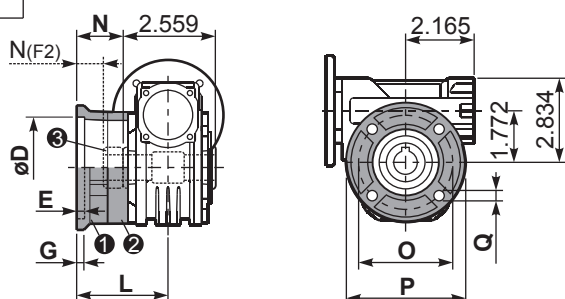
P045PV...

Feet
Piedini

	H	R	S	T	U	V	Y	W	øZ	kit code
type B	2.835	3.189	0.118	3.937	2.047	3.858	4.764	5.669	0.41	K045.9.022
type S	2.795	3.307	0.315	3.937	2.756	3.543	4.724	5.630	0.31	KS045.9.023

P045FC...

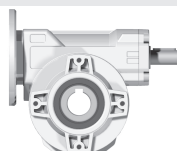
Output flange



type B	øD	E	G	L	N	O	P	Q	kit code
FC	2.3681 2.3642	0.35	0.35	2.382	1.102	3.425	4.331	0.33	1 K045.9.010 2 -
FL	2.3681 2.3642	0.35	0.35	3.563	2.283	3.425	4.331	0.33	1 K045.9.010 2 K045.0.200
type S	øD	E	G	L	N	O	P	Q	kit code
F1	3.7480 3.7461	0.16	0.43	2.894	1.614	4.528	5.512	0.35	1 KS045.9.013 2 -
F2	2.3681 2.3642	0.35	0.35	2.382	0.748	3.425	4.331	0.33	1 KS045.9.010 2 S045.0.204
F3	3.1555 3.1535	0.12	0.31	2.028	0.748	3.937	4.724	0.35	1 KS045.9.014 2 -

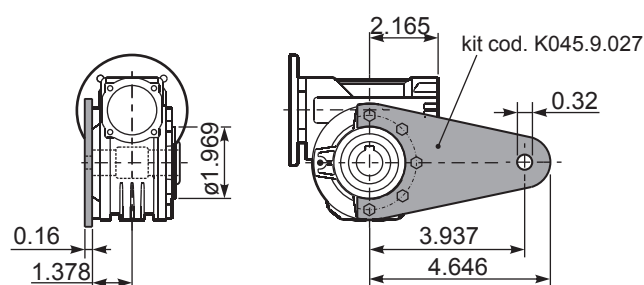
On request : Special Hollow Shafts
Mozzo Uscita Speciale

On request : Double extended worm shaft



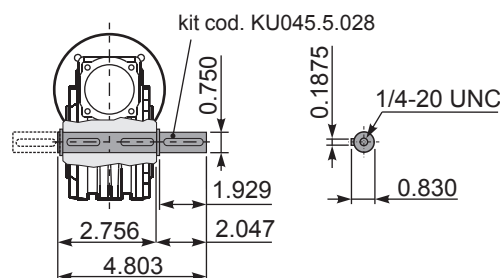
P045BR...

Reaction arm

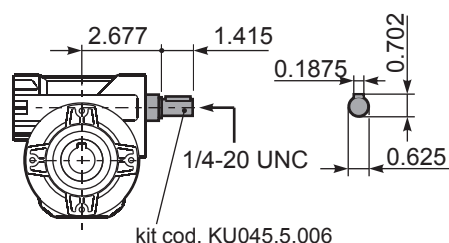


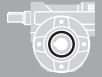
P045.....S...

Single Shaft



R045FB...

Input shaft
Albero in entrata



QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency	Tooth Module [mm]	Ratios code
							-W	-			
							56C	-	RD		
250.0	7	2	413	1.2	2.34	478			82	2.5	01
175.0	10	1.5	432	1.2	1.84	522			80	2.4	02
125.0	14	1	398	1.4	1.46	575			79	2.6	03
97.2	18	1	486	1.1	1.09	522			75	2.0	04
67.3	26	0.75	485	1.2	0.87	558			69	2.7	05
58.3	30	0.75	567	1.1	0.82	611			70	2.5	12
48.6	36	0.5	447	1.4	0.69	611			69	2.1	06
40.7	43	0.5	511	1.1	0.57	575			66	1.8	07
35.0	50	0.5	558	1.0	0.51	558			62	1.5	13
29.2	60	0.33	414	1.3	0.42	522			58	1.3	08
25.7	68	0.33	461	1.1	0.35	487			57	1.2	09
21.9	80	0.25	389	1.2	0.31	478			54	1.0	10
17.5	100	0.25	450	1.0	0.24	434			50	0.8	11

Motor Flanges Available

B) Supplied with Reduction Bushing

B) Available on Request without reduction bushing



C) Motor Flange Holes Position

EN Unit 050 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us. See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox. For complete documentation please visit our web site.

LUBRICATION 050 Oil Quantity 4.93 ounces

AGIP Telium VSF 320

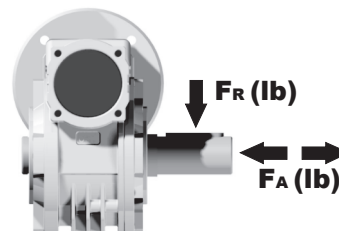
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

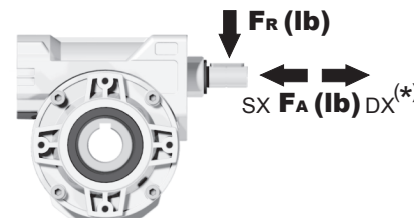
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	54	270
150	63	315
100	67	337
75	76	382
50	85	427
25	108	562
15	126	629

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	17	85

*Strong axial loads in the DX direction are not allowed.

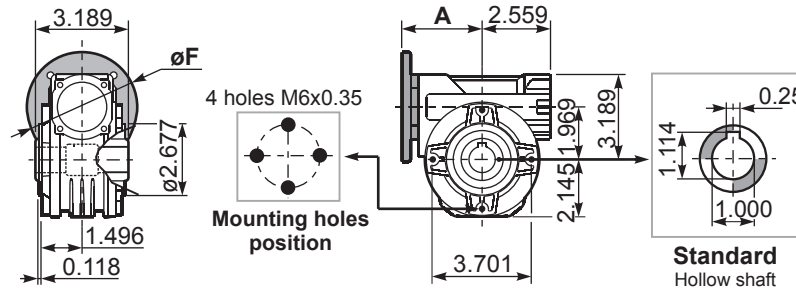
tab. 2

P050FB...

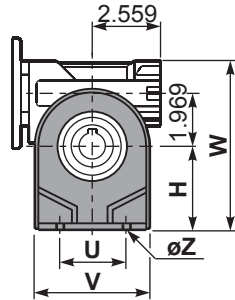
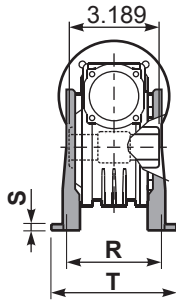
Basic wormbox

Gearbox
weight **8.40 lb**

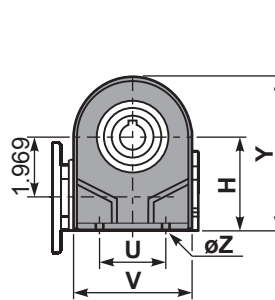
M. flanges	Kit code	øF	A
56C	KU050.4.041	6.5	3.886

Standard
Hollow shaft

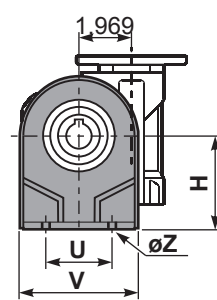
P050PA...

Feet
Piedini

P050PB...

Feet
Piedini

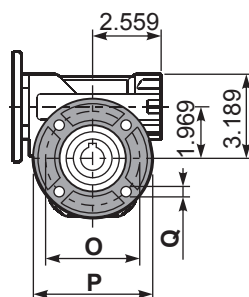
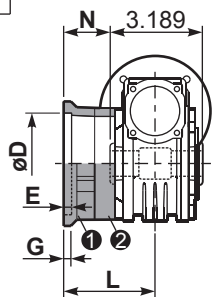
P050PV...

Feet
Piedini

	H	R	S	T	U	V	Y	W	øZ	kit code
type B	3.228	3.878	0.138	4.843	2.480	4.449	5.453	6.417	0.41	K050.9.022
type S	3.346	3.780	0.394	4.488	3.346	4.331	5.492	6.535	0.39	KS050.9.023

P050FC...

Output flange

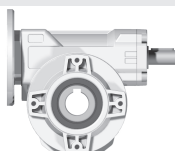


type B	øD	E	G	L	N	O	P	Q	kit code
FC	2.7638 2.7618	0.35	0.47	3.346	1.752	3.543	4.843	0.41	1 K050.9.010 2 -
FL	2.7638 2.7618	0.35	0.47	4.508	2.913	3.543	4.843	0.41	1 K050.9.010 2 K050.0.200
type S	øD	E	G	L	N	O	P	Q	kit code
F1	4.3386 4.3366	0.16	0.43	3.287	1.693	5.118	6.299	0.39	1 KS050.9.012 2 -
F2	2.7638 2.7618	0.35	0.47	3.012	1.417	3.543	4.843	0.41	1 KS050.9.014 2 -
F3	3.7415 3.7402	0.16	0.39	2.618	1.024	4.528	5.512	0.39	1 KS050.9.013 2 -

On request : Special Hollow Shafts

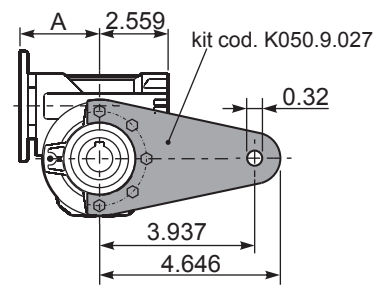
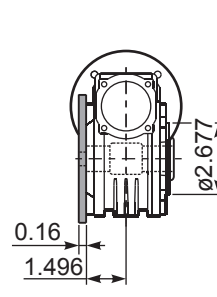


On request : Double extended worm shaft



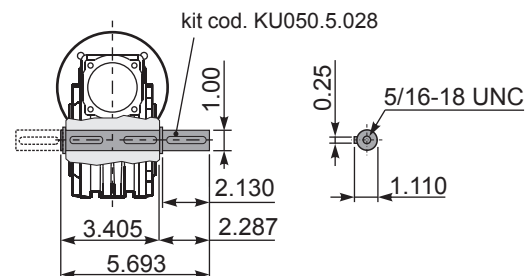
P050BR...

Reaction arm



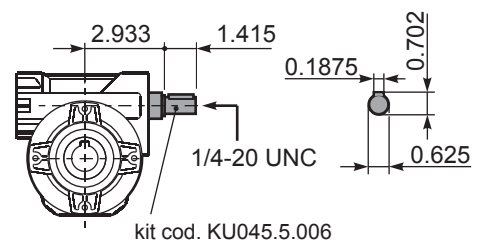
P050.....S...

Single Shaft



R050FB...

Input shaft





QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency RD	Tooth Module [mm]	Ratios code
							-W 56C	-X 143-5TC			
250.0	7	2	419	2.5	5.10	1053	B		83	3.1	01
175.0	10	2	583	1.9	3.93	1133	B		81	3.1	02
116.7	15	2	854	1.4	2.75	1159	B		79	3.1	03
92.1	19	2	1068	1.1	2.20	1159	B		78	2.6	04
72.9	24	1.5	972	1.2	1.87	1195	B		75	2.0	05
58.3	30	1.5	1199	1.0	1.56	1230	B		74	3.2	06
48.6	36	1	882	1.4	1.42	1239	B		68	2.7	07
43.8	40	1	951	1.2	1.25	1177	B		66	2.5	13
38.9	45	1	1070	1.1	1.08	1142	B		66	2.1	08
29.2	60	0.75	1005	1.1	0.83	1097	B		62	1.6	12
26.1	67	0.5	724	1.4	0.73	1044	B		60	1.5	09
21.9	80	0.5	821	1.2	0.62	1000	B		57	1.3	10
18.6	94	0.5	880	1.1	0.58	1000	B		52	1.1	11

Motor Flanges Available

B) Supplied with Reduction Bushing

B) Available on Request without reduction bushing

C) Motor Flange Holes Position

EN Unit 063 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site

LUBRICATION 063 Oil Quantity 14.11 ounces

AGIP Telium VSF 320

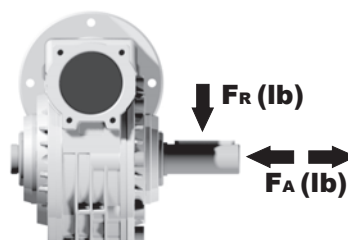
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

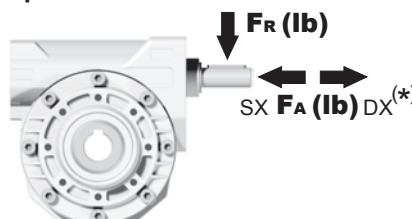
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	81	404.5
150	90	450
100	103.5	517
75	112.5	562
50	135	674.5
25	157	854
15	180	899

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	20	101

*Strong axial loads in the DX direction are not allowed.

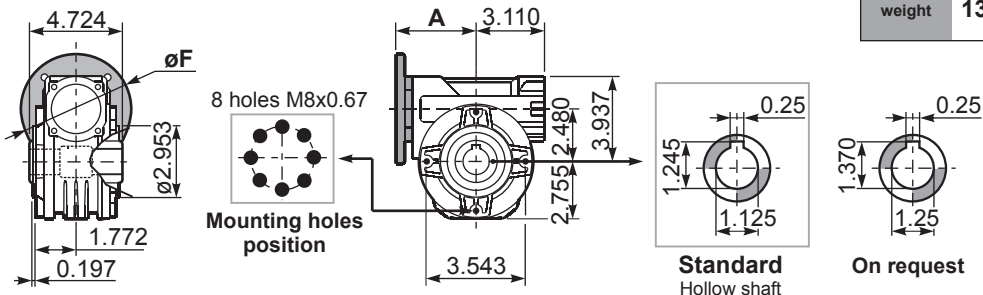
tab. 2

P063FB...

Basic wormbox

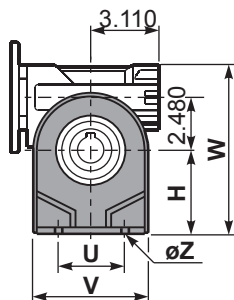
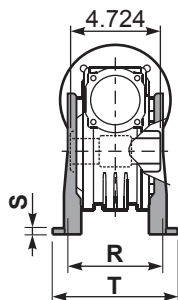
Gearbox weight **13.23 lb**

M. flanges	Kit code	ϕF	A
56C	KU063.4.041	6.50	4.409
143/5 TC	KU063.4.041	6.50	4.409



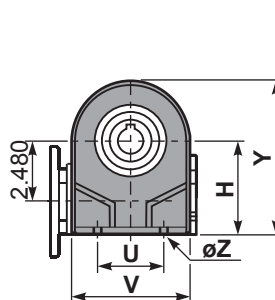
P063PA...

Feet



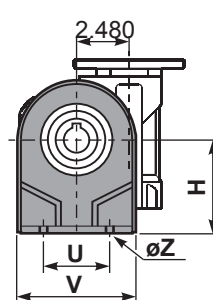
P063PB...

Feet



P063PV...

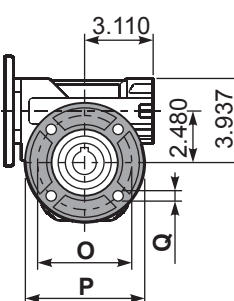
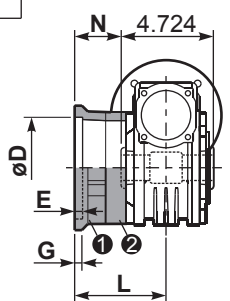
Feet



	H	R	S	T	U	V	Y	W	ϕZ	kit code
type B	3.937	4.370	0.157	5.669	3.740	5.236	6.693	7.874	0.41	K063.9.022
type S	-	-	-	-	-	-	-	-	-	-

P063FC...

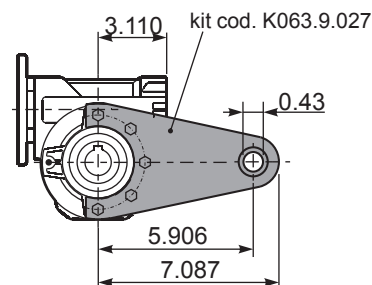
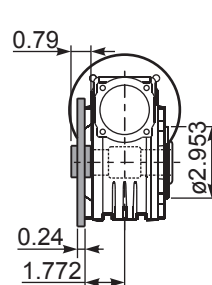
Output flange



type B	ϕD	E	G	L	N	O	P	Q	kit code
FC	4.5354 4.5335	0.28	0.51	3.386	1.024	5.906	6.890	0.43	① K063.9.010 ② -
FL	4.5354 4.5335	0.28	0.51	4.567	2.205	5.906	6.890	0.43	① K063.9.010 ② K063.0.200
type S	ϕD	E	G	L	N	O	P	Q	kit code
F1	5.1260 5.1240	0.28	0.51	4.016	1.654	6.496	7.874	0.51	① KS070.9.013 ② -
F2	4.5354 4.5354	0.28	0.51	4.567	2.205	5.906	6.890	0.43	① KS063.9.013 ② -
F3	4.3321 4.3307	0.20	0.43	3.228	0.866	5.118	6.299	0.39	① KS063.9.011 ② -

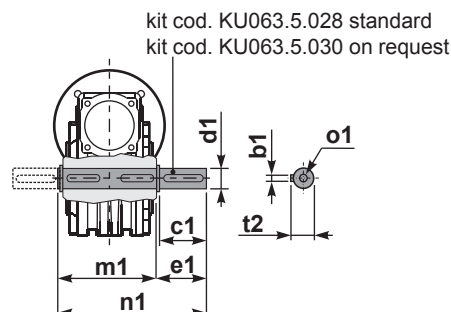
P063BR...

Reaction arm



P063.....S...

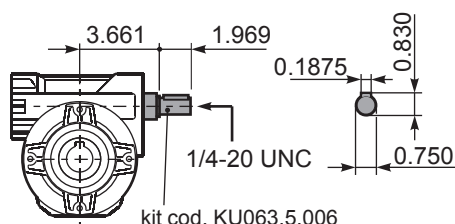
Single Shaft



	b1	c1	d1	e1	m1	n1	t2	o1	kit code
Standard	0.25	2.240	1.125	2.437	4.992	7.429	1.23	5/16-18	KU063.5.028
On request	0.25	2.362	1.250	2.559	4.992	7.551	1.36	5/16-18	KU063.5.030

R063FB...

Input shaft



On request : Special Hollow Shafts



On request : Double extended worm shaft





QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Dynamic efficiency RD	Tooth Module  [mm]	 Ratios code
							-W 56C	-X 143-5TC	-Y 182-4TC			
250.0	7	7.5	1664	1.3	9.90	2168	B	B		88	4.23	01
175.0	10	7.5	2161	1.1	8.40	2390	B	B		80	4.2	02
125.0	14	5	1967	1.3	6.61	2567	B	B		78	4.5	03
87.5	20	3	1707	1.5	4.41	2478	B	B		79	3.4	04
79.5	22	3	1854	1.3	4.06	2478	B	B		78	3.1	05
62.5	28	3	2269	1.3	3.91	2921	B	B		75	4.7	06
46.1	38	3	2915	1.0	2.95	2832	B	B		71	3.5	07
38.0	46	2	2253	1.2	2.47	2744	B	B		68	3.1	08
33.7	52	2	2472	1.0	1.99	2434	B	B		66	2.7	09
26.1	67	1.5	2353	1.0	1.57	2434	B	B		65	2.1	10
23.6	74	1.5	2319	1.0	1.48	2257	B	B		58	1.9	11
18.2	96	1	1833	1.1	1.13	2036	B	B		53	1.5	12

Motor Flanges Available



Supplied with Reduction Bushing



Available on Request without reduction bushing



Motor Flange Holes Position

EN Unit 085 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.

See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox.

For complete documentation please visit our web site.

LUBRICATION 085 Oil Quantity 42.33 ounces

AGIP Telium VSF 320

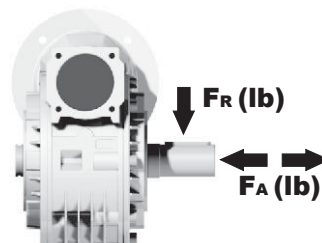
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

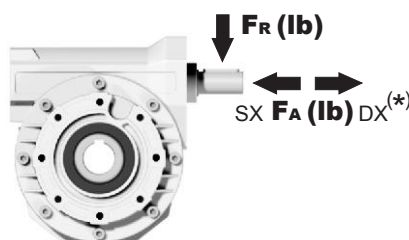
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	112	562
150	130	652
100	135	674
75	157	787
50	180	899
25	225	1124
15	261	1304

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	36	182

*Strong axial loads in the DX direction are not allowed.

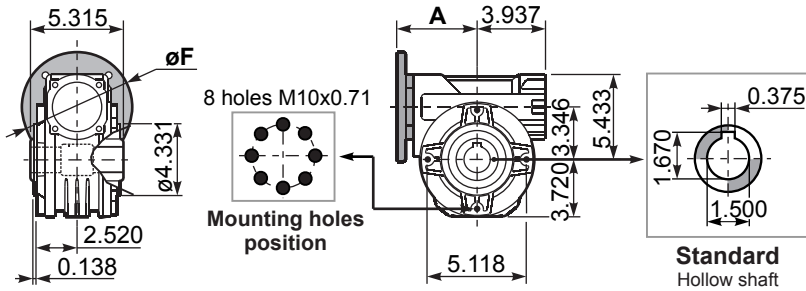
tab. 2

P085**FB**...

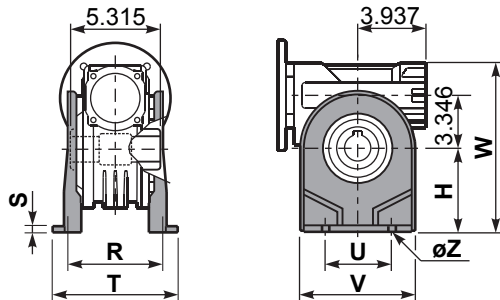
Basic wormbox

Gearbox weight	24.25 lb
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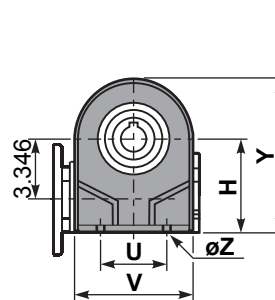
M. flanges	Kit code	øF	A
56C	KU085.4.041	6.50	4.823
143/5 TC	KU085.4.041	6.50	4.823
182/4 TC	KU085.4.042	8.88	5.527

P085**PA...**

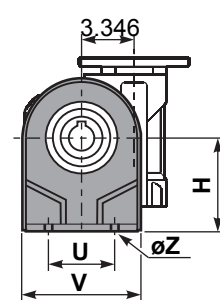
Feet

[illegible]P085**PB**...

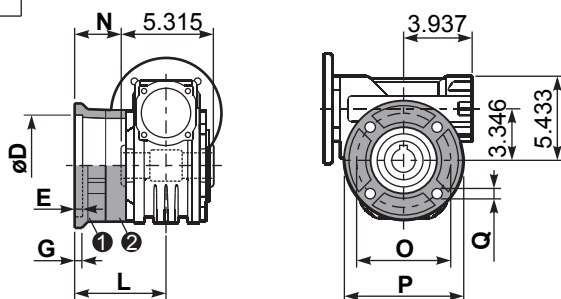
Feet

P085**PV**...

Feet

P085**FC**...

Output flange



type B	øD	E	G	L	N	O	P	Q	kit code
FC	5.9867 5.9843	0.20	0.63	4.252	1.594	6.929	8.071	0.51	① K085.9.010 ② -
FL	5.9867 5.9843	0.20	0.63	5.846	3.189	6.929	8.071	0.51	① K085.9.010 ② K085.0.201
type S	øD	E	G	L	N	O	P	Q	kit code
F1	5.1197 5.1181	0.20	0.51	4.626	1.969	6.496	7.874	0.45	① KS085.9.012 ② -
F2	5.9867 5.9843	0.20	0.59	5.807	3.150	7.087	8.071	0.49	① KS085.9.013 ③ -
F4	5.1197 5.1181	0.20	0.51	4.193	1.535	6.496	7.874	0.51	① KS085.9.015 ② -

On request : Special Hollow Shafts

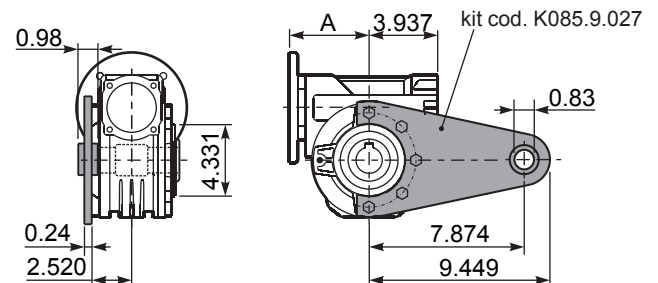


On request : Double extended worm shaft

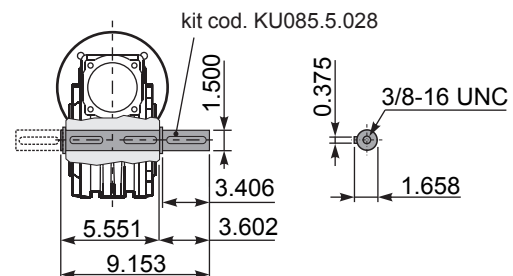


P085BR...

Reaction arm

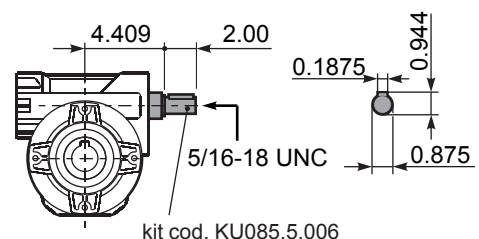
P085.....**S**...

Single Shaft



R085FB...

Input shaft



Square worm gearboxes

A modular and compact product

Single-piece aluminum alloy housing

Is vacuum impregnated (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint. Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing.

Single piece alloy steel input shaft and worm shaft.

High helix angle worm is case-hardened (Rc 58-60), ground, teeth are profiled and radiused, for noise reduction and enhanced efficiency.

Oversized bearings

Support positively-retained, high speed shaft for higher shock load capacity - ideal for frequent starting and reversing application. Premium, Nitrile® high temperature seals each end.

Flange

Fully modular to IEC and compact integrated motor. NEMA C flange.

Premium, high temperature

Nitrile® output seals

Bronze alloy worm gears.

Is centrifugally cast onto an iron hub for maximum strength and superior life.

Over size bearing

For radial load capability and maximum hollow output shaft diameter.

Standard hollow output shaft mounting

Reduces total drive envelope size, weight and cost. Single and double solid output shaft is available.

Impregnated and machined bearing caps

With exterior machined surfaces enable a variety of mounting accessories. Extra-deep thread engagement provided for greater support strength. Zinc plated hardware.

Vent Free Design.

No breather or vents to leak! Factory lubricated for life with synthetic, semi-fluid gear lubricant with an operating range of -15°C to 130°C.

oil free



vent free

www.tvtamerica.com

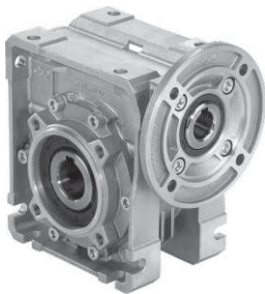


World wide sales network.

Specific type datasheet on page...

On page / A pagina / En la página

2-5 2-7 2-9 2-11



Types / tipi / Tipos ➡



Q45
345 lb in



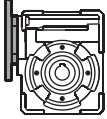
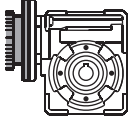
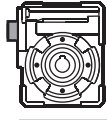
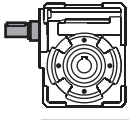
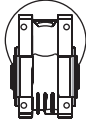
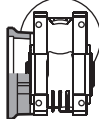
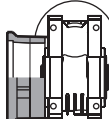
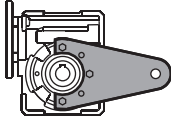
Q50
611 lb in

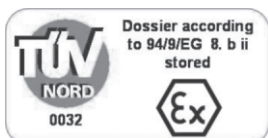


Q63
1240 lb in

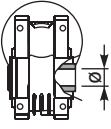
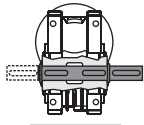
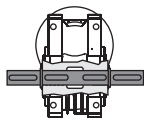
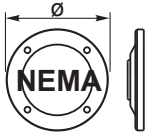
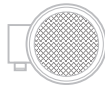
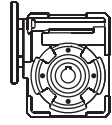
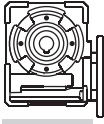
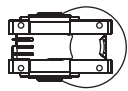
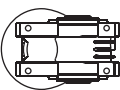
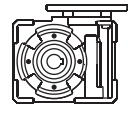
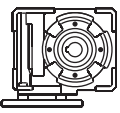


Q85
2921lb in

Type	Size - Grandezza	Mounting
P	Q45	FC
Worm gearboxes  P  M  B  R	Q45 Q50 Q63 Q85	 FB  FC  FL F1 F2 F3 F4  BR



On request we can deliver our products according to the ATEX

Ratio	Hub	Output shaft	Motor size	Terminal box position	Mounting position
10	U	Ø	-W	B	B3
See technical data table	 U INCH Q45 ⇒ Ø0.750" Q50 ⇒ Ø1.000" Q63 ⇒ Ø1.125" Q85 ⇒ Ø1.500"	 Ø  S  D	 With Flange for type P -W ⇒ 56C -X ⇒ 143/5TC -Y ⇒ 182/4TC -N For Modular Base type B Q45 ⇒ Ø0.625 Q50 ⇒ Ø0.625 Q63 ⇒ Ø0.875 Q85 ⇒ Ø1.125 -Z For Type - R	 A  B STANDARD  C  D	 B3  B8  B6  B7  V5  V6

USEFUL FORMULAS

REQUIRED POWER

Lifting

$$P \text{ [KW]} = \frac{M \text{ [Kg]} \cdot g \text{ [9.81]} \cdot v \text{ [m / s]}}{1000}$$

Rotation

$$P \text{ [KW]} = \frac{M \text{ [Nm]} \cdot n \text{ [rpm]}}{9550}$$

Linear movement

$$P \text{ [KW]} = \frac{F \text{ [N]} \cdot v \text{ [m / s]}}{1000}$$

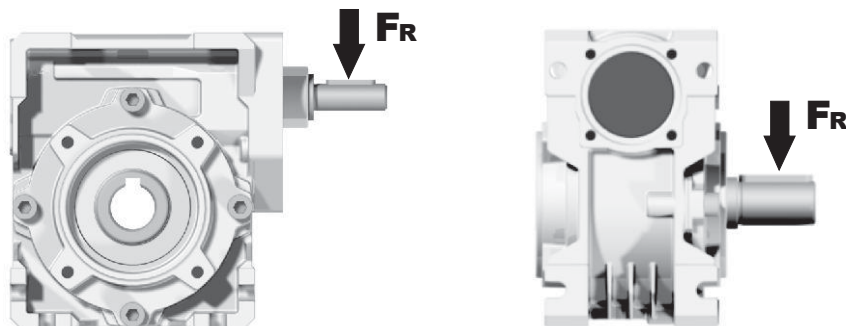
TORQUE

$$M \text{ [Nm]} = \frac{9550 \cdot P \text{ [KW]}}{n \text{ [rpm]}}$$

$$M \text{ [lb in]} = \frac{63030 \cdot P \text{ [HP]}}{n \text{ [rpm]}}$$

RADIAL LOADS

- Radial load generated by external transmissions keyed onto input and/or output shafts.



$F_R \text{ [N]} = \frac{M \text{ [Nm]} \cdot 2000}{d \text{ [mm]}} \cdot f_k$		$F_R \text{ [N]} = \frac{M \text{ [lb in]} \cdot 8.9}{d \text{ [in]}} \cdot f_k$	
M	Output torque		
d	Diam. of driving element		
f_k	Factor 1.15 Gearwheels 1.25 Chain sprochets 1.75 Narrow v-belt pulley 2.50 Flat-belt pulley		

— If your application requires higher radial loads, contact our technical office. Higher load may be possible.

How to select a gearbox

B Output speed

Nominal power

Gear size

Motor power

A Nominal torque

Flange code

Dynamic efficiency

Input speed

Q45

Rightangle - Gear

345lb in

Rating - Alluminum WORM GEARBOXES

QUICK SELECTION

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges	Dynamic efficiency	Tooth Module [mm]	Ratios code
250.0	7	1	202	1.3	1.29	257	-W	RD	2.2	01
175.0	10	0.75	213	1.2	0.91	257	-	79	2.2	02
125.0	14	0.5	194	1.3	0.67	257	56C	77	2.4	03

input speed (n_1) = 1750 min⁻¹

C Ratio

Transmitted torque

Service factor

Nominal module

Notes

fs

Type of load and starts per hour		Oper. hours per day		
		<2 h	2 - 8 h	8 - 16 h
Continuous or intermittent appl. with start / hour ≤ 10	Uniform	0.9	1	1.25
	Moderate	1	1.25	1.5
	Heavy	1.25	1.5	1.75
Intermittent application with start / hour > 10	Uniform	1.25	1.5	1.75
	Moderate	1.5	1.75	2
	Heavy	1.75	2	2.25

D Motor flange available

B)	Mounting with reduction ring	
C)	Motor flange holes position/terminal box position base motor	
B)	Available without reduction bushes	

2

A	Select required torque (according to service factor)
B	Select output speed
C	On the same line of selected geared motor, you can find the gear ratio
D	Select motor flange available (if requested)



QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency	Tooth Module  [mm]	 Ratios code
							-W	-			
							56C	-	RD		
250.0	7	1	202	1.3	1.29	257			80	2.2	01
175.0	10	0.75	213	1.2	0.91	257			79	2.2	02
125.0	14	0.5	194	1.3	0.67	257			77	2.4	03
83.3	21	0.5	253	1.4	0.69	345			67	1.6	04
62.5	28	0.5	328	1.1	0.53	345			65	2.5	05
47.3	37	0.33	277	1.2	0.42	345			63	1.8	06
38.0	46	0.33	323	1.1	0.36	345			59	1.5	07
29.2	60	0.25	303	1.1	0.29	345			56	1.2	08
25.0	70	0.25	340	0.8	0.19	257			54	1.0	09
17.2	102	0.25*	450	<0.8	0.14	248			49	0.72	10

Motor Flanges Available

 B) Supplied with Reduction Bushing

B) Available on Request without reduction bushing

 C) Motor Flange Holes Position

* Power higher than the maximum one which can be supported by the gearbox. Select according to the torque M_{2R}

EN Unit Q45 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

LUBRICATION Q45 Oil Quantity 3.17 ounces

AGIP Telium VSF 320

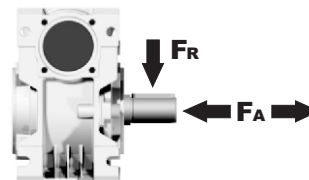
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

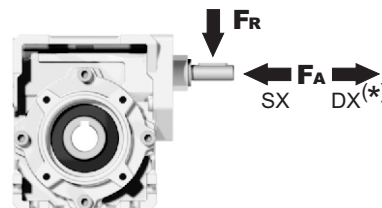
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	40	202
150	45	225
100	49	247
75	54	270
50	58	315
25	67	405
15	90	450

Input shaft



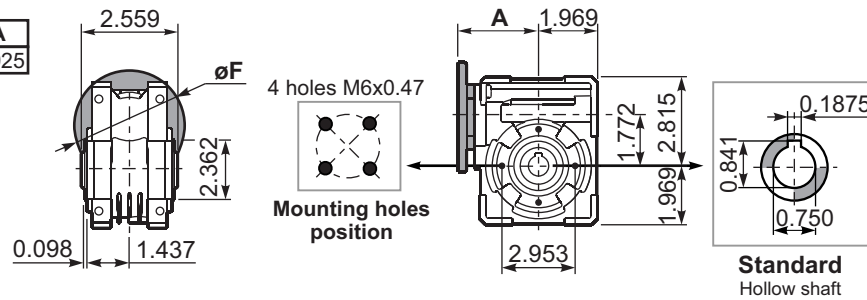
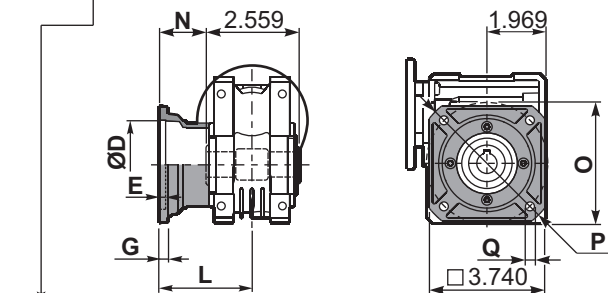
n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	9	47

*Strong axial loads in the DX direction are not allowed.

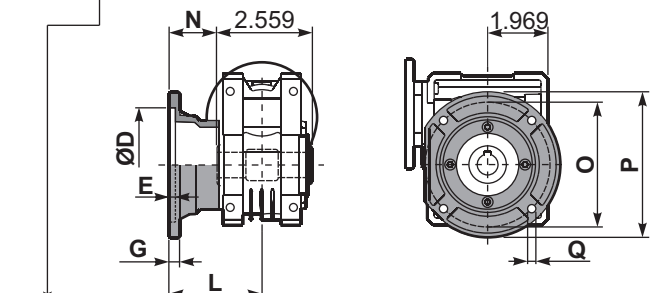
tab. 2

PQ45**FB**... Basic wormboxGearbox weight **5.07 lb**

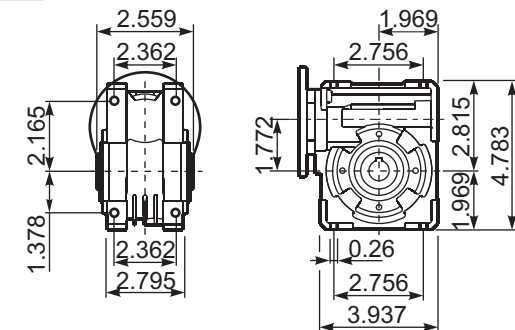
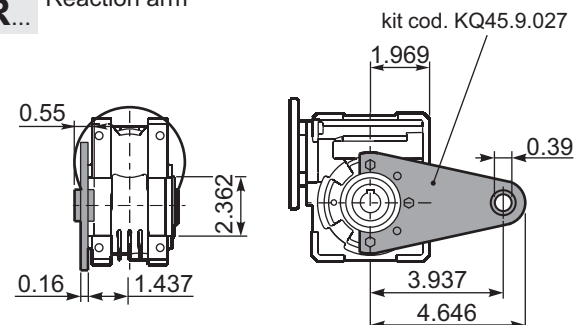
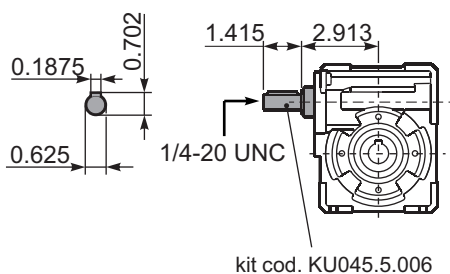
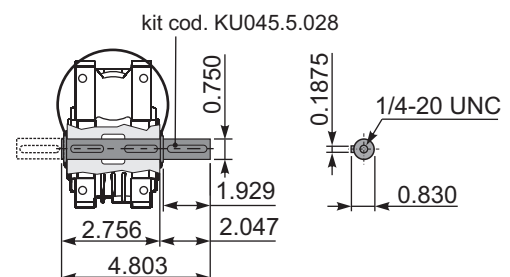
M. flanges	Kit code	øF	A
56C	KU050.4.041	6.5	3.925

PQ45**FC**... Square flange

type B	øD	E	G	L	N	O	P	Q	kit code
FC	2.3640 2.3622	0.16	0.28	2.638	1.358	2.953	4.331	0.35	KQ45.9.010
FL	2.3640 2.3622	0.16	0.28	3.819	2.539	2.953	4.331	0.35	KQ45.9.011

PQ45**F1**... Round flange

type S	øD	E	G	L	N	O	P	Q	kit code
F1	3.7423 3.7402	0.20	0.35	3.150	1.870	4.528	5.512	0.37	KSQ45.9.012
F2	3.1514 3.1496	0.20	0.47	2.283	1.004	3.937	4.724	0.35	KSQ45.9.013

Q45**FB**... FeetPQ45**BR**... Reaction armRQ45**FB**... Input shaftPQ45.....**S**... Single Shaft

On request : Special Hollow Shafts



On request : Double extended worm shaft





QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency	Tooth Module  [mm]	Ratios code 
							-W	-			
							56C	-	RD		
250.0	7	2	413	1.2	2.34	478			82	2.5	01
175.0	10	1.5	432	1.2	1.84	522			80	2.4	02
125.0	14	1	398	1.4	1.46	575			79	2.6	03
97.2	18	1	486	1.1	1.09	522			75	2.0	04
67.3	26	0.75	485	1.2	0.87	558			69	2.7	05
58.3	30	0.75	567	1.1	0.82	611			70	2.5	12
48.6	36	0.5	447	1.4	0.69	611			69	2.1	06
40.7	43	0.5	511	1.1	0.57	575			66	1.8	07
35.0	50	0.5	558	1.0	0.51	558			62	1.5	13
29.2	60	0.33	414	1.3	0.42	522			58	1.3	08
25.7	68	0.33	461	1.1	0.35	487			57	1.2	09
21.9	80	0.25	389	1.2	0.31	478			54	1.0	10
17.5	100	0.25	450	1.0	0.24	434			50	0.8	11

Motor Flanges Available

B) Supplied with Reduction Bushing

B) Available on Request without reduction bushing



C) Motor Flange Holes Position

EN Unit Q50 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

LUBRICATION 050 Oil Quantity 4.93 ounces

AGIP Telium VSF 320

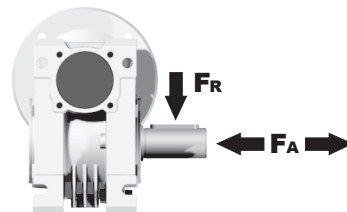
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

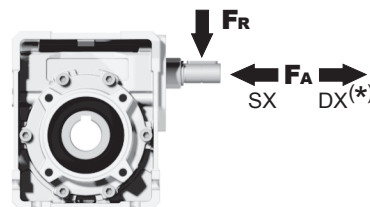
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	54	270
150	63	315
100	67	337
75	76	382
50	85	427
25	108	562
15	126	629

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	17	85

*Strong axial loads in the DX direction are not allowed.

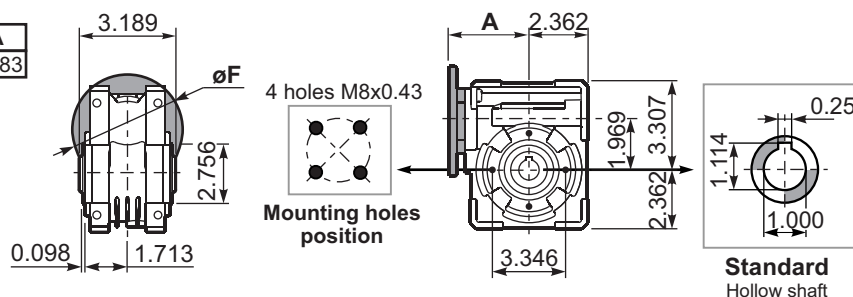
tab. 2

PQ50**FB**...

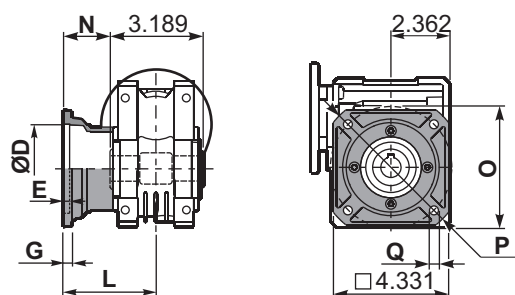
Basic wormbox

Gearbox
weight **7.165 lb**

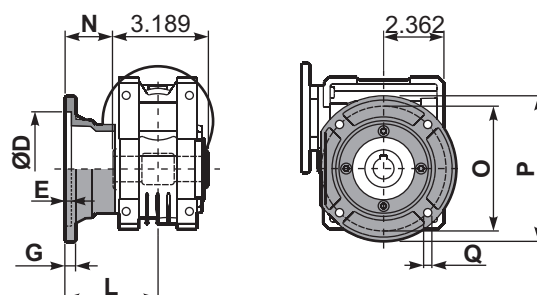
M. flanges	Kit code	øF	A
56C	KU050.4.041	6.5	4.083

PQ50**FC**...

Square flange

PQ50**F1**...

Round flange

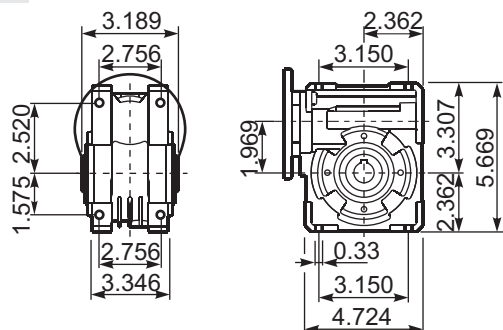


type B	øD	E	G	L	N	O	P	Q	kit code
FC	2.7577 2.7559	0.20	0.35	3.543	1.949	3.346	4.921	0.43	KQ50.9.010
FL	2.7577 2.7559	0.20	0.35	4.724	3.130	3.346	4.921	0.43	KQ50.9.011

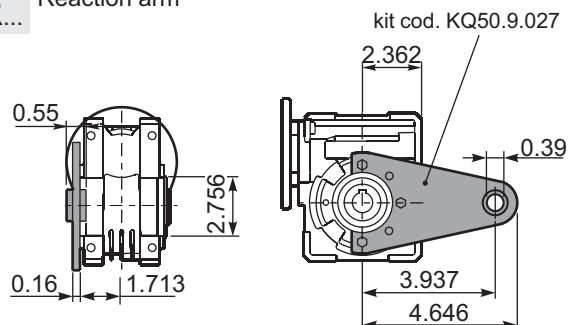
type S	øD	E	G	L	N	O	P	Q	kit code
F1	4.3328 4.3307	0.20	0.39	3.504	1.909	5.118	6.299	0.37	KSQ50.9.012
F2	3.7423 3.7402	0.20	0.57	2.835	1.240	4.528	5.512	0.43	KSQ50.9.013

PQ50**FB**...

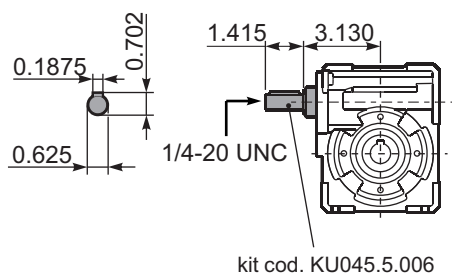
Feet

PQ50**BR**...

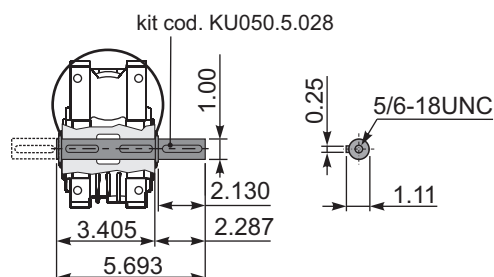
Reaction arm

RQ50**FB**...

Input shaft

PQ50.....**S**...

Single Shaft



On request : Special Hollow Shafts



On request : Double extended worm shaft





QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges		Dynamic efficiency RD	Tooth Module [mm]	Ratios code 
							-W 56C	-X 143-5TC			
250.0	7	2	419	2.5	5.10	1053	B		83	3.1	01
175.0	10	2	583	1.9	3.93	1133	B		81	3.1	02
116.7	15	2	854	1.4	2.75	1159	B		79	3.1	03
92.1	19	2	1068	1.1	2.20	1159	B		78	2.6	04
72.9	24	1.5	972	1.2	1.87	1195	B		75	2.0	05
58.3	30	1.5	1199	1.0	1.56	1230	B		74	3.2	06
48.6	36	1	882	1.4	1.42	1239	B		68	2.7	07
43.8	40	1	951	1.2	1.25	1177	B		66	2.5	13
38.9	45	1	1070	1.1	1.08	1142	B		66	2.1	08
29.2	60	0.75	1005	1.1	0.83	1097	B		62	1.6	12
26.1	67	0.5	724	1.4	0.73	1044	B		60	1.5	09
21.9	80	0.5	821	1.2	0.62	1000	B		57	1.3	10
18.6	94	0.5	880	1.1	0.58	1000	B		52	1.1	11

Motor Flanges Available



B) Supplied with Reduction Bushing



B) Available on Request without reduction bushing



C) Motor Flange Holes Position

EN Unit Q63 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity.
In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

LUBRICATION Q63 Oil Quantity 10.56 ounces

AGIP Telium VSF 320

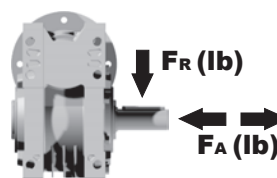
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

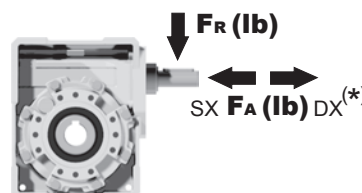
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	81	404.5
150	90	450
100	103.5	517
75	112.5	562
50	135	674.5
25	157	854
15	180	899

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	20	101

*Strong axial loads in the DX direction are not allowed.

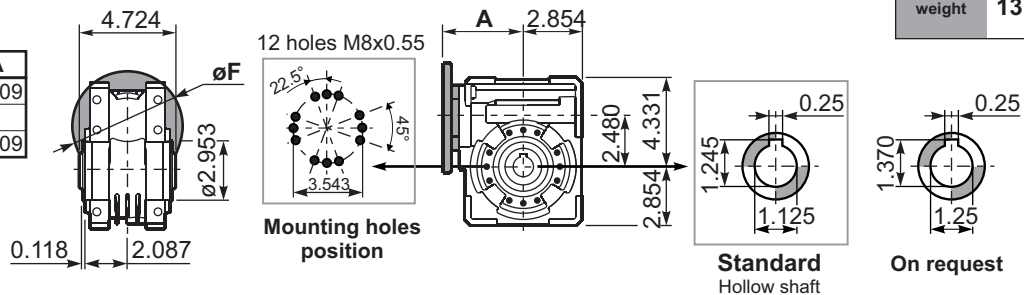
tab. 2

PQ63FB...

Basic wormbox

Gearbox weight **13.23 lb**

M. flanges	Kit code	øF	A
56C	KU063.4.041	6.50	4.409
143/5 TC	KU063.4.041	6.50	4.409

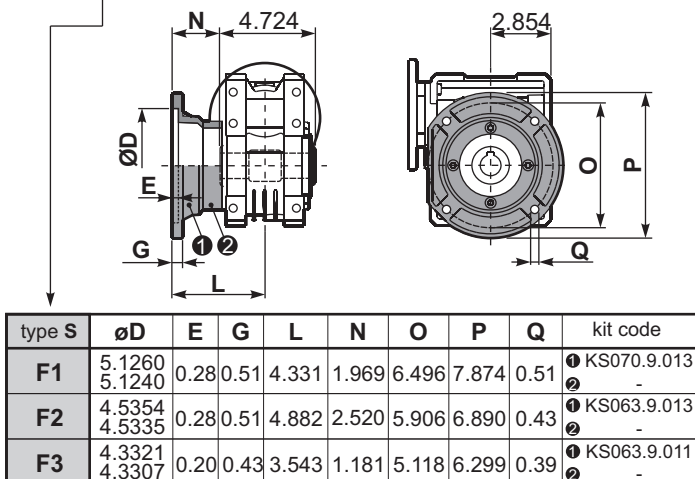
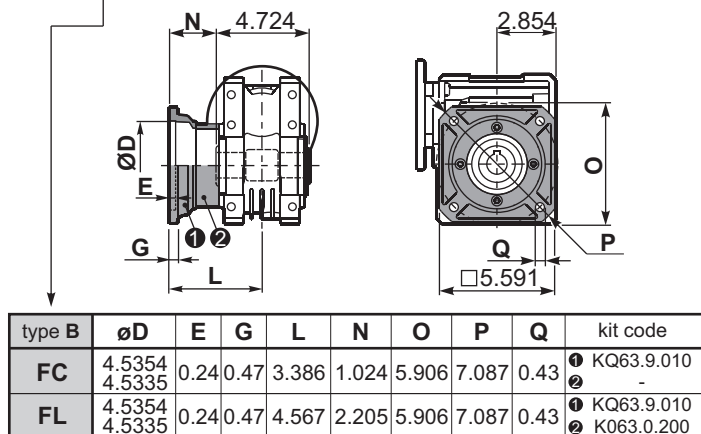


PQ63FC...

Square flange

PQ63F1...

Round flange

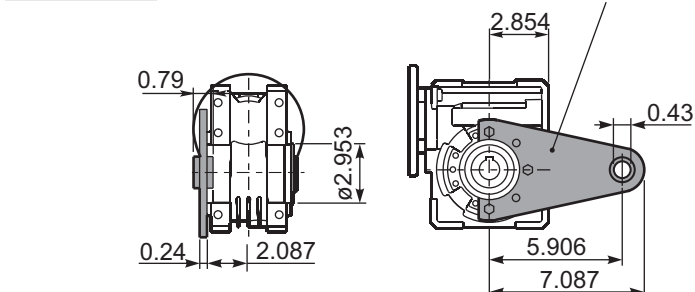
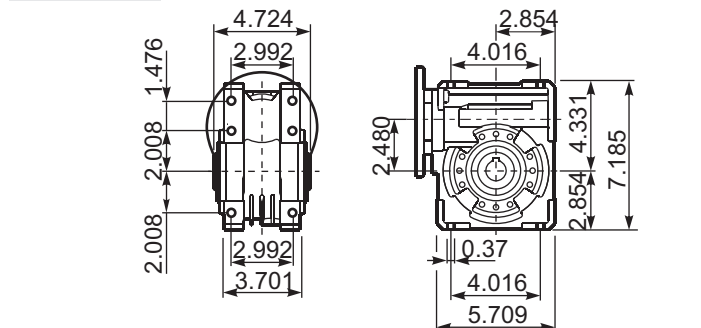


PQ63FB...

Feet

PQ63BR...

Reaction arm

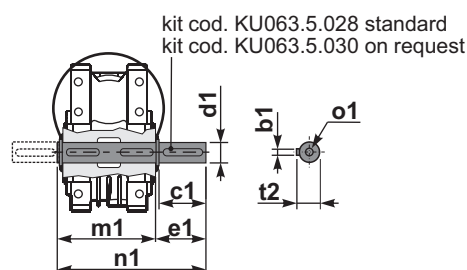
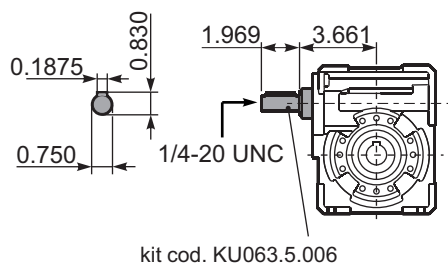


RQ63FB...

Input shaft

PQ63.....S...

Single Shaft



	b1	c1	d1	e1	m1	n1	t2	o1	kit code
Standard	0.25	2.240	1.125	2.437	4.992	7.429	1.23	5/16-18	KU063.5.028
On request	0.25	2.362	1.250	2.559	4.992	7.551	1.36	5/16-18	KU063.5.030

On request : Special Hollow Shafts



On request : Double extended worm shaft





QUICK SELECTION

input speed (n_1) = 1750 min⁻¹

Output Speed n_2 [min ⁻¹]	Ratio i	Motor power P_{1M} [HP]	Output torque M_{2M} [lb in]	Service factor f.s.	Nominal power P_{1R} [HP]	Nominal torque M_{2R} [lb in]	Available NEMA motor flanges			Dynamic efficiency RD	Tooth Module [mm]	Ratios code 
							-W	-X	-Y			
							56C	143-5TC	182-4TC			
250.0	7	7.5	1664	1.3	9.90	2168	B	B		88	4.23	01
175.0	10	7.5	2161	1.1	8.40	2390	B	B		80	4.2	02
125.0	14	5	1967	1.3	6.61	2567	B	B		78	4.5	03
87.5	20	3	1707	1.5	4.41	2478	B	B		79	3.4	04
79.5	22	3	1854	1.3	4.06	2478	B	B		78	3.1	05
62.5	28	3	2269	1.3	3.91	2921	B	B		75	4.7	06
46.1	38	3	2915	1.0	2.95	2832	B	B		71	3.5	07
38.0	46	2	2253	1.2	2.47	2744	B	B		68	3.1	08
33.7	52	2	2472	1.0	1.99	2434	B	B		66	2.7	09
26.1	67	1.5	2353	1.0	1.57	2434	B	B		65	2.1	10
23.6	74	1.5	2319	1.0	1.48	2257	B	B		58	1.9	11
18.2	96	1	1833	1.1	1.13	2036	B	B		53	1.5	12

Motor Flanges Available

 B) Supplied with Reduction Bushing

B) Available on Request without reduction bushing

 C) Motor Flange Holes Position

EN Unit Q85 is supplied with synthetic oil, providing "long life" lubrication. For mounting position V5-V6 please contact us.
See table 1 for lubrication and recommended quantity. In table 2 please see possible radial loads and axial loads on the gearbox.
For complete documentation please visit our web site.

LUBRICATION Q85 Oil Quantity 42.23 ounces

AGIP Telium VSF 320

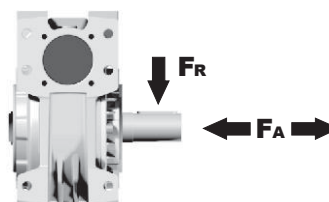
SHELL Omala S4 WE 320

For all details on lubrication and plugs check our website

tab. 1

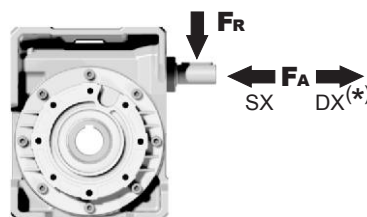
RADIAL AND AXIAL LOADS

Output shaft



n_2 [min ⁻¹]	FA [lb]	FR [lb]
200	112	562
150	130	652
100	135	674
75	157	787
50	180	899
25	225	1124
15	261	1304

Input shaft



n_1 [min ⁻¹]	FA [lb]	FR [lb]
1750	36	182

*Strong axial loads in the DX direction are not allowed.

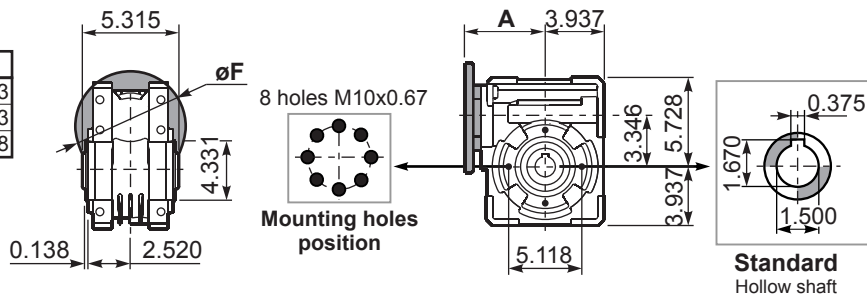
tab. 2

PQ85**FB**...

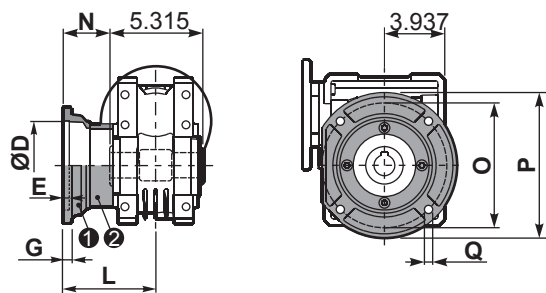
Basic wormbox

Gearbox
weight **41.23 lb**

M. flanges	Kit code	øF	A
56C	KU085.4.041	6.50	4.823
143/5 TC	KU085.4.041	6.50	4.823
182/4 TC	KU085.4.042	8.88	5.528

PQ85**FC**...

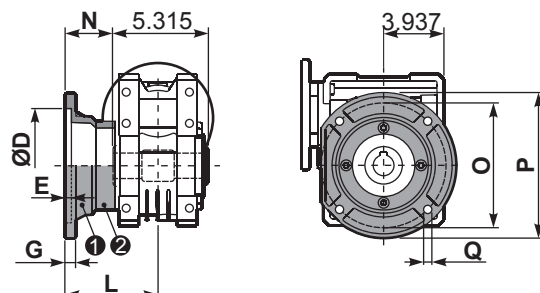
Output flange



type B	øD	E	G	L	N	O	P	Q	kit code
FC	5.9867 5.9843	0.20	0.63	4.252	1.594	6.929	8.071	0.51	① K085.9.010 ② -
FL	5.9867 5.9843	0.20	0.63	5.846	3.189	6.929	8.071	0.51	① K085.9.010 ② K085.0.201

PQ85**F1**...

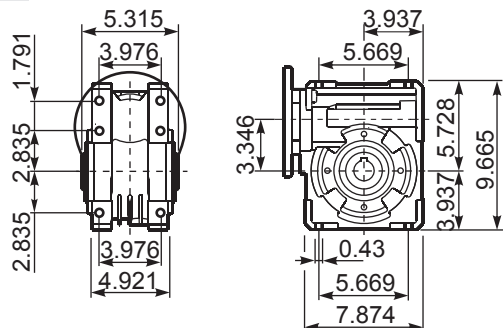
Output flange



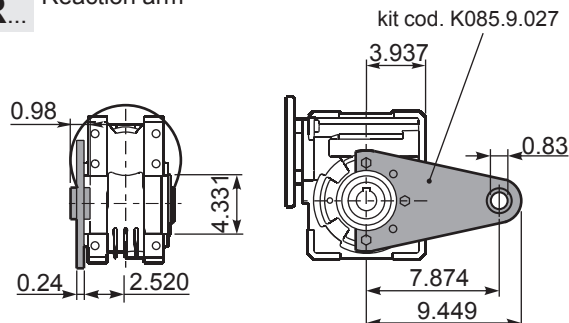
type S	øD	E	G	L	N	O	P	Q	kit code
F1	5.1200 5.1181	0.20	0.51	4.626	1.969	6.496	7.874	0.45	① KS085.9.012 ② -
F2	5.9867 5.9843	0.20	0.59	5.807	3.150	7.087	8.071	0.49	① KS085.9.013 ② -
F4	5.1200 5.1181	0.20	0.51	4.193	1.535	6.496	7.874	0.51	① KS085.9.015 ② -

PQ85**FB**...

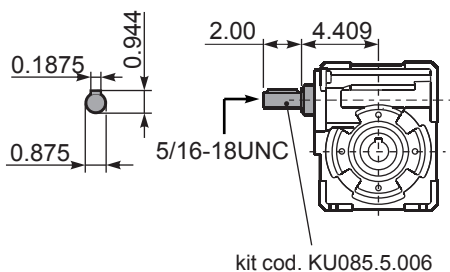
Feet

PQ85**BR**...

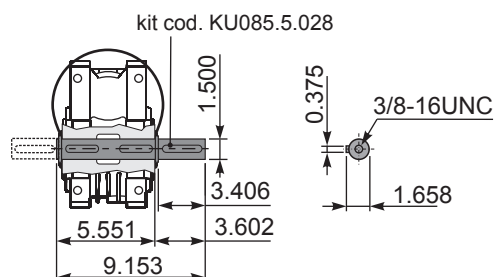
Reaction arm

RQ85**FB**...

Input shaft

PQ85.....**S**...

Single Shaft

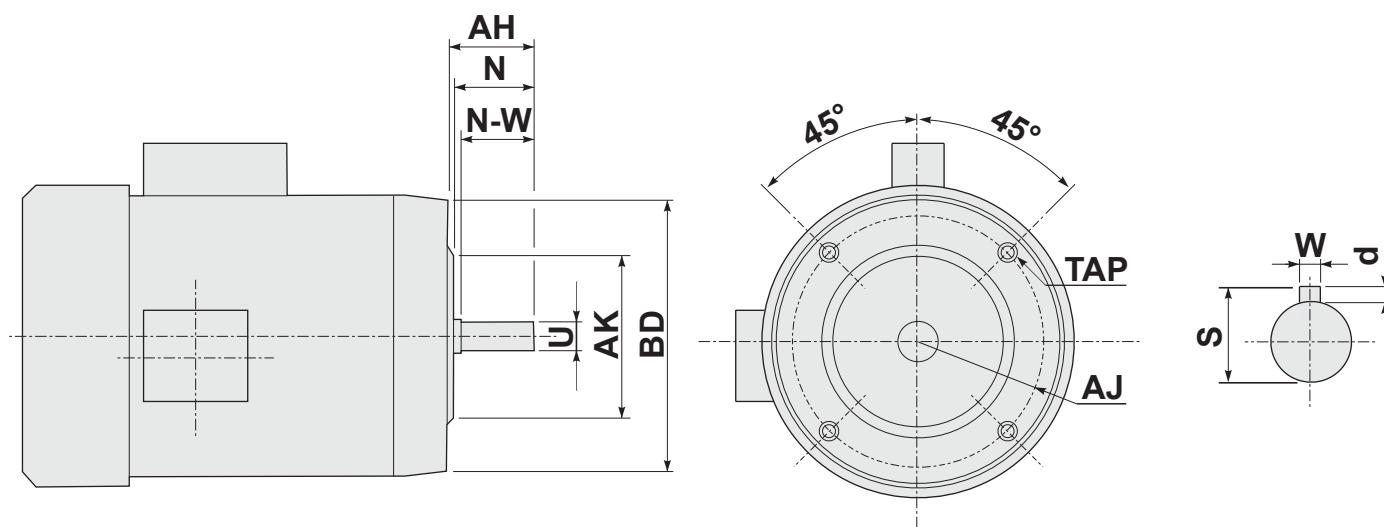
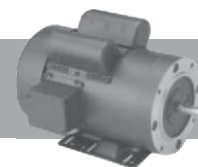


On request : Special Hollow Shafts



On request : Double extended worm shaft





NEMA SHAFT AND
KEYWAY DIMENSIONS

NEMA SHAFT (U)	KEYWAY DIMENSIONS (W x d) (S)	
$\frac{5}{8}$	$\frac{3}{16} \times \frac{3}{32}$	0.709
$\frac{7}{8}$	$\frac{3}{16} \times \frac{3}{32}$	0.964
$1\frac{1}{8}$	$\frac{1}{4} \times \frac{1}{8}$	1.241
$1\frac{3}{8}$	$\frac{5}{16} \times \frac{5}{32}$	1.518
$1\frac{5}{8}$	$\frac{3}{8} \times \frac{3}{16}$	1.796

The condensed dimensions shown on these pages are for general reference only and are not for construction.
Certified drawings of all rating are available for construction purposes.

NEMA DIMENSIONS

Nema Frame	N	U	N-W	AH	AJ	AK	BD	TAP	KEY
S56 56	$1\frac{15}{16}$	$\frac{5}{8}$	$1\frac{7}{8}$	$2\frac{1}{16}$	$5\frac{7}{8}$	$4\frac{1}{2}$	$6\frac{1}{2}$	$\frac{3}{8}$ -16	$\frac{3}{16}$
143T 145T	$2\frac{3}{8}$	$\frac{7}{8}$	$2\frac{1}{4}$	$2\frac{1}{8}$	$5\frac{7}{8}$	$4\frac{1}{2}$	$6\frac{1}{2}$	$\frac{3}{8}$ -16	$\frac{3}{16}$
182T 184T	$2\frac{7}{8}$	$1\frac{1}{8}$	$2\frac{3}{4}$	$2\frac{5}{8}$	$7\frac{1}{4}$	$8\frac{1}{2}$	$8\frac{7}{8}$	$\frac{1}{2}$ -13	$\frac{1}{4}$
213T 215T	$3\frac{1}{8}$	$1\frac{3}{8}$	$3\frac{3}{8}$	$3\frac{3}{8}$	$7\frac{1}{4}$	$8\frac{1}{2}$	10	$\frac{1}{2}$ -13	$\frac{5}{16}$
254T 256T	$3\frac{3}{4}$	$1\frac{5}{8}$	4	4	$7\frac{1}{4}$	$8\frac{1}{2}$	10	$\frac{1}{2}$ -13	$\frac{3}{8}$

IMPORTANT INFORMATION

Please Read Carefully

The following WARNING and CAUTION information is supplied to you for your protection and to provide you with many years of trouble free and safe operation of your product. Read ALL instructions prior to operating reducer. Injury to per-sonnel or reducer failure may be caused by improper installa-tion, maintenance or operation.

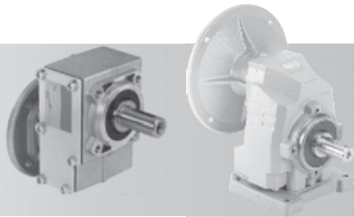
WARNING:

- Written authorization is required to operate or use reducers in man lift or people moving devices.
- Check to make sure that certain applications do not exceed the allowable load capacities published in the current catalog.
- Buyer shall be solely responsible for determining the ade-quacy of the product for any and all uses to which Buyer shall apply the product. The application by Buyer shall not be sub-ject to any implied warranty of fitness for a particular purpose.
- For safety, Buyer or User should provide protective guards over all shaft extensions and any moving apparatus mounted thereon. The User is responsible for checking all applicable safety codes in his area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.
- Gearboxes operating in high position should have a protective shield for any possible parts falling down for casual accidents where people are moving under them.
- Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.
- Make certain that the power supply is disconnected before at-tempting to service or remove any components. Lock out the power supply and tag it to prevent unexpected application power.
- Reducers are not to be considered fail safe or self-locking de-vices. If these features are required, a properly sized, inde-pendent holding device should be utilized. Reducers should not be used as a brake.
- Any brakes that are used in conjunction with a reducer must be sized or positioned in such a way so as to not subject the reducer to loads beyond the catalog rating.
- Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and not other associated attachments or motors.
- Use of an oil with an EP additive on units with backstops may prevent proper operation of the backstop. Injury to personnel, damage to the reducer or other equipment may result.
- Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and or shaft breakage from bending fatigue, it not sized properly.

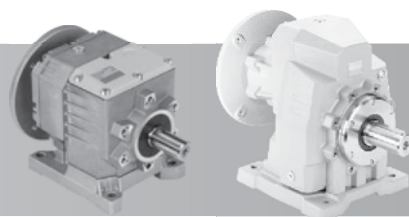
SELLING CONDITIONS

Warranty for manufacturing defects will expire one-year the invoicing date. TVT America will replace or repair defective parts but will not accept any further changes for direct or indirect damages of any kind. The warranty will become null and void if repairs or changes are carried out without our prior written authorization.

Our company will not be responsible for any direct or indirect damages, caused by a wrong use of the products or for not observing the catalogue/web indication



One step gearboxes



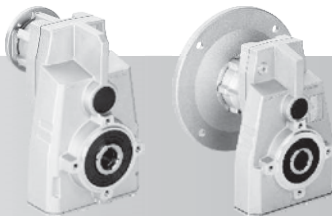
Coaxial gearboxes



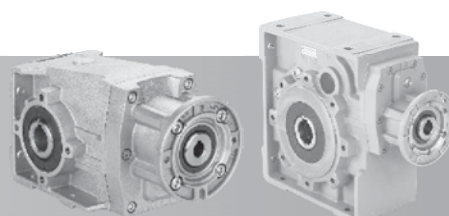
Stainless steel worm gearboxes



Stainless steel one step gearbox



Shaft mounted gearboxes



Helical bevel gearboxes

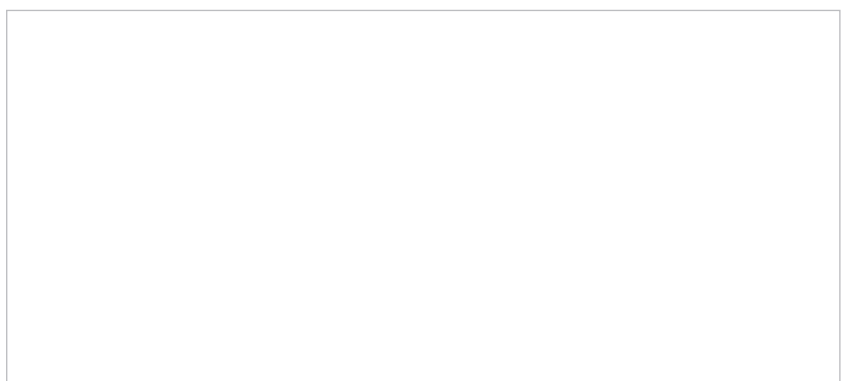
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