- SERIE MRDV -
Riduttori a Vite Senza Fine -
MRDV Series Worm-Gear Speed Reducers
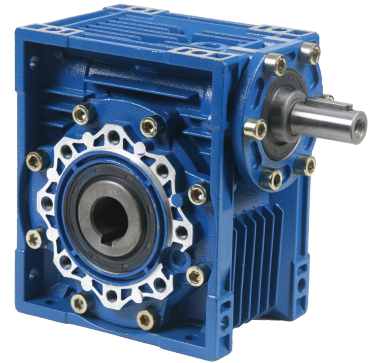
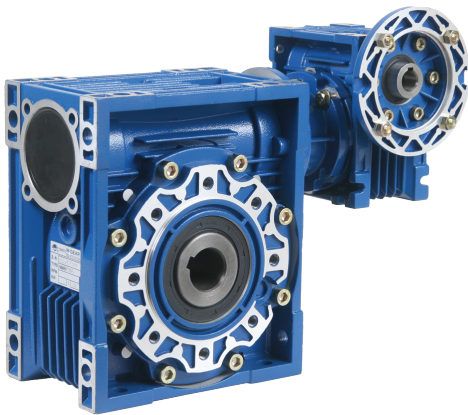# ELLE.GI SRL
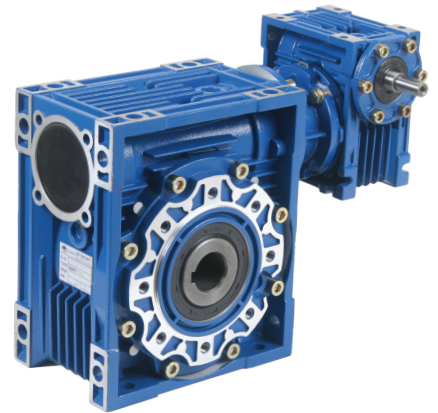# Organi di Trasmissione

MRDV025~130

RDV30~130

MRDV+MRDV...

RDV+MRDV...

PC+MRDV...

CONTENUTO CONTENTS

INTRODUZIONE AI RIDUTTORI VITE SENZA FINE -

BRIEF INTRODUCTION TO WORM-GEAR SPEED REDUCER

La serie MRDV è una nuova generazione di riduttori sviluppata con un perfetto compromesso tra tecnologia e qualità costruttiva. Caratteristiche principali:

1. Carcassa in alluminio pressofusa e verniciata;
2. Ottima coppia in uscita;
3. Riduttore perfettamente rifinito, da basso peso;
4. Carcassa di ottimo aspetto estetico;
5. POssibilità di lavorare in ogni condizione lavorativa.

MRDV series worm-gear speed reducer is a new-generation of product developed by our company on the basis of perfecting WJ series products with a compromise of advanced technology both at home and abroad, its main features are as follows:

1. Made of high-quality aluminum alloy, light in weight and non-rusting.
2. Large in output torque.
3. Smooth in running and low in noise, can work long time in dreadful conditions.
4. High in radiating efficiency.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for omnibearing installation.

CARATTERISTICHE DEI MATERIALI - Main materials

1. Carcasse in alluminio pressofuso dalla (025-090); carcasse in ghisa dalla (110-130);

1. Housing: die-cast aluminum alloy (frame size: 025 to 090); cast iron (frame size : 110 to 130).

VERNICIATURA - Paint

Per la carcassa d'alluminio：
1. Breve getto di uno speciale trattamento antisettico sulla superficie della carcassa;
2. Fosfatazione e verniciatura di RAL5010 blu o argento;
Per la carcassa in ghisa:
Verniciatura con antiruggine e successivamente di RAL5010 blu o argento。

Aluminum alloy housing：

1. Shot blasting and special antiseptic treatment on the aluminum alloy surface.
2. After phosphating, paint with RAL 5010 blue or silvery white paint.

Cast iron housing :

First paint with red antirust paint, then paint with RAL 5010 blue or silvery white paint.
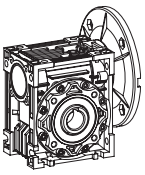
Modello e Marca - Model mark

1.Riduttore (MRDV/RDV)

Worm-gear speed reducer

MRDV 063 - 40 FA 71B5 B3

CODICE DI POSIZIONE - Installation position code

FLANGIA MOTORE - Motor mounting facility

FLANGIA IN USCITA - Flange output, no mark means flangeless output

RAPPORTO DI RIDUZIONE - Speed ratio of worm-gear speed reducer

GRANDEZZA DEL RIDUTTORE - Centre-to-centre spacing of worm-gear speed reducer

CODICE DEL RIDUTTORE MRDV O RDV - Code of worm-gear speed reducer，NMRV mark means Geared Motor,NRV mark means Gear Reducer

2.RIDUTTORI A VITE CON PRECOPPIA (PC-MRDV）

Worm gears with Pre-stage helical unit

PC 071 MRDV 063 - 40 FA B3

CODICE DI POSIZIONE - Installation position code

FLANGIA IN USCITA - Flange output, no mark means flangeless output

RAPPORTO DI RIDUZIONE - Speed ratio of worm-gear speed reducer

GRANDEZZA DEL RIDUTTORE - Centre-to-centre spacing of worm-gear speed reducer

CODICE DEL RIDUTTORE MRDV-RDV - Code of worm-gear speed reducer，NMRV mark means Geared Motor

GRANDEZZA PRECOPPIA - Frame size

PRECOPPIA - Helical Pre-stage unit

In fase d'ordine specificare se il riduttore è completo di motore.
When ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.

3.DOPPIO RIDUTTORE A VITE (MRDV-MRDV/RDV-MRDV）
Combination worm gear units

MRDV 050/110 - 900 FA 71B5 BS2

POSIZIONE DI MONTAGGIO - Installation position code

FLANGIA MOTORE- Motor mounting facility

FLANGIA IN USCITA - Flange output, no mark means flange-less output

RAPPORTO DI RIDUZIONE - Speed ratio of worm-gear speed reducer

GRANDEZZA DEL RIDUTTORE - Centre-to-centre spacing of worm-gear speed reducer

CODICE DEL RIDUTTORE - Code of worm-gear speed reducer , MRDV mark means Geared Motor,RDV mark means Gear Reducer
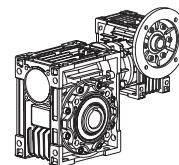
4.VARIATORI+RIDUTTORI (UDL-MRDV）
Combination of speed variator and Worm-gear speed reducer

UD L 0.75 MRDV 063 - 40 FA B3

POSIZIONE DI MONTAGGIO - Installation position code

FLANGIA IN USCITA - Flange output, no mark means flange-less output

RAPPORTO DI RIDUZIONE - Speed ratio of worm-gear speed reducer

GRANDEZZA DEL RIDUTTORE - Centre-to-centre spacing of worm-gear speed reducer

CODICE DEL RIDUTTORE - Code of worm-gear speed reducer

POTENZA DEL MOTORE - Relevant motor power

CARCASSA IN ALLUMINIO - Aluminium alloy housing,and no mark means cast iron casing

CODICE DEL VARIATORE - Code of planetary cone-disk steplees speed variator

In fase d'ordine specificare se il variatore è completo di motore。
When ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.
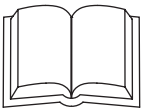
Come selezionare la riduzione di un riduttore -
The way to select worm-gear speed reducer

V-velocità di trasmissione

$n_2 = v/(\pi \times D)$
$i = n_1 / n_2$

$n_1 -$ velocità del motore

rapporto di rid. - i

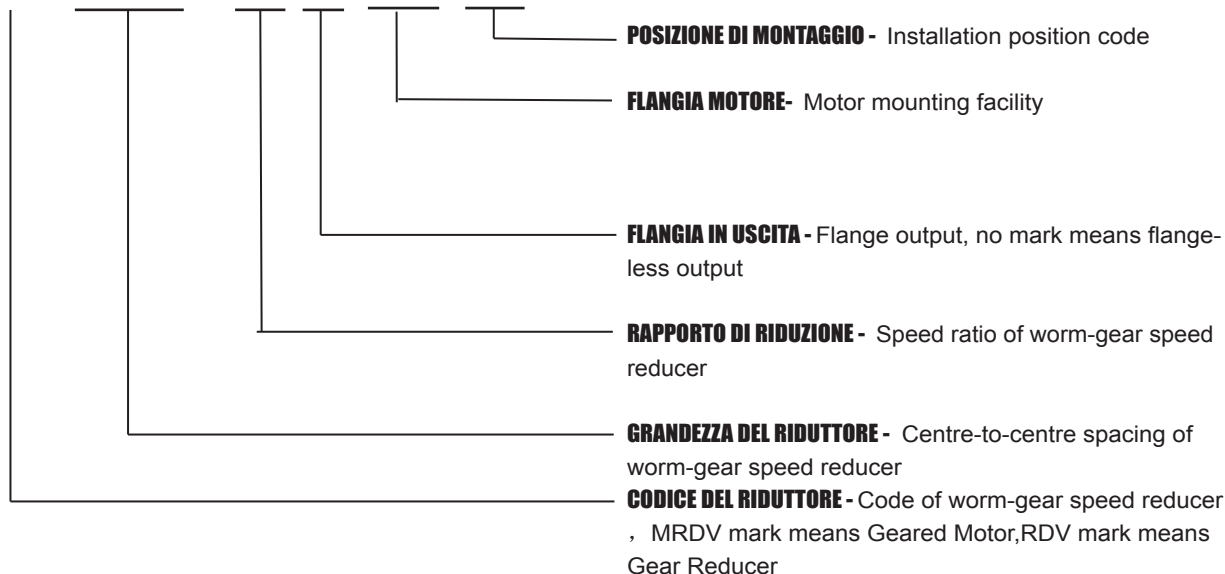$7.5 \leqslant i \leqslant 100$ → MRDV / RDV → **riduzione tipo di motore**

Acc.Diretto → MRDV

Acc.Indiretto → RDV

$75 \leqslant i \leqslant 300$ → PC-MRDV

$300 \leqslant i \leqslant 5000$ → MRDV-MRDV / RDV-MRDV

$10.5 \leqslant i \leqslant 700$ → UDL-MRDV

Considerare che la coppia in uscita del riduttore sia più alta di quella necessaria al movimento

Calcolare la coppia in uscita sull'albero lento M del riduttore $M_2 \geq M \times f_z$

M

v

transmission speed V

$n_2 = v/(\pi \times D)$
$i = n_1 / n_2$

n_1 is motor rev

transmission speed ratio i

$7.5 \leqslant i \leqslant 100$ → MRDV or RDV → **reducer motor mode**

motor shaft input → MRDV

motor hole input → RDV

$75 \leqslant i \leqslant 300$ → PC-MRDV

$300 \leqslant i \leqslant 5000$ → MRDV-MRDV / RDV-MRDV

$10.5 \leqslant i \leqslant 700$ → UDL-MRDV

The reducer's power that output torque is bigger than M_2 is selected on consulting the numerical value of M_2 n_2、i in the sheet of performance parameter at first.

Calculate torque on the shaft M, the output torque of the reducer: $M_2 \geq M \times f_z$

Fattore si servizio - Service factor

Il fattore di servizio dipende dalle condizioni in cui opera il riduttore.
I parametri che influiscono sulla scelta del riduttore somo:
- **Tipo di carico della macchina**: Ⅰ – Ⅱ – Ⅲ
- **Durata giornaliera (ore)**
- **Frequenza degli avviamenti**

Tipo di carico:	Ⅰ	UNIFORME	fa ≤ 0.3
	Ⅱ	SOVRACCARICO MODERATO	fa ≤ 3
	Ⅲ	FORTI SOVRACCARICHI	fa ≤ 10

- **Je(kgm^2) Momento di inerzia esterno sull'albero guida**
- **Jm(kgm^2) Momento di inerzia del motore**
- **Se fa>10, contattare il nostro ufficio tecnico**
- Ⅰ **Alimentatori e linee per carichi leggeri**
- Ⅱ **Ascensori, trasportatori pesanti, macchine tessili, porte scorrevoli, gru**
- Ⅲ **Trituratori, macchine cartotecnica, macchine per il marmo。**

The service factor (fs) depends on the operating conditions the reduction unit is subjected to.
The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:
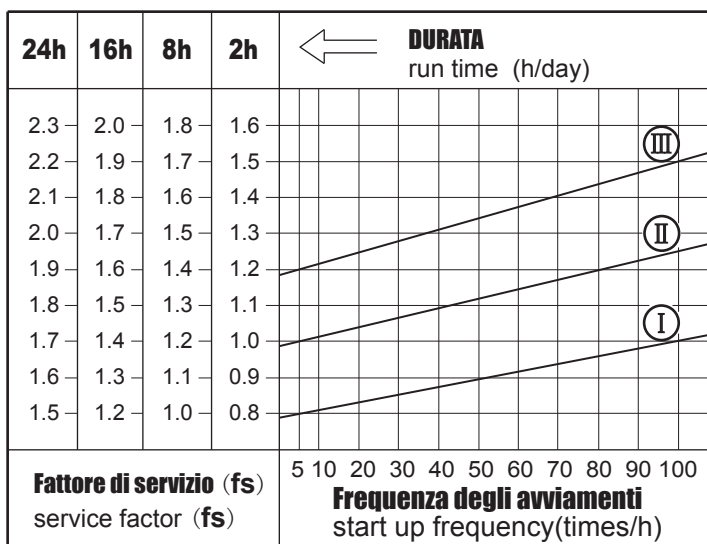- type of load of the operated machine : Ⅰ – Ⅱ – Ⅲ
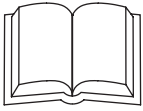- length of daily operating time: hours/day
- start-up frequency: times/hour

TYPE OF LOAD:	Ⅰ	uniform , permitted mass acceleration factor	fa ≤ 0.3
	Ⅱ	moderate shocks, permitted mass acceleration factor	fa ≤ 3
	Ⅲ	heavy shocks, permitted mass acceleration factor	fa ≤ 10

fa = Je/Jm

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

Ⅰ Screw feeders for light materials, turbo-fans, assembly lines for light materials, conveyor belts for light materials, mixers (liquid), packing machines.

Ⅱ Goods lifts, conveyor belts for heavy materials, weave machines, sliding doors, concrete mixers, crane mechanisms.

Ⅲ Barkers, crush machines, grinding lathes, punches, produce paper machines, stone and porcelain clay machining machines

24h	16h	8h	2h	⟸	DURATA run time (h/day)
2.3	2.0	1.8	1.6		
2.2	1.9	1.7	1.5		Ⅲ
2.1	1.8	1.6	1.4		
2.0	1.7	1.5	1.3		Ⅱ
1.9	1.6	1.4	1.2		
1.8	1.5	1.3	1.1		Ⅰ
1.7	1.4	1.2	1.0		
1.6	1.3	1.1	0.9		
1.5	1.2	1.0	0.8		5 10 20 30 40 50 60 70 80 90 100
Fattore di servizio (fs) service factor (fs)					**Frequenza degli avviamenti** start up frequency(times/h)

Il fattore di servizio fs deve essere modificato in questo modo：
1. Temperatura ambiente tra 30 ~ 40□：fs ×(1.1~1.2)
2. Temperatura ambiente tra 40 ~ 50□：fs ×(1.3~1.4)
3. Temperatura ambiente tra 50 ~ 60□：fs ×(1.5~1.6)
4. Temperatura ambiente >60□， contattare il ns. ufficio tecnico

Service factor fs should be adjusted as followings:
1. ambient temperature is 30 ~ 40℃：fs ×(1.1~1.2)
2. ambient temperature is 40 ~ 50℃：fs ×(1.3~1.4)
3. ambient temperature is 50 ~ 60℃：fs ×(1.5~1.6)
4. ambient temperature >60℃, please call our Technical Service.

Carico radiale ammissibile sull'albero - The admissible radial load on the shaft

Il carico radiale sull'albero è calcolato nel seguente modo:

$$Fre = \frac{2000 \cdot M \cdot fz}{D} \leqslant Fr1 \cdot Fr2$$

Fre (N)	**risultato del carico radiale**
M (Nm)	**coppia sull'albero**
D (mm)	**diametro dell'oggetto montato sull'albero**
Fr (N)	**carico radiale ammesso (vedi tabelle)**
fz = 1.15	**pignone**
1.4	**ruota della catena**
1.75	**tiro cinghia**
2.5	**tiro piattello**

Quando il carico non è in centro all'albero è necessario ricalcolarlo con la seguente formula

$$Fre \leqslant \frac{Fr \cdot a}{(b+x)} \leqslant Fr1max \cdot Fr2max$$

a = costante della vite
b = costante della vite
x = distanza del punto di applicazione del carico (mm)

a，b，x sono dati dalla tabella che segue

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

$$Fre = \frac{2000 \cdot M \cdot fz}{D} \leqslant Fr1 \cdot Fr2$$

|	
Fre (N)	Resulting radial load
M (Nm)	Torque on the shaft
D (mm)	Diameter of the transmission member mounted on the shaft
Fr (N)	The admitted radial load force (see relative tables)
fz = 1.15	gear pinion
1.4	chain wheel
1.75	v-pulley
2.5	flat pulley

When the resulting radial load is not applied on the centre line of the shaft, it is necessary to calculate the effective load with the following formula:
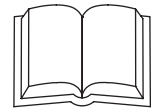
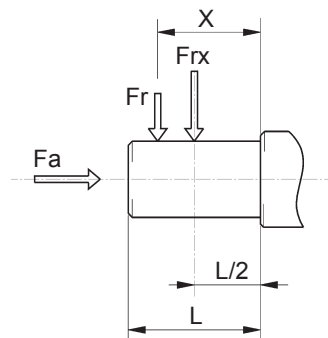$$Fre \leqslant \frac{Fr \cdot a}{(b+x)} \leqslant Fr1max \cdot Fr2max$$

a = worm casing constant
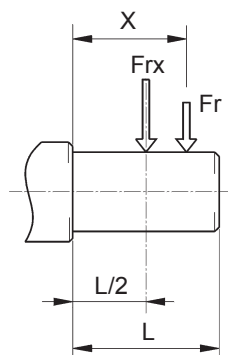b = worm casing constant
x = distance of load from shaft shoulder(mm)

The values of a , b , x are given in the following tables

Albero in uscita -   Output shafts

MRDV	025	030	040	050	063	075	090	110	130
a	50	65	84	101	120	131	162	176	188
b	38	50	64	76	95	101	122	136	148
Fr2 max	1350	1830	3490	4840	6270	7380	8180	12000	13500

Albero in entrata -   Input shafts

RDV	030	040	050	063	075	090	110	130
a	86	106	129	159	192	227	266	314
b	76	94,5	114	139	167	202	236	274
Fr1 max	210	350	490	700	980	1270	1700	2100

I valori dei carichi radiali ammissibili sono dati dalle pagine relative alle prestazioni Fr1, Fr2
The values of the admissible radial loads are given on the pages relating to performance (Fr1, Fr2)
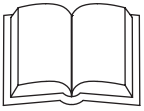
RENDIMENTO -   EFFICIENCY

Il rendimento è un parametro importante del riduttore. Lo determina l'attrito radente e volvente degli ingranaggi La tabella di pagina 9 mostra i valori del rendimento.

Efficiency is an important parameter of reducer ,and lies on the design and friction of the worm and worm wheels drive units.

The mesh data table on page 9 shows dynamic efficiency (n_1=1400) and static efficiency values.

IRREVERSIBILITA' DINAMICA -   DYNAMIC IRREVERSIBILITY

L'irreversibilità dinamica si verifica al momento dello stop del riduttore. La condizione teorica perchè si verifichi questa situazione è η_d < 0.4（vedi tabella a pag. 9）

Dynamic irreversibility is achieved when the output shaft stops instantly when drive is no longer transmitted through the worm shaft. This condition requires a dynamic efficiency of **η_d < 0.4** (see table on page 9).

IRREVERSIBILITA' STATICA -   STATIC IRREVERSIBILITY

L'irreversibilità statica si verifica quando non è possibile far ruotare il riduttore dal lato albero lento. La condizione teorica perchè si verifichi questa situazione è η_s < 0.5（vedi tabella a pag. 9）

Static irreversibility is achieved when with the gear reducer at a standstill, the application of a load to the output shaft can't drive the worm shaft. This condition requires a static efficiency of **η_s < 0.5** (see table on page 9).

η_d	IRREVERSIBILITA' DINAMICA	DYNAMIC IRREVERSIBILITY
>0.6	REVERSIBILITA' DINAMICA	dynamic reversibility
0.5～0.6	BASSA REVERSIBILITA' DINAMICA	low dynamic reversibility
0.4～0.5	BUONA IRREVERSIBILITA' DINAMICA	good dynamic irreversiblity
<0.4	IRREVERSIBILITA' DINAMICA	dynamic irreversibility

| η_s	IRREVERSIBILITA' STATICA	STATIC IRREVERSIBILITY
>0.55	REVERSIBILITA' STATICA	Static reversibility
0.5～0.55	BASSA REVERSIBILITA' STATICA	low static reversibility
<0.5	IRREVERSIBILITA' STATICA	static irreversibility

Le tabelle mostrano la classe di irreversibilità. Urti e vibrazioni influiscono sull'irreversibilità del riduttore.

The table shows approximate irreversibility classes. Vibrations and shocks can affect a gear reducer's irreversibility.
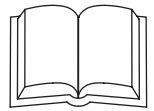
PARAMETRI Mesh parameter

	i	7.5	10	15	20	25	30	40	50	60	80	100
MRDV025	Z_1	4	3	2	2	2	1	1	1	1		
	M_n	1.3	1.3	1.3	0.995	0.8	1.3	0.995	0.8	0.67		
	γ	25°18'	19°31'	13°18'	11°02'	9°05'	6°44'	5°34'	4°34'	3°55'		
	$\eta_d(1400)$	0.85	0.83	0.79	0.75	0.71	0.67	0.62	0.58	0.55		
	η_s	0.71	0.68	0.61	0.56	0.5	0.46	0.41	0.36	0.34		
MRDV030	Z_1	4	3	2	2	1	1	1	1	1	1	
	M_n	1.44	1.44	1.44	1.1	1.7	1.44	1.1	0.89	0.74	0.56	
	γ	18°55'	14°25'	9°44'	7°50'	5°33'	4°54'	3°55'	3°17'	2°43'	2°07'	
	$\eta_d(1400)$	0.85	0.82	0.77	0.73	0.68	0.65	0.59	0.55	0.51	0.44	
	η_s	0.67	0.63	0.55	0.5	0.43	0.39	0.35	0.31	0.27	0.23	
MRDV040	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	2.05	2.05	2.05	1.56	1.27	2.05	1.56	1.27	1.06	0.8	0.65
	γ	23°54'	18°23'	12°30'	10°03'	8°45'	6°19'	5°04'	4°24'	3°42'	2°52'	2°29'
	$\eta_d(1400)$	0.87	0.85	0.82	0.78	0.75	0.7	0.65	0.62	0.58	0.52	0.47
	η_s	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.32	0.28	0.24
MRDV050	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	2.56	2.56	2.56	1.95	1.58	2.56	1.95	1.58	1.32	1	0.8
	γ	23°49'	18°19'	12°27'	10°03'	8°33'	6°18'	5°04'	4°18'	3°38'	2°52'	2°17'
	$\eta_d(1400)$	0.88	0.86	0.82	0.79	0.76	0.72	0.67	0.63	0.59	0.53	0.49
	η_s	0.7	0.66	0.59	0.55	0.51	0.44	0.39	0.35	0.32	0.27	0.23
MRDV063	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	3.25	3.25	3.25	2.48	2	3.25	2.48	2	1.68	1.27	1.02
	γ	24°31'	18°53'	12°51'	10°29'	8°45'	6°30'	5°17'	4°24'	3°49'	2°59'	2°26'
	$\eta_d(1400)$	0.88	0.87	0.83	0.81	0.78	0.74	0.7	0.66	0.62	0.57	0.51
	η_s	0.71	0.67	0.6	0.55	0.51	0.45	0.4	0.36	0.33	0.28	0.24
MRDV075	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	3.95	3.95	3.95	3	2.42	3.95	3	2.42	2.03	1.54	1.24
	γ	26°38'	20°37'	14°05'	11°19'	9°29'	7°09'	5°43'	4°46'	4°01'	3°17'	2°44'
	$\eta_d(1400)$	0.89	0.88	0.85	0.82	0.8	0.76	0.72	0.69	0.65	0.6	0.55
	η_s	0.71	0.68	0.61	0.57	0.53	0.46	0.42	0.38	0.35	0.29	0.26
MRDV090	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	4.84	4.84	4.84	3.69	2.98	4.84	3.69	2.98	2.5	1.89	1.52
	γ	29°05'	22°39'	15°33'	12°50'	10°53'	7°55'	6°30'	5°29'	4°46'	3°45'	3°06'
	$\eta_d(1400)$	0.9	0.89	0.86	0.84	0.82	0.78	0.75	0.72	0.69	0.63	0.59
	η_s	0.73	0.7	0.64	0.6	0.56	0.49	0.45	0.41	0.38	0.32	0.28
MRDV110	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	5,875	5,875	5,875	4.62	3.73	5,875	4.62	3.73	3.13	2.37	1.91
	γ	28°15'	21°57'	15°02'	14°42'	12°33'	7°39'	7°29'	6°21'	5°33'	4°27'	3°46'
	$\eta_d(1400)$	0.9	0.89	0.86	0.85	0.84	0.79	0.78	0.75	0.72	0.67	0.63
	η_s	0.72	0.69	0.63	0.62	0.59	0.48	0.48	0.44	0.41	0.36	0.32
MRDV130	Z_1	4	3	2	2	2	1	1	1	1	1	1
	M_n	6.97	6.97	6.97	5.4	4.37	6.97	5.4	4.37	3.67	2.77	2.23
	γ	28°43'	22°20'	15°19'	13°47'	11°54'	7°48'	7°00'	6°01'	5°16'	4°07'	3°27'
	$\eta_d(1400)$	0.91	0.89	0.87	0.86	0.84	0.8	0.78	0.75	0.72	0.68	0.64
	η_s	0.72	0.69	0.63	0.61	0.58	0.49	0.46	0.43	0.39	0.34	0.3
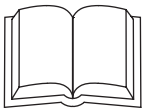
Rendimento dei variatori di velocità - The efficiency of speed variator
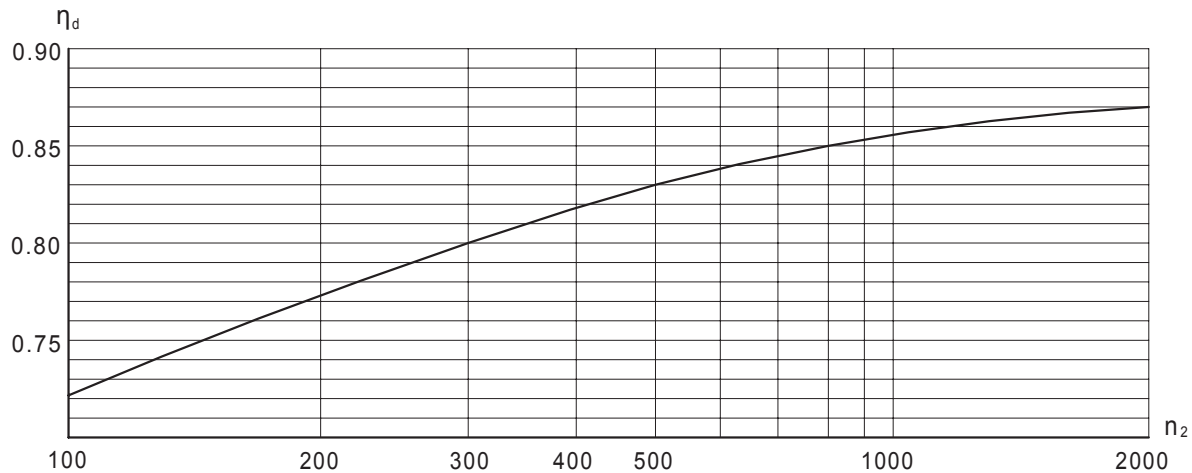
La curva di rendimento di ogni tipo di variatore è la stessa

The efficiency curve for each type of the variator isn't the same, but its trend rules are about the same.

LUBRIFICAZIONE - Lubrication

Nei casi di temperature ambiente non segnate in tabella, contattare il nostro ufficio tecnico
- **Nel caso di temperature sotto i -30°C e sopra i 60°C è necessario usare oli speciali**
- **Per operatività sotto gli 0°C sono necessarie le seguenti considerazioni:**
  - → **i motori sono adatti a lavorare alla temperatura ambiente**
  - → **la potenza dei motori elettrici deve essere adeguata alla coppia più alta richiesta**
  - → **in caso di riduttori con carcassa in ghisa, fare attenzione alla temperatura d'esercizio sotto i 15°C.**

In cases of ambient temperatures not envisaged in the table, call our Technical Service.
- In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special material.
- For operating ranges with temperatures under 0°C it is necessary to consider the following:
  - → The motors need to be suitable for operation at the envisaged ambient temperature.
  - → The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
  - → In the case of reduction units with a cast-iron case, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.
  - → During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

L'olio deve essere sostituito dopo 10.000 ore di funzionamento.
- **I riduttori grandezza 25,30,40,50,63,75 e 90 sono già lubrificati con olio a vita e possono essere montati in qualsiasi posizione. Per le posizioni V5/V6 occorre contattare il nostro ufficio tecnico.**
- **I riduttori grandezze 110 e 130 sono completi di lubrificante olio minerale Shell Tivela OIL 320.**
- **I variatori di velocità sono già lubrificati con olio minerale.**
- **Per le grandezze 110 e 130 è necessario specificare la posizione di montaggio. Normalmente sono riempiti con quantità d'olio della posizione in B3.**
- **I riduttori 110 e 130 hanno i tappi di carico livello e sfiato**
- **Le precoppie PC sono già lubrificate con olio a vita Shell Tivela OIL 320 e possono essere montate in tutte le posizioni.**
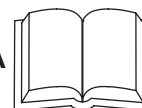
The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works.

- ○ The reduction units size 025-030-040-050-063-075-090 are supplied complete with lubricant for life, synthetic oil, SHELL TEVELA OIL 320，and can therefore be mounted in any position envisaged in the catalogue. V5/V6 for which you should call our Technical Service to assess the conditions of use.
- ○ The reduction units size 110 and 130 are supplied complete with lubricant, mineral oil, SHELL TEVELA OIL 320
- ○ The variator speed are supplied complete with lubricant, mineral oil.
- ○ For sizes 110 and 130 it is necessary to specify the position, otherwise the reduction units are supplied with the quantity of oil relating to pos. B3.
- ○ Only reduction units 110 and 130 are fitted with breather, level and oil drainage plugs. It is necessary, after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.
- ○ PC is supplied complete with life-long lubricant, synthetic oil, SHELL TEVELA OIL 320, and can therefore be mounted in all the positions. Lubrication is separated from that of the worm reduction unit.

Specifiche dei lubrificanti   Specifications of lubricants

	℃ -50 0 +50 +100	ISO	SHELL	AGIP	ESSO	MOBIL	CASTROL	BP	GMERI	
MRDV025~090 PC063~090	−25 +50	VG320	Tivela OIL S320	Telium VSF320	S220	Glygoyle 30	Alphasyn PG320	Energol SG-XP320	WA460	Synthetic oil
MRDV110~130	−5 +40	VG460	Omala OIL460	Blasia 460	Spartan EP460	Mobilgear 634	Alpha MAX 460	Energol GR-XP460	WA460	Mineral oil
	−15 +25	VG220	Omala OIL220	Blasia 220	Spartan EP220	Mobilgear 630	Alpha MAX 220	Energol GR-XP220	WA460	
PC	−15 +50	VG320	Tivela OIL S320	Telium VSF320	S220	Glygoyle 30	Alphasyn PG320	Energol SG-XP320	CKC150	Synthetic oil
UDL	−25 +40	VG32	A.T.F.DXRON	A.T.F.DXRON	A.T.F.DXRON	A.T.F.220	TQ.DXRON II	Autran DX	Ub3	Mineral oil

QUANTITA' OLIO IN LITRI Quantity of oil in litres   (L)

MRDV	025	030	040	050	063	075	090	110	130	PC	63	71	80	90
B3								3	4.5					
B8								2.2	3.3					
B6-B7	0.023	0.05	0.1	0.15	0.3	0.5	1	2.5	3.5		0.05	0.07	0.15	0.16
V5								3	4.5					
V6								2.2	3.3					

UDL	UDL0.18		UDL0.37		UDL0.55		UDL0.75		UD1.1		UD1.5		UD2.2	UD3.0	UD4.0
B3															
B8	0.13		0.15		0.33		0.33		0.8		0.8		1.2	1.2	1.2
B6-B7															
V5	0.3		0.4		0.85		0.85		1.4		1.4		2.15	2.15	2.15
V6	0.2		0.25		0.45		0.45		1		1		1.2	1.2	1.2
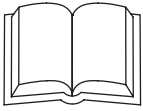
INSTALLAZIONE - Installation

Per installare un riduttore consigliamo le seguenti note：
1. Il montaggio del riduttore deve essere stabile per evitare vibrazioni；
2. Controllare la corretta direzione di rotazione dell'albero lento del riduttore；
3. In caso di periodi di immagazzinaggio lunghi (3/4 mesi) se l'anello di tenuta non è immerso nell'olio, è raccomandabile sostituirlo.
4. Se possibile proteggere il riduttore dai raggi solari
5. Assicurarsi che il motore sia raffreddato correttamente con un buon passaggio d'aria
6. In caso di tenperature ambiente minori di 5°C o superiori a 40°C chiamare il nostro ufficio tecnico
7. La varniciatura non deve coprire parti in plastica
8. Alla partenza al riduttore non dovrebbe essere applicato il carico massimo

To install the reduction unit it is necessary to note the following recommendations:
1. The mounting on the machine must be stable to avoid any vibration.
2. Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
3. In the case of particularly lengthy periods of storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
4. Whenever possible, protect the reduction unit against solar radiation and bad weather.
5. Ensure the motor cools correctly by assuring good passage of air from the fan side.
6. In the case of ambient temperatures < -5°C or > +40°C call the Technical Service.
7. Painting must definitely not go over rubber parts, if any.
8. Starting must take place gradually, without immediately applying the maximum load.

Applicazioni Critiche - Critical applications

Le prestazioni date nel catalogo corrispondono al montaggio B3. Per altre posizioni di montaggio o particolari velocità in ingresso, riferirsi alle tabelle per le applicazioni critiche. E' necessario contattare il nostro ufficio tecnico nel caso delle seguenti applicazioni:
1. Incremento di velocità；
2. Uso in applicazioni pericolose per le persone nel caso il riduttore si guasti；
3. Applicazione con particolare inerzia；
4. Uso con forti sollevamenti；
5. Applicazioni con alta dinamica；
6. Applicazioni con temperature sotto i - 5°C e sopra i 40°C；
7. Uso in ambienti chimici aggressivi；
8. Uso in ambienti salini；
9. Montaggio in posizioni non descritte a catalogo；
10. Uso in ambienti radioattivi；
11. Uso in ambienti con particolari pressioni atmosferiche；
12. Evitare applicazioni in cui il riduttore è parzialmente immerso in liquidi；
13. Il carico applicato al riduttore non deve essere superiore a quello che il riduttore stesso deve sopportare.
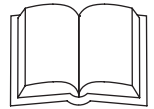
The performance given in the catalogue correspond to mounting position B3 or similar, when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that highlight different critical situations for each size of reduction unit. It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service:

1. As a speed increasing.
2. Use in services that could be hazardous for people if the reduction unit fails.
3. Applications with especially high inertia.
4. Use as a lifting winch.
5. Applications with high dynamic strain on the case of the reduction unit.
6. In places with T° under -5°C or over 40°C.
7. Use in chemically aggressive environments.
8. Use in a salty environment.
9. Mounting positions not envisaged in the catalogue.
10. Use in radioactive environments.
11. Use in environments pressures other than atmospheric pressure.
12. Avoid applications where even partial immersion of the reduction unit is required.
13. The maximum torque that the gear reducer can support must not exceed two times the nominal torque (fs =1) stated in the performance tables.

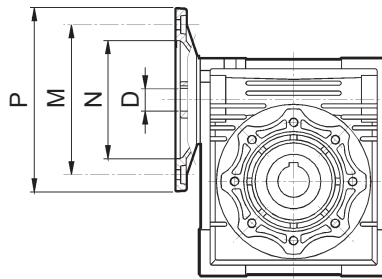| MRDV	025	030	040	050	063	075	090	110	130
V5: 1500< n1<3000	-	-	-	-	-	B	B	B	B
n1>3000	B	B	B	B	B	A	A	A	A
V6	B	B	B	B	B	B	B	B	B
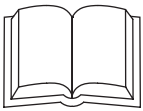
PREDISPOSIZIONI - Predisposition

(*) Per un ingresso con motore speciale contattare il nostro ufficio tecnico

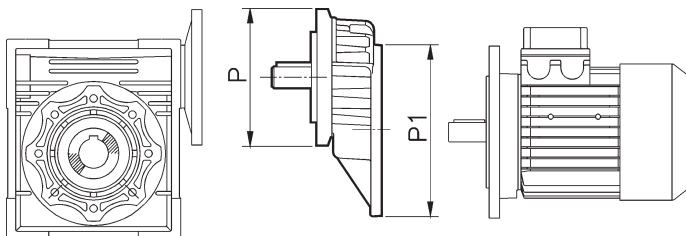(*) If you want special key , please call our Technical Service

MRDV	PAM IEC	N	M	P	D										
					7.5	10	15	20	25	30	40	50	60	80	100
025	56B14	50	65	80	9	9	9	9		9	9	9	9		
030	63B5	95	115	140	11	11	11	11	11	11	11	11			
	63B14	60	75	90											
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	
	56B14	50	65	80											
040	71B5	110	130	160	14	14	14	14	14	14	14				
	71B14	70	85	105											
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90											
	56B5	80	100	120								9	9	9	9
050	80B5	130	165	200	19	19	19	19	19	19					
	80B14	80	100	120											
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	
	71B14	70	85	105											
	63B5	95	115	140							11	11	11	11	11
063	90B5	130	165	200	24	24	24	24	24	24					
	90B14	95	115	140											
	80B5	130	165	200	19	19	19	19	19	19	19	19	19		
	80B14	80	100	120											
	71B5	110	130	160							14	14	14	14	14
	71B14	70	85	105											
075	100/112B5	180	215	250	28	28	28								
	100/112B14	110	130	160											
	90B5	130	165	200	24	24	24	24	24	24	24				
	90B14	95	115	140											
	80B5	130	165	200			19	19	19	19	19	19	19	19	19
	80B14	80	100	120											
	71B5	110	130	160							14	14	14	14	14
090	100/112B5	180	215	250	28	28	28	28	28	28					
	100/112B14	110	130	160											
	90B5	130	165	200	24	24	24	24	24	24	24	24	24		
	90B14	95	115	140											
	80B5	130	165	200							19	19	19	19	19
	80B14	80	100	120											
110	132B5	230	265	300	38*	38*	38*	38*							
	100/112B5	180	215	250	28	28	28	28	28	28	28	28	28		
	90B5	130	165	200					24	24	24	24	24	24	24
	80B5	130	165	200										19	19
130	132B5	230	265	300	38*	38*	38*	38*	38*	38*	38*				
	100/112B5	180	215	250					28	28	28	28	28	28	28
	90B5	130	165	200										24	24
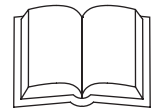
PC+MRDV   PC+MRDV Combinations

MRDV	i	PC 063		PC 071		PC 080			PC 090		
		105 / 11 i = 3	105 / 14 i = 3	120 / 14 i = 3	120 / 19 i = 3	160 / 19 i = 3	160 / 24 i = 3	160 / 28 i = 3	160 / 19 i = 2.42	160 / 24 i = 2.42	160 / 28 i = 2.42
040	25	■	■								
	30	■	■								
	40	■	■								
	50	■									
	60	■									
	80	■									
	100	■									
050	25		■	■							
	30		■	■							
	40	■	■	■							
	50	■	■								
	60	■	■								
	80	■	■								
	100	■	■								
063	25				■						
	30										
	40		■	■							
	50		■	■							
	60		■	■							
	80		■	■							
	100		■	■							
075	25				■	■	■		■	■	
	30				■	■	■		■	■	
	40				■	■	■		■	■	
	50			■	■	■	■		■	■	
	60			■	■				■		
	80			■	■				■		
	100			■	■				■		
090	25						■	■		■	■
	30						■	■		■	■
	40					■	■		■	■	
	50					■	■		■	■	
	60					■	■		■	■	
	80					■	■		■	■	
	100					■	■		■	■	
110	25						■	■		■	■
	30						■	■		■	■
	40						■	■	■	■	■
	50						■	■	■	■	■
	60						■	■	■		■
	80					■	■		■		
	100					■	■		■		
130	25							■			■
	30							■			■
	40							■	■		■
	50							■	■		■
	60							■	■		■
	80						■		■	■	
	100						■		■	■	

(*) MODELLO NON STANDARD
(*) Nonstandard model

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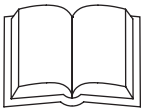
Caratteristiche della precoppia（PC） Design features (PC)

La precoppia è modulare e può essere montata su qualsiasi riduttore PAM. Le prestazioni vanno considerate

con riduttore accoppiato alla precoppia.

The PC construction is modular and therefore it can be as a separate unit mounted on any type of

fitted geared motor (PAM)，whose the various possibilities of flange/output shafts can be found on page 15. Fitting the pre-stage helical module on the main reduction unit is easily done as for any motor of type B14.The prestage unit cannot be used by itself, but only coupled with another reduction unit.

Materiali - Materials

Carcassa in pressofusione d'alluminio.
Ingranaggi in 20CrMo

Case in aluminium alloy.
Gears : 20CrMo, machined accurately base on the accurate involute.

Accoppiamento ai motori elettrici - Coupling to electric motor

Per il corretto montaggio del pignone sull'albero del motore, seguire le seguenti istruzioni:
a) Pulire l'albero del motore elettrico;
b) Rimuovere la chiavetta dell'albero del motore；
c) Montare la boccola (1) sull'albero del motore secondo l'orientamento indicato dallo schema. Per semplicità di montaggio si può scaldare la boccola a 70/80°C;
d) Montare la nuova chiavetta data in dotazione (3)；
e) Montare il pignone (4) con le stesse precauzioni del punto c；
f) Montare la rondella (5) e chiuderla tramite la vite (6) ；
g) Tagliare il tappo di chiusura in gomma；
h) Montare l'anello di tenuta (2) e il gruppo motore.
N.B.: Per un buon funzionamento si consiglia di usare motori di buona qualità.

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

N.B. For correct operation, with no vibration or noise, it is recommended to use good quality motors.
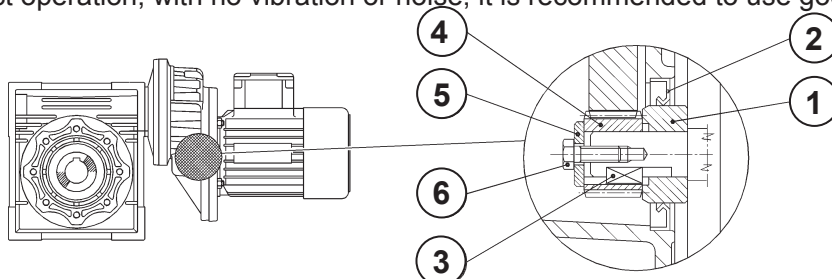
Posizioni di montaggio - Mounting positions

MRDV - RDV			
MRDV...U - B3	**B6**	**V5**	**V6**
1	1	1	1
B8	**B7**		
1	1		

PC - MRDV			
MRDV...U - B3	**B6**	**V5**	**V6**
1	1	1	1
B8	**B7**		
1	1		

La versione "U" è relativa alla grandezza 25 sino alla 75. Per le altre grandezze non è necessario specificare la posizione di montaggio.
- **Per le posizioni verticali vedere tabella a pagina 13;**
- **Se non è specificata la posizione di montaggio verrà considerata quella standard in B3;**
- **Per altre posizioni consultare il nostro ufficio tecnico.**

"**U**" version is related to sizes from 025 to 075. For these sizes it is not necessary to specify mounting position.
- For vertical positions, please refer to the table on page 13.
- Unless specified otherwise, the standard positions are B3.
- For positions not envisaged, it is necessary to call our Technical Service.
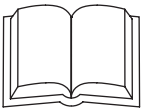
MRDV-MRDV / RDV-MRDV

AS1	AS2	VS1	VS2
3	**3**	**1**	**1**

PS1	PS2	BS1	BS2
1	**1**	**3**	**3**

Nel caso non venga specificata la posizione di montaggio, viene considerata standard quella in BS2.

The position of the 1st reducer with respect to the 2nd gear reducer depends on the versions. Unless specified at the time of order, combination groups will be supplied in version BS2. The specified mounting position refers to the 2nd gear reducer, see page 17 for the possible mounting positions.

UDL-MRDV

MRDV…U-B3	B6	V5	V6
1		**1**	**1**

B8	B7		
1	**1**		
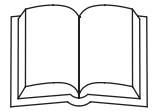
FLANGE F-FL - Flange F-FL

D	S
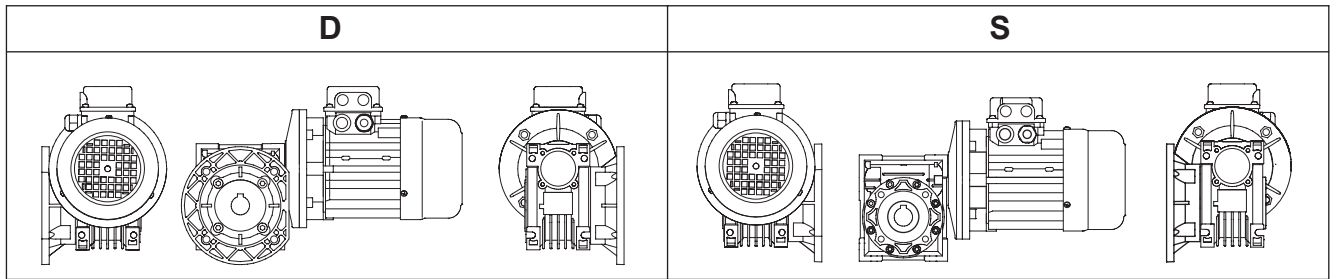
Se non viene specificata, la posizione della flangia sarà in esecuzione D

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

Posizione della morsettiera - Pos. of terminal box
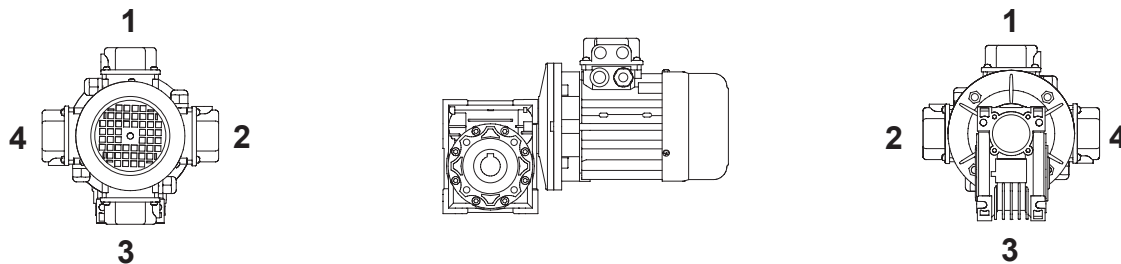
In fase d'ordine specificare la posizione della scatola morsetiera come indicato in figura.

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

Senso di rotazione - Direction of rotation
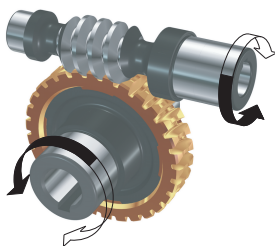
MRDV

RDV
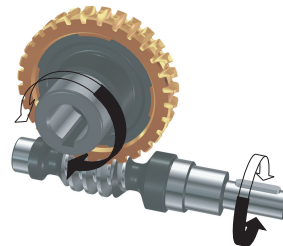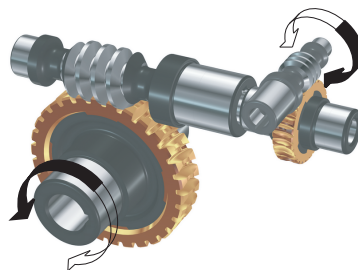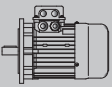
MRDV+MRDV
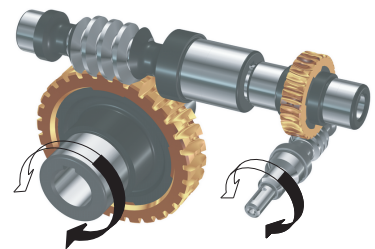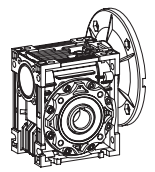
RDV+MRDV
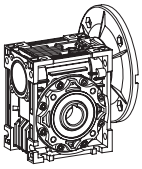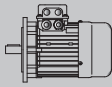
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.06	186.7	2.6	7.5	503	4.2	**MRDV025**	**5614**	58
	140	3.4	10	553	3.5			
	93.3	4.9	15	633	2.5			
	70	6.1	20	697	2			
	46.7	8.2	30	798	1.6			
	35	10	40	878	1.3			
	28	12	50	946	0.9			
	23.3	14	60	1006	0.7			
	186.7	2.6	7.5	683	6.9	**MRDV030**	**5614**	59
	140	3.4	10	752	5.4			
	93.3	4.7	15	861	3.8			
	70	6	20	948	3			
	56	7	25	1021	3			
	46.7	8	30	1085	2.5			
	35	9.7	40	1194	1.9			
	28	11	50	1286	1.5			
	23.3	13	60	1367	1.3			
	17.5	14	80	1504	0.9			
	14	25	100	1620	1.3	**MRDV025+030**	**5614**	71
	9.3	32	150	1830	0.9			
	7	41	200	1830	0.7			
	5.6	44	250	1830	0.8			
	4.7	59	300	3490	1.2	**MRDV025+040**	**5614**	71
	3.5	71	400	3490	0.9			
	2.8	82	500	3490	0.7			
	2.3	101	600	3490	0.6			
	1.9	116	750	3490	0.5			
	1.6	143	900	3490	0.5			
	1.2	171	1200	3490	0.4			
	0.9	197	1500	3490	0.3			
	0.8	217	1800	3490	0.3			
	0.6	268	2400	3490	0.2			
	0.5	324	3000	3490	0.2			
	0.4	294	4000	3490	0.1			
	0.3	356	5000	3490	0.1			
	4.7	57	300	3490	1.3	**MRDV030+040**	**5614**	72
	3.5	70	400	3490	0.9			
	2.8	96	500	3490	0.6			
	2.3	104	600	3490	0.7			
	1.9	121	750	3490	0.6	**MRDV030+040**	**5614**	72
	1.6	139	900	3490	0.5			
	1.2	166	1200	3490	0.4			
	0.9	196	1500	3490	0.4			
	0.8	218	1800	3490	0.3			
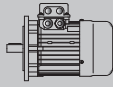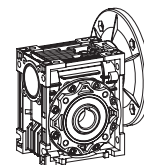
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
0.06	0.58	261	2400	3490	0.2	**MRDV030+040**	**5614**	72
	0.4	300	3200	3490	0.2			
	0.4	279	4000	3490	0.1			
	0.28	338	5000	3490	0.1			
	1.6	141	900	4840	1	**MRDV030+050**	**5614**	72
	1.2	169	1200	4840	0.7			
	0.93	199	1500	4840	0.7			
	0.78	222	1800	4840	0.7			
	0.6	266	2400	4840	0.5			
	0.5	307	3000	4840	0.4			
	0.35	288	4000	4840	0.3			
	0.29	311	4800	4840	0.3			
	0.9	204	1500	6270	1.1	**MRDV030+063**	**5614**	72
	0.78	225	1800	6270	0.9			
	0.58	276	2400	6270	0.8			
	0.47	319	3000	6270	0.7			
	0.35	306	4000	6270	0.6			
	0.28	360	5000	6270	0.4			
	0.6	330	2400	7380	1.1	**MRDV040+075**	**5614**	73
	0.47	377	3000	7380	0.8			
	0.35	355	4000	7380	0.7			
	0.28	419	5000	7380	0.5			
	0.5	406	3000	8180	1.4	**MRDV040+090**	**5614**	73
	0.35	365	4000	8180	1.3			
	0.28	431	5000	8180	1			
0.09	373.3	2	7.5	399	3.9	**MRDV025**	**5612**	58
	280	2.6	10	439	3.4			
	186.7	3.8	15	503	2.4			
	140	4.9	20	553	1.9			
	93.3	6.7	30	633	1.3			
	70	8.3	40	697	1.1			
	56	10	50	751	0.9			
	186.7	3.9	7.5	503	2.8	**MRDV025**	**5624**	58
	140	5.1	10	553	2.4			
	93.3	7.3	15	633	1.6			
	70	9.2	20	697	1.3			
	46.7	12	30	798	1.1			
	35	15	40	878	0.9			
	373.3	2	7.5	542	6.5	**MRDV030**	**5612**	59
	280	2.6	10	597	5			
	186.7	3.7	15	683	3.5			
	140	4.8	20	752	2.5			
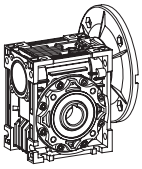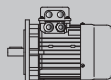
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
0.09	112	5.7	25	810	2.8	**MRDV030**	**5612**	59
	93.3	6.5	30	861	2.3			
	70	8.1	40	948	1.7			
	56	10	50	1021	1.4			
	46.7	11	60	1085	1.1			
	35	13	80	1194	0.9			
	186.7	3.9	7.5	683	4.6	**MRDV030**	**5624**	59
	140	5	10	752	3.6			
	93.3	7.1	15	861	2.5			
	70	9	20	948	2			
	56	10	25	1021	2			
	46.7	12	30	1085	1.7			
	35	14	40	1194	1.2			
	28	17	50	1286	1			
	23.3	19	60	1367	0.9			
	28	20	100	1286	1.6	**MRDV025+030**	**5612**	71
	18.7	25	150	1472	1.1			
	14	33	200	1620	0.9			
	14	38	100	1620	0.8	**MRDV025+030**	**5624**	71
	9.3	49	150	1830	0.6			
	7	62	200	1830	0.5			
	5.6	66	250	1830	0.5			
	4.7	75	300	1830	0.4			
	3.5	107	400	1830	0.3			
	2.8	115	500	1830	0.3			
	2.3	135	600	1830	0.2			
	1.9	151	750	1830	0.2			
	1.6	178	900	1830	0.2			
	1.2	212	1200	1830	0.1			
	0.9	247	1500	1830	0.1			
	0.78	304	1800	1830	0.1			
	0.58	340	2400	1830	0.1			
	0.47	405	3000	1830	0.1			
	28	19	50	2475	2	**MRDV040**	**5624**	60
	23.3	21	60	2630	1.7			
	17.5	26	80	2895	1.3			
	14	29	100	3118	1			
	9.3	45	300	3490	1.6	**MRDV025+040**	**5612**	71
	7	54	400	3490	1.2			
	5.6	77	500	3490	0.8			
	4.7	88	300	3490	0.8	**MRDV030+040**	**5624**	72
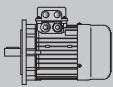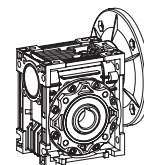
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
0.09	3.5	107	400	4840	1.2	**MRDV030+050**	**5624**	72
	2.8	123	500	4840	1			
	2.3	159	600	4840	0.9			
	1.9	185	750	4840	0.8			
	1.6	212	900	4840	0.7			
	1.6	200	900	6270	1	**MRDV030+063**	**5624**	72
	1.2	263	1200	6270	0.9			
	0.93	305	1500	6270	0.7			
	0.9	360	1500	7380	1.1	**MRDV040+075**	**5624**	73
	0.78	404	1800	7380	1			
	0.58	496	2400	7380	0.7			
	0.5	609	3000	8180	0.9	**MRDV040+090**	**5624**	73
	0.35	548	4000	8180	0.8			
0.12	373.3	2.7	7.5	399	3	**MRDV025**	**5622**	58
	280	3.5	10	439	2.6			
	186.7	5	15	503	1.8			
	140	6.5	20	553	1.4			
	93.3	9	30	633	1			
	70	11	40	697	0.8			
	186.7	5.2	7.5	683	3.4	**MRDV030**	**6314**	59
	140	6.7	10	752	2.7			
	93.3	9.5	15	861	1.9			
	70	12	20	948	1.5			
	56	14	25	1021	1.5			
	46.7	16	30	1085	1.3			
	35	19	40	1194	0.9			
	28	23	50	1286	0.8			
	46.7	17	30	2087	2.6	**MRDV040**	**6314**	60
	35	21	40	2298	1.9			
	28	25	50	2475	1.5			
	23.3	28	60	2630	1.3			
	17.5	34	80	2895	1			
	14	38	100	3118	0.8			
	18.7	42	75	2833	1.2	**PC063+MRDV040**	**6314**	67
	15.6	46	90	3011	1.2			
	11.7	57	120	3314	0.9			
	9.3	66	150	3490	0.7			
	7.8	74	180	3490	0.6			
	23.3	29	60	3610	2.3	**MRDV050**	**6314**	61
	17.5	35	80	3973	1.9			
	14	40	100	4280	1.4			
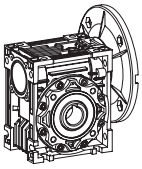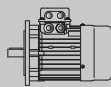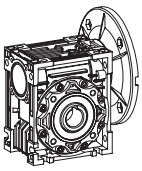
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.12	9.3	68	150	4840	1.3	**PC063+MRDV050**	**6314**	67
	7.8	75	180	4840	1.1			
	5.8	88	240	4840	0.8			
	4.7	98	300	4840	0.7			
	4.7	119	300	4840	1.2	**MRDV030+050**	**6314**	72
	3.5	142	400	4840	0.9			
	2.8	164	500	4840	0.7			
	5.8	92	240	6270	1.5	**PC063+MRDV063**	**6314**	68
	4.7	103	300	6270	1.2			
	2.8	171	500	6270	1.3	**MRDV030+063**	**6314**	72
	2.3	208	600	6270	1.1			
	1.9	241	750	6270	0.9			
	1.6	325	900	7380	1.2	**MRDV040+075**	**6314**	73
	1.2	399	1200	7380	0.9			
	0.8	547	1800	8180	0.9	**MRDV040+090**	**6314**	73
	0.58	695	2400	8180	0.9			
	0.5	884	3000	10320	1.2	**MRDV050+110**	**6314**	73
	0.35	784	4000	10320	1			
	0.28	928	5000	10320	0.8			
0.18	373.3	4	7.5	542	3.2	**MRDV030**	**6312**	59
	280	5.2	10	597	2.5			
	186.7	7.5	15	683	1.7			
	140	10	20	752	1.3			
	112	11	25	810	1.4			
	93.3	13	30	861	1.1			
	70	16	40	948	0.9			
	186.7	7.8	7.5	683	2.3	**MRDV030**	**6324**	59
	140	10	10	752	1.8			
	93.3	14	15	861	1.3			
	70	18	20	948	1			
	56	21	25	1021	1	**MRDV030**	**6324**	59
	46.7	24	30	1085	0.8			
	93.3	14	30	1657	2.4	**MRDV040**	**6312**	60
	70	18	40	1824	1.8			
	56	21	50	1964	1.4			
	70	19	20	1824	2	**MRDV040**	**6324**	60
	56	23	25	1964	1.7			
	46.7	26	30	2087	1.7			
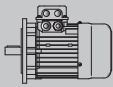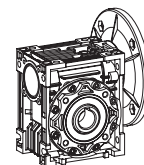
P_1 [kW]	n_2 [min⁻¹]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.18	35	32	40	2298	1.3	**MRDV040**	**6324**	60
	28	38	50	2475	1			
	23.3	43	60	2630	0.8			
	45	29	20	2113	1.5	**MRDV040**	**7116**	60
	36	34	25	2276	1.3			
	30	38	30	2419	1.3			
	22.5	47	40	2662	1			
	18.7	64	75	2833	0.8	**PC063+MRDV040**	**6324**	67
	15.6	70	90	3011	0.8			
	11.7	85	120	3314	0.6			
	46.7	24	60	2865	2.1	**MRDV050**	**6312**	61
	35	30	80	3153	1.5			
	28	34	100	3397	1.2			
	35	33	40	3153	2.3	**MRDV050**	**6324**	61
	28	39	50	3397	1.9			
	23.3	43	60	3610	1.6			
	17.5	52	80	3973	1.2			
	14	60	100	4280	0.9			
	18	56	50	3936	1.4	**MRDV050**	**7116**	61
	15	63	60	4183	1.1			
	11.3	75	80	4604	0.9			
	18.7	64	75	3889	1.4	**PC063+MRDV050**	**6324**	67
	15.6	71	90	4132	1.5			
	11.7	87	120	4548	1.1			
	9.3	101	150	4840	0.9			
	7.8	113	180	4840	0.7			
	5.8	133	240	4840	0.6			
	12	95	75	4506	1.2	**PC071+MRDV050**	**7116**	68
	10	105	90	4788	1.4			
	7.5	126	120	4840	1			
	15	66	60	5467	2.1	**MRDV063**	**7116**	62
	11.3	79	80	6018	1.6			
	9	90	100	6270	1.4			
	9.3	103	150	6270	1.7	**PC063+MRDV063**	**6324**	68
	7.8	117	180	6270	1.4			
	5.8	139	240	6270	1			
	4.7	155	300	6270	0.8			
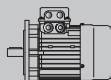
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.18	12	97	75	5889	2.2	**PC071+MRDV063**	**7116**	68
	10	107	90	6259	2.4			
	7.5	131	120	6270	1.8			
	6	152	150	6270	1.4			
	5	168	180	6270	1.2			
	3.8	197	240	6270	0.9			
	3	218	300	6270	0.7			
	3.5	222	400	6270	1	**MRDV030+063**	**6324**	72
	2.8	257	500	6270	0.8			
	5	179	180	7380	1.7	**PC071+MRDV075**	**7116**	69
	3.8	211	240	7380	1.2			
	3	235	300	7380	1			
	2.3	362	600	7380	1.1	**MRDV040+075**	**6324**	73
	1.9	435	750	7380	0.9			
	1.6	487	900	7380	0.8			
	1.2	629	1200	8180	1	**MRDV040+090**	**6324**	73
	0.93	735	1500	8180	0.8			
	0.8	861	1800	10320	1.5	**MRDV050+110**	**6324**	73
	0.58	1113	2400	10320	1.1			
0.25	373.3	5.6	7.5	542	2.3	**MRDV030**	**6322**	59
	280	7.2	10	597	1.8			
	186.7	10	15	683	1.3			
	140	13	20	752	0.9			
	112	16	25	810	1			
	93.3	18	30	861	0.8			
	186.7	11	7.5	1315	3.6	**MRDV040**	**7114**	60
	140	14	10	1447	2.8			
	93.3	21	15	1657	1.9			
	70	27	20	1824	1.5			
	56	32	25	1964	1.2			
	46.7	36	30	2087	1.3			
	35	44	40	2298	0.9			
	120	17	7.5	1524	2.6	**MRDV040**	**7126**	60
	90	22	10	1677	2			
	60	31	15	1920	1.4			
	45	40	20	2113	1.1			
	36	48	25	2276	0.9			
	30	53	30	2419	0.9			
	35	42	80	3153	1.1	**MRDV050**	**6322**	61
	28	48	100	3397	0.8			
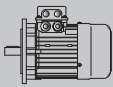
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
0.25	70	27	20	2503	2.7	**MRDV050**	**7114**	61
	56	32	25	2696	2.2			
	46.7	37	30	2865	2.3			
	35	46	40	3153	1.7			
	28	54	50	3397	1.4			
	23.3	60	60	3610	1.1			
	17.5	72	80	3973	0.9			
	45	40	20	2900	1.9	**MRDV050**	**7126**	61
	36	48	25	3124	1.5			
	30	54	30	3320	1.7			
	22.5	67	40	3654	1.2			
	18	78	50	3936	1			
	15	88	60	4183	0.8			
	18.7	88	75	3889	1	**PC071+MRDV050**	**7114**	68
	15.6	98	90	4132	1.1			
	11.7	121	120	4548	0.8			
	28	56	50	4440	2.4	**MRDV063**	**7114**	62
	23.3	63	60	4719	2			
	17.5	78	80	5193	1.6			
	14	87	100	5595	1.4			
	18	81	50	5145	1.8	**MRDV063**	**7126**	62
	15	92	60	5467	1.5			
	11.3	110	80	6018	1.2			
	9	125	100	6270	1			
	18.7	91	75	5083	1.8	**PC071+MRDV063**	**7114**	68
	15.6	100	90	5401	2			
	11.7	125	120	5945	1.5			
	9.3	143	150	6270	1.2			
	7.8	163	180	6270	1			
	5.8	192	240	6270	0.7			
	4.7	215	300	6270	0.6			
	12	135	75	5889	1.6	**PC071+MRDV063**	**7126**	68
	10	148	90	6259	1.8			
	7.5	181	120	6270	1.3			
	6	211	150	6270	1			
	7	159	400	6270	1.4	**MRDV030+063**	**6322**	72
	5.6	185	500	6270	1.2			
	17.5	82	80	6130	2.3	**MRDV075**	**7114**	63
	14	94	100	6603	1.9			
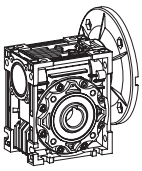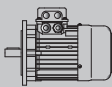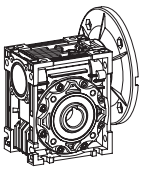
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.25	11.3	117	80	7103	1.7	**MRDV075**	**7126**	63
	9	133	100	7380	1.4			
	9.3	151	150	7380	1.7	**PC071+MRDV075**	**7114**	69
	7.8	172	180	7380	1.4			
	5.8	201	240	7380	1.1			
	4.7	230	300	7380	0.9			
	12	139	75	6952	2.4	**PC071+MRDV075**	**7126**	69
	10	155	90	7380	2.5			
	7.5	191	120	7380	1.9			
	6	219	150	7380	1.5			
	5	248	180	7380	1.2			
	3.5	336	400	7380	1.1	**MRDV040+075**	**7114**	73
	2.8	384	500	7380	0.8			
	5	263	180	8180	1.9	**PC071+MRDV090**	**7126**	69
	3.8	318	240	8180	1.4			
	3	358	300	8180	1.1			
	2.3	512	600	8180	1.2	**MRDV040+090**	**7114**	73
	1.9	598	750	8180	0.9			
	1.6	667	900	8180	0.8			
	1.2	943	1200	10320	1.3	**MRDV050+110**	**7114**	73
	0.93	1064	1500	10320	1.2			
	0.78	1195	1800	10320	1.1			
	0.6	1624	2400	13500	1	**MRDV063+130**	**7114**	74
	0.47	1935	3000	13500	0.8			
	0.35	2046	4000	13500	0.6			
	0.28	2430	5000	13500	0.5			
0.37	373.3	8.4	7.5	1044	3.3	**MRDV040**	**7112**	60
	280	11	10	1149	2.6			
	186.7	16	15	1315	1.9			
	140	21	20	1447	1.4	**MRDV040**	**7112**	60
	112	25	25	1559	1.1			
	186.7	16	7.5	1315	2.4	**MRDV040**	**7124**	60
	140	21	10	1447	1.9			
	93.3	31	15	1657	1.3			
	70	39	20	1824	1			
	56	47	25	1964	0.8			
	46.7	53	30	2087	0.8			
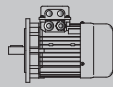
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
0.37	112	25	25	2140	2	**MRDV050**	**7112**	61
	93.3	29	30	2274	2.2			
	70	37	40	2503	1.6			
	56	44	50	2696	1.2			
	46.7	50	60	2865	1	**MRDV050**	**7112**	61
	35	62	80	3153	0.7			
	140	22	10	1987	3.3	**MRDV050**	**7124**	61
	93.3	31	15	2274	2.4			
	70	40	20	2503	1.8			
	56	48	25	2696	1.5			
	46.7	55	30	2865	1.5			
	35	68	40	3153	1.1			
	28	80	50	3397	0.9	**MRDV050**	**7124**	61
	23.3	89	60	3610	0.8			
	120	25	7.5	2091	3.3	**MRDV050**	**8016**	61
	90	33	10	2302	2.5			
	60	47	15	2635	1.8			
	45	60	20	2900	1.3			
	36	72	25	3124	1			
	30	80	30	3320	1.1			
	35	71	40	4122	2.1	**MRDV063**	**7124**	62
	28	83	50	4440	1.6			
	23.3	94	60	4719	1.4			
	17.5	115	80	5193	1.1			
	14	129	100	5595	0.9			
	45	60	20	3791	2.4	**MRDV063**	**8016**	62
	36	74	25	4084	1.9			
	30	82	30	4339	2.1			
	22.5	102	40	4776	1.6			
	18	120	50	5145	1.2			
	15	137	60	5467	1			
	18.7	134	75	5083	1.2	**PC071+MRDV063**	**7124**	68
	15.6	148	90	5401	1.4			
	11.7	185	120	5945	1			
	9.3	212	150	6270	0.8			
	9.3	181	300	6270	1.3	**MRDV030+063**	**7112**	72
	7	236	400	6270	1			
	23.3	98	60	5569	2	**MRDV075**	**7124**	63
	17.5	121	80	6130	1.6			
	14	139	100	6603	1.3			
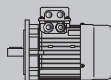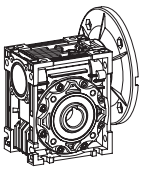
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.37	18	126	50	6073	1.8	**MRDV075**	**8016**	63
	15	144	60	6453	1.5			
	11.3	173	80	7103	1.2			
	9	196	100	7380	1			
	18.7	138	75	6000	1.8	**PC071+MRDV075**	**7124**	69
	15.6	154	90	6375	1.9			
	11.7	191	120	7017	1.5			
	9.3	223	150	7380	1.1			
	7.8	254	180	7380	0.9			
	12	206	75	6952	1.6	**PC080+MRDV075**	**8016**	69
	10	230	90	7380	1.7			
	7.5	283	120	7380	1.3			
	6	324	150	7380	1			
	4.7	405	300	7380	1	**MRDV040+075**	**7124**	73
	3.5	498	400	7380	0.7			
	11.3	185	80	7859	1.7	**MRDV090**	**8016**	64
	9	212	100	8180	1.3			
	7.8	268	180	8180	1.5	**PC071+MRDV090**	**7124**	69
	5.8	321	240	8180	1.1			
	4.7	371	300	8180	0.9			
	6	347	150	8180	1.6	**PC080+MRDV090**	**8016**	70
	5	389	180	8180	1.3			
	3.8	471	240	8180	1			
	4.7	402	300	8180	1.5	**MRDV040+090**	**7124**	73
	3.5	523	400	8180	1.2			
	2.8	611	500	8180	0.9			
	2.3	757	600	8180	0.8			
	3.8	509	240	10320	1.6	**PC080+MRDV110**	**8016**	70
	3	577	300	10320	1.3			
	1.9	950	750	10320	1.3	**MRDV050+110**	**7124**	73
	1.6	1079	900	10320	1.2			
	1.2	1396	1200	10320	0.8			
	0.9	1674	1500	13500	1.1	**MRDV063+130**	**7124**	74
	0.78	1887	1800	13500	0.9			
0.55	373.3	13	7.5	1044	2.2	**MRDV040**	**7122**	60
	280	17	10	1149	1.8			
	186.7	24	15	1315	1.3			
	140	31	20	1447	0.9			
	112	37	25	1559	0.8			
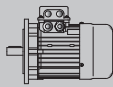
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.55	140	31	20	1987	1.7	**MRDV050**	**7122**	61
	112	38	25	2140	1.4			
	93.3	43	30	2274	1.5			
	70	55	40	2503	1.1			
	56	65	50	2696	0.8			
	46.7	74	60	2865	0.7			
	186.7	25	7.5	1805	2.9	**MRDV050**	**8014**	61
	140	32	10	1987	2.2	**MRDV050**	**8014**	61
	93.3	46	15	2274	1.6			
	70	59	20	2503	1.2			
	56	71	25	2696	1			
	46.7	81	30	2865	1			
	120	38	7.5	2091	2.2	**MRDV050**	**8026**	61
	90	49	10	2302	1.7			
	60	69	15	2635	1.2			
	45	89	20	2900	0.9			
	70	56	40	3272	1.9	**MRDV063**	**7122**	62
	56	67	50	3524	1.5			
	46.7	77	60	3745	1.2			
	35	95	80	4122	0.9			
	28	109	100	4440	0.7			
	70	61	20	3272	2.2	**MRDV063**	**8014**	62
	56	73	25	3524	1.8			
	46.7	83	30	3745	1.9			
	35	105	40	4122	1.4			
	28	124	50	4440	1.1			
	23.3	140	60	4719	0.9			
	60	71	15	3444	2.2	**MRDV063**	**8026**	62
	45	90	20	3791	1.6			
	36	109	25	4084	1.3			
	30	123	30	4339	1.4			
	22.5	152	40	4776	1.1			
	35	99	80	4865	1.3	**MRDV075**	**7122**	63
	28	114	100	5241	1			
	35	108	40	4865	2	**MRDV075**	**8014**	63
	28	129	50	5241	1.6			
	23.3	146	60	5569	1.4			
	17.5	180	80	6130	1.1			
	14	206	100	6603	0.9			
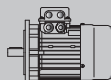
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.55	30	128	30	5122	2	**MRDV075**	**8026**	65
	22.5	159	40	5637	1.5			
	18	187	50	6073	1.2			
	15	214	60	6453	1			
	18.7	205	75	6000	1.2	**PC080+MRDV075**	**8014**	69
	15.6	230	90	6375	1.3			
	11.7	284	120	7017	1			
	9.3	332	150	7380	0.8			
	12	306	75	6952	1.1	**PC080+MRDV075**	**8026**	69
	10	341	90	7380	1.1			
	17.5	189	80	6783	1.5	**MRDV090**	**8014**	64
	14	221	100	7306	1.2			
	18	198	50	6719	2	**MRDV090**	**8026**	64
	15	224	60	7140	1.6			
	11.3	275	80	7859	1.1			
	9	315	100	8180	0.9			
	15.6	240	90	7054	2.3	**PC080+MRDV090**	**8014**	70
	11.7	297	120	7764	1.6			
	9.3	355	150	8180	1.3			
	7.8	398	180	8180	1			
	10	357	90	8174	2	**PC080+MRDV090**	**8026**	70
	7.5	441	120	8180	1.4			
	6	516	150	8180	1.1			
	5	578	180	8180	0.9			
	9.3	306	300	8180	2	**MRDV040+090**	**7122**	73
	7	403	400	8180	1.5			
	5.6	470	500	8180	1.2			
	17.5	201	80	8571	2.6	**MRDV110**	**8014**	65
	14	236	100	9232	2			
	11.3	294	80	9931	1.9	**MRDV110**	**8026**	65
	9	338	100	10320	1.5			
	7.8	425	180	10320	1.8	**PC080+MRDV110**	**8014**	70
	5.8	513	240	10320	1.3			
	4.7	597	300	10320	1			
	7.5	462	120	10320	2.6	**PC080+MRDV110**	**8026**	70
	6	552	150	10320	2			
	5	620	180	10320	1.6			
	3.8	756	240	10320	1.1			
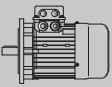
P_1 [kW]	n_2 [min⁻¹]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.55	4.7	639	300	10320	2	MRDV050+110	8014	73
	3.5	826	400	10320	1.4			
	2.8	984	500	10320	1.1			
	2.3	1181	600	10320	1			
	1.9	1411	750	10320	0.9			
	3.8	756	240	13500	1.6	PC080+MRDV130	8026	70
	3	858	300	13500	1.3			
	2.8	996	500	13500	1.6	MRDV063+130	8014	74
	1.9	1471	750	13500	1.2			
	1.2	2132	1200	13500	0.8			
0.75	373.3	17	7.5	1433	3	MRDV050	8012	61
	280	23	10	1577	2.4			
	186.7	33	15	1805	1.7			
	140	42	20	1987	1.3			
	112	51	25	2140	1			
	93.3	58	30	2274	1.1			
	186.7	34	7.5	1805	2.1	MRDV050	8024	61
	140	44	10	1987	1.6			
	93.3	63	15	2274	1.2			
	70	81	20	2503	0.9			
	140	43	20	2597	2.3	MRDV063	8012	62
	112	52	25	2797	1.8			
	93.3	60	30	2973	2			
	70	77	40	3272	1.4			
	56	91	50	3524	1.1			
	46.7	104	60	3745	0.9			
	93.3	64	15	2973	2.2	MRDV063	8024	62
	70	83	20	3272	1.6			
	56	100	25	3524	1.3			
	46.7	114	30	3745	1.4			
	35	143	40	4122	1			
	120	52	7.5	2734	2.9	MRDV063	90S6	62
	90	68	10	3009	2.3			
	60	97	15	3444	1.6			
	45	123	20	3791	1.2			
	36	149	25	4084	0.9			
	30	167	30	4339	1			
	46.7	109	60	4421	1.3	MRDV075	8012	63
	28	156	100	5241	0.8			
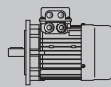
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.75	56	102	25	4160	2	**MRDV075**	**8024**	63
	46.7	117	30	4421	2			
	35	147	40	4865	1.5			
	28	177	50	5241	1.2			
	23.3	200	60	5569	1			
	60	98	15	4065	2.4	**MRDV075**	**90S6**	63
	45	126	20	4474	1.9			
	36	153	25	4820	1.4			
	30	174	30	5122	1.5			
	22.5	216	40	5637	1.1			
	18.7	280	75	6000	0.9	**PC080+MRDV075**	**8024**	69
	15.6	313	90	6375	1			
	35	141	80	5383	1.6	**MRDV090**	**8012**	64
	28	166	100	5799	1.2			
	28	184	50	5799	1.8	**MRDV090**	**8024**	64
	23.3	212	60	6163	1.5			
	17.5	258	80	6783	1.1			
	14	302	100	7306	0.9			
	30	179	30	5667	2.6	**MRDV090**	**90S6**	64
	22.5	226	40	6238	1.8			
	18	271	50	6719	1.4			
	15	306	60	7140	1.1			
	15.6	327	90	7054	1.7	**PC080+MRDV090**	**8024**	70
	11.7	405	120	7764	1.2			
	9.3	483	150	8180	0.9			
	7.8	543	180	8180	0.7			
	7	549	400	8180	1.1	**MRDV040+090**	**8012**	73
	5.6	642	500	8180	0.9			
	17.5	274	80	8571	1.9	**MRDV110**	**8024**	65
	14	322	100	9232	1.5			
	15	325	60	9023	2.1	**MRDV110**	**90S6**	65
	11.3	401	80	9931	1.4			
	9	462	100	10320	1.1			
	11.7	430	120	9811	2.2	**PC080+MRDV110**	**8024**	70
	9.3	506	150	10320	1.7			
	7.8	580	180	10320	1.3			
	5.8	700	240	10320	0.9			
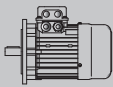
P_1 [kW]	n_2 [min⁻¹]	M_2 [Nm]	i	Fr_2 [N]	fs			
0.75	12.4	393	73	9614	3.2	**PC090+MRDV110**	**90S6**	71
	9.3	508	96.8	10320	2.3			
	7.4	607	121	10320	1.8			
	6.2	682	145.2	10320	1.5			
	4.6	832	193.6	10320	1			
	9.3	446	300	10320	2.8	**MRDV050+110**	**8012**	74
	7	563	400	10320	2.1			
	5.6	687	500	10320	1.6			
	4.7	871	300	10320	1.5	**MRDV050+110**	**8024**	74
	3.5	1126	400	10320	1.1			
	11.3	407	80	12989	2.1	**MRDV130**	**90S6**	67
	9	470	100	13500	1.7			
	5.8	712	240	13500	1.4	**PC080+MRDV130**	**8024**	71
	4.7	813	300	13500	1.1			
	12.4	399	73	12575	4.4	**PC090+MRDV130**	**90S6**	71
	9.3	508	96.8	13500	3.2			
	7.4	607	121	13500	2.6			
	6.2	682	145.2	13500	2.1			
	4.6	832	193.6	13500	1.5			
	3.7	944	242	13500	1.2			
	2.8	1358	500	13500	1.1	**MRDV063+130**	**8024**	75
	2.3	1631	600	13500	1			
	1.9	2005	750	13500	0.9			
	1.6	2283	900	13500	0.8			
1.1	373.3	25	7.5	1433	2.1	**MRDV050**	**8022**	62
	280	33	10	1577	1.6			
	186.7	48	15	1805	1.2			
	140	62	20	1987	0.9			
	186.7	48	15	2359	2.1	**MRDV063**	**8022**	63
	140	63	20	2597	1.6			
	112	77	25	2797	1.2			
	93.3	88	30	2973	1.4			
	70	113	40	3272	1			
	120	76	7.5	2734	2	**MRDV063**	**90L6**	63
	90	99	10	3009	1.5			
	60	142	15	3444	1.1			
	45	180	20	3791	0.8			
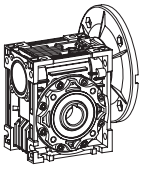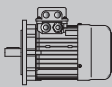
P$_1$ [kW]	n$_2$ [min^{-1}]	M$_2$ [Nm]	i	Fr$_2$ [N]	fs			
1.1	186.7	50	7.5	2359	2.6	**MRDV063**	**90S4**	62
	140	65	10	2597	2			
	93.3	93	15	2973	1.5			
	70	122	20	3272	1.1			
	56	146	25	3524	0.9			
	46.7	167	30	3745	1			
	112	78	25	3302	1.9	**MRDV075**	**8022**	63
	93.3	90	30	3509	1.9			
	70	116	40	3862	1.4			
	56	139	50	4160	1.1			
	46.7	160	60	4421	0.9			
	90	100	10	3551	2.3	**MRDV075**	**90L6**	63
	60	144	15	4065	1.6			
	45	184	20	4474	1.3			
	36	225	25	4820	1			
	30	256	30	5122	1			
	93.3	96	15	3509	2.1	**MRDV075**	**90S4**	63
	70	123	20	3862	1.7			
	56	150	25	4160	1.3			
	46.7	171	30	4421	1.3			
	35	216	40	4865	1			
	35	207	80	5383	1.1	**MRDV090**	**8022**	64
	28	244	100	5799	0.8			
	36	231	25	5333	1.6	**MRDV090**	**90L6**	64
	30	263	30	5667	1.8			
	22.5	331	40	6238	1.2			
	18	397	50	6719	1			
	15	448	60	7140	0.8			
	35	225	40	5383	1.6	**MRDV090**	**90S4**	64
	28	270	50	5799	1.3			
	23.3	311	60	6163	1			
	22.5	345	40	7882	2.3	**MRDV110**	**90L6**	65
	18	414	50	8491	1.8			
	15	476	60	9023	1.4			
	11.3	588	80	9931	1			
	28	281	50	7328	2.3	**MRDV110**	**90S4**	65
	23.3	324	60	7787	1.9			
	17.5	402	80	8571	1.3			
	14	473	100	9232	1			
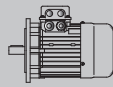
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
1.1	12.4	576	73	9614	2.2	**PC090+MRDV110**	**90L6**	70
	9.3	746	96.8	10320	1.6			
	7.4	890	121	10320	1.2			
	6.2	1000	145.2	10320	1			
	19.3	392	73	8298	2.5	**PC090+MRDV110**	**90S4**	70
	14.5	508	96.8	9133	1.8			
	11.6	599	121	9838	1.5			
	9.6	686	145.2	10320	1.1			
	7.2	828	193.6	10320	0.8			
	9.3	654	300	10320	1.9	**MRDV050+110**	**8022**	73
	7	845	400	10320	1.4			
	5.6	1007	500	10320	1.1			
	11.3	598	80	12989	1.4	**MRDV130**	**90L6**	66
	9	689	100	13500	1.1			
	17.5	408	80	11210	2.1	**MRDV130**	**90S4**	66
	14	480	100	12076	1.5			
	12.4	585	73	12575	3	**PC090+MRDV130**	**90L6**	70
	9.3	746	96.8	13500	2.2			
	7.4	890	121	13500	1.7			
	6.2	1000	145.2	13500	1.4			
	4.6	1220	193.6	13500	1			
	19.3	398	73	10853	3.5	**PC090+MRDV130**	**90S4**	70
	14.5	508	96.8	11945	2.6			
	11.6	608	121	12868	2			
	9.6	686	145.2	13500	1.6			
	7.2	843	193.6	13500	1.2			
	5.8	962	242	13500	0.9			
	4.7	1312	300	13500	1.3	**MRDV063+130**	**90S4**	74
	3.5	1671	400	13500	1			
	2.8	1991	500	13500	0.8			
1.5	373.3	35	7.5	1433	1.5	**MRDV050**	**80C2**	61
	280	45	10	1577	1.2			
	186.7	65	15	1805	0.9			
	186.7	68	7.5	2359	1.9	**MRDV063**	**90L4**	62
	140	89	10	2597	1.5			
	93.3	127	15	2973	1.1			
	70	166	20	3272	0.8	**MRDV063**	**90L4**	62
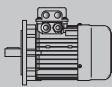
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
1.5	373.3	35	7.5	1873	2.7	**MRDV063**	**90S2**	62
	280	46	10	2061	2.1			
	186.7	66	15	2359	1.6			
	140	86	20	2597	1.2			
	112	105	25	2797	0.9			
	93.3	120	30	2973	1			
	120	105	7.5	3227	2	**MRDV075**	**100L6**	63
	90	137	10	3551	1.7			
	60	196	15	4065	1.2			
	56	189	50	4160	0.8	**MRDV075**	**90S2**	63
	46.7	218	60	4421	0.7			
	140	90	10	3065	2.2	**MRDV075**	**90L4**	63
	93.3	130	15	3509	1.5			
	70	168	20	3862	1.3			
	56	205	25	4160	1			
	46.7	233	30	4421	1			
	280	46	10	2433	3.1	**MRDV075**	**90S2**	63
	186.7	67	15	2785	2.2			
	140	87	20	3065	1.8	**MRDV075**	**90S2**	63
	112	106	25	3302	1.4			
	93.3	123	30	3509	1.4			
	70	158	40	3862	1			
	90	138	10	3929	2.7	**MRDV090**	**100L6**	64
	60	201	15	4498	2.1			
	45	258	20	4951	1.5			
	36	314	25	5333	1.2			
	30	358	30	5667	1.3			
	70	172	20	4273	2.1	**MRDV090**	**90L4**	64
	56	210	25	4603	1.6			
	46.7	239	30	4891	1.7			
	35	307	40	5383	1.2			
	28	368	50	5799	0.9			
	23.3	424	60	6163	0.8			
	56	194	50	4603	1.4	**MRDV090**	**90S2**	64
	46.7	227	60	4891	1.1			
	45	264	20	6256	2.7	**MRDV110**	**100L6**	65
	36	322	25	6739	2.4			
	30	363	30	7161	2.3			
	22.5	471	40	7882	1.7			
	18	565	50	8491	1.3			
	15	649	60	9023	1.1			
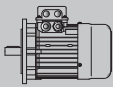
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
1.5	35	319	40	6803	2.2	**MRDV110**	**90L4**	65
	28	384	50	7328	1.7			
	23.3	442	60	7787	1.4			
	17.5	548	80	8571	0.9			
	46.7	236	60	6181	2	**MRDV110**	**90S2**	65
	35	299	80	6803	1.3			
	28	353	100	7328	1			
	19.3	535	73	8298	1.9	**PC090+MRDV110**	**90L4**	70
	14.5	693	96.8	9133	1.3			
	11.6	817	121	9838	1.1			
	9.6	936	145.2	10320	0.8			
	9.3	891	300	10320	1.4	**MRDV050+110**	**90S2**	73
	7	1153	400	10320	1			
	5.6	1373	500	10320	0.8			
	22.5	478	40	10309	2.3	**MRDV130**	**100L6**	66
	18	573	50	11105	1.8			
	15	659	60	11801	1.4	**MRDV130**	**100L6**	66
	11.3	815	80	12989	1.1			
	17.5	557	80	11210	1.5	**MRDV130**	**90L4**	66
	14	655	100	12076	1.1			
	19.3	542	73	10853	2.6	**PC090+MRDV130**	**90L4**	70
	14.5	693	96.8	11945	1.9			
	11.6	830	121	12868	1.5			
	9.6	936	145.2	13500	1.1			
	7.2	1149	194	13500	0.8			
	9.3	915	300	13500	1.9	**MRDV063+130**	**90S2**	74
	7	1166	400	13500	1.4			
	5.6	1389	500	13500	1.1			
	4.7	1789	300	13500	1	**MRDV063+130**	**90L4**	74
	3.5	2279	400	13500	0.7			
2.2	373.3	51	7.5	1873	1.8	**MRDV063**	**90L2**	62
	280	67	10	2061	1.5			
	186.7	97	15	2359	1.1			
	186.7	100	7.5	2785	1.8	**MRDV075**	**100LA4**	63
	140	132	10	3065	1.5			
	93.3	191	15	3509	1			
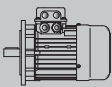
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
2.2	373.3	51	7.5	2210	2.5	**MRDV075**	**90L2**	63
	280	68	10	2433	2.1			
	186.7	98	15	2785	1.5			
	140	128	20	3065	1.3			
	112	156	25	3302	1			
	93.3	180	30	3509	0.9			
	186.7	101	7.5	3081	2.9	**MRDV090**	**100LA4**	64
	140	134	10	3391	2.3			
	93.3	194	15	3882	1.9			
	70	252	20	4273	1.4			
	56	308	25	4603	1.1			
	46.7	351	30	4891	1.2			
	120	156	7.5	3570	2.2	**MRDV090**	**112M6**	64
	90	203	10	3929	1.8			
	60	294	15	4498	1.4			
	45	378	20	4951	1			
	140	131	20	3391	2	**MRDV090**	**90L2**	64
	112	159	25	3653	1.6			
	93.3	185	30	3882	1.7			
	70	237	40	4273	1.2			
	56	285	50	4603	0.9			
	70	255	20	5399	2.5	**MRDV110**	**100LA4**	65
	56	315	25	5816	2.2			
	46.7	356	30	6181	2			
	35	468	40	6803	1.5			
	28	563	50	7328	1.2			
	23.3	648	60	7787	1			
	90	205	10	4965	3.5	**MRDV110**	**112M6**	65
	60	298	15	5684	2.6			
	45	388	20	6256	1.9			
	36	473	25	6739	1.6			
	30	532	30	7161	1.6			
	112	163	25	4616	3.1	**MRDV110**	**90L2**	65
	93.3	187	30	4905	3			
	70	246	40	5399	2.1	**MRDV110**	**90L2**	65
	56	296	50	5816	1.7			
	46.7	347	60	6181	1.4			
	38.6	398	73	6586	2.1	**PC090+MRDV110**	**90L2**	70
	28.9	516	96.8	7249	1.5			
	23.1	617	121	7809	1.2			
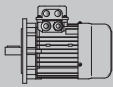
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
2.2	35	468	40	8897	2.2	**MRDV130**	**100LA4**	66
	28	563	50	9584	1.7			
	23.3	648	60	10185	1.4			
	17.5	816	80	11210	1			
	36	479	25	8814	2.2	**MRDV130**	**112M6**	66
	30	546	30	9366	2.1			
	22.5	700	40	10309	1.6			
	18	840	50	11105	1.2	**MRDV130**	**112M6**	66
	15	966	60	11801	1			
	35	438	80	8897	1.3	**MRDV130**	**90L2**	66
	28	525	100	9584	1			
	38.6	409	73	8614	2.9	**PC090+MRDV130**	**90L2**	70
	28.9	545	96.8	9481	2			
	23.1	654	121	10213	1.6			
	19.3	752	145.2	10853	1.3			
3	373.3	70	7.5	2210	1.9	**MRDV075**	**100L2**	63
	280	92	10	2433	1.6			
	186.7	137	7.5	2785	1.4	**MRDV075**	**100LB4**	63
	140	180	10	3065	1.1			
	93.3	261	15	3509	0.8			
	373.3	71	7.5	2446	3	**MRDV090**	**100L2**	64
	280	92	10	2692	2.6			
	186.7	138	7.5	3081	2.1	**MRDV090**	**100LB4**	64
	140	182	10	3391	1.7			
	93.3	264	15	3882	1.4			
	70	344	20	4273	1			
	56	420	25	4603	0.8			
	46.7	479	30	4891	0.9			
	93.3	264	15	4905	2.5	**MRDV110**	**100LB4**	64
	70	348	20	5399	1.9			
	56	430	25	5816	1.6			
	46.7	485	30	6181	1.5			
	35	638	40	6803	1.1			
	28	767	50	7328	0.9			
	120	212	7.5	4511	3.1	**MRDV110**	**132S6**	64
	90	280	10	4965	2.5			
	60	406	15	5684	1.9			
	45	528	20	6256	1.4			
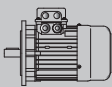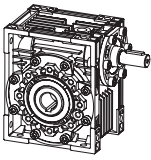
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i	Fr_2 [N]	fs			
3	56	430	25	7607	2.2	**MRDV130**	**100LB4**	66
	46.7	491	30	8084	2.1			
	35	638	40	8897	1.6			
	28	767	50	9584	1.3			
	23.3	884	60	10185	1			
	17.5	1113	80	11210	0.8			
	90	280	10	6494	3.4	**MRDV130**	**132S6**	66
	60	406	15	7434	2.6			
	45	535	20	8182	1.9	**MRDV130**	**132S6**	66
	36	653	25	8814	1.6	**MRDV130**	**132S6**	66
	30	745	30	9366	1.6			
	22.5	955	40	10309	1.2			
4	373.3	93	7.5	2210	1.4	**MRDV075**	**112M2**	63
	280	123	10	2433	1.2			
	186.7	182	7.5	2785	1	**MRDV075**	**112M4**	63
	140	240	10	3065	0.8			
	373.3	94	7.5	2446	2.2	**MRDV090**	**112M2**	64
	280	123	10	2692	1.9			
	186.7	184	7.5	3081	1.6	**MRDV090**	**112M4**	64
	140	243	10	3391	1.3			
	93.3	352	15	3882	1			
	70	458	20	4273	0.8			
	140	243	10	4285	2.5	**MRDV110**	**112M4**	65
	93.3	352	15	4905	1.9			
	70	464	20	5399	1.4			
	56	573	25	5816	1.2			
	46.7	647	30	6181	1.1			
	120	283	7.5	4511	2.3	**MRDV110**	**132MA6**	65
	90	374	10	4965	1.9			
	60	541	15	5684	1.4			
	56	573	25	7607	1.6	**MRDV130**	**112M4**	66
	46.7	655	30	8084	1.6			
	35	851	40	8897	1.2			
	28	1023	50	9584	1			
	23.3	1179	60	10185	0.8			
	120	287	7.5	5901	3.1	**MRDV130**	**132MA6**	66
	90	374	10	6494	2.6			
	60	541	15	7434	2			
	45	713	20	8182	1.5			
	36	870	25	8814	1.2			
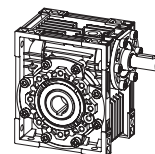
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i	Fr₂ [N]	fs			
5.5	186.7	253	7.5	3893	2.2	**MRDV110**	**132S4**	65
	140	334	10	4285	1.8			
	93.3	484	15	4905	1.4			
	70	638	20	5399	1			
	140	334	10	5605	2.5	**MRDV130**	**132S4**	66
	93.3	490	15	6416	1.9			
	70	645	20	7062	1.4			
	56	788	25	7607	1.2	**MRDV130**	**132S4**	66
	46.7	900	30	8084	1.2			
	35	1171	40	8897	0.9			
7.5	186.7	345	7.5	3893	1.6	**MRDV110**	**132M4**	65
	140	455	10	4285	1.3			
	93.3	660	15	4905	1			
	186.7	349	7.5	5092	2.1	**MRDV130**	**132M4**	66
	140	455	10	5605	1.8			
	93.3	668	15	6416	1.4			
	70	880	20	7062	1			
	56	1074	25	7607	0.9			
	46.7	1228	30	8084	0.8			
	35	1596	40	8897	0.7			

RDV (n_1=2800)

M_2 [Nm]	i	P_1 [Kw]	n_2 [min^{-1}]	Fr_2 [N]	Fr_1 [N]		
13	7.5	0.58	373.3	542	125	**RDV030**	59
13	10	0.45	280	597	140		
13	15	0.31	186.7	683	140		
12	20	0.23	140	752	146		
16	25	0.25	112	810	210		
15	30	0.21	93.3	861	210		
14	40	0.16	70	948	127		
13	50	0.12	56	1021	128		
12	60	0.1	46.7	1085	126		
11	80	0.08	35	1194	130		
28	7.5	1.2	373.3	1044	233	**RDV040**	60
29	10	1	280	1149	272		
31	15	0.72	186.7	1315	291		
29	20	0.52	140	1447	204		
28	25	0.42	112	1559	236		
34	30	0.44	93.3	1657	350		
31	40	0.32	70	1824	350		
30	50	0.26	56	1964	350		
28	60	0.21	46.7	2087	350		
25	80	0.16	35	2298	350		
23	100	0.12	28	2475	350		
52	7.5	2.3	373.3	1433	324	**RDV050**	61
54	10	1.8	280	1577	378		
57	15	1.3	186.7	1805	399		
53	20	0.95	140	1987	417		
51	25	0.75	112	2140	482		
64	30	0.82	93.3	2274	490		
59	40	0.59	70	2503	490		
53	50	0.45	56	2696	490		
50	60	0.37	46.7	2865	490		
45	80	0.27	35	3153	490		
40	100	0.21	28	3397	490		
93	7.5	4	373.3	1873	395	**RDV063**	62
97	10	3.2	280	2061	463		
103	15	2.3	186.7	2359	492		
100	20	1.7	140	2597	538		
92	25	1.3	112	2797	593		
120	30	1.5	93.3	2973	700		
108	40	1.1	70	3272	700		
100	50	0.83	56	3524	700		
95	60	0.68	46.7	3745	700		
85	80	0.49	35	4122	700		
74	100	0.37	28	4440	700		

RDV (n_1=2800)

M_2 [Nm]	i	P_1 [Kw]	n_2 [min^{-1}]	Fr_2 [N]	Fr_1 [N]		
130	7.5	5.6	373.3	2210	560	**RDV075**	63
145	10	4.7	280	2433	703		
150	15	3.4	186.7	2785	727		
160	20	2.8	140	3065	872		
150	25	2.1	112	3302	980		
170	30	2.1	93.3	3509	980		
165	40	1.6	70	3862	980		
150	50	1.2	56	4160	980		
145	60	1	46.7	4421	980		
130	80	0.72	35	4865	980		
120	100	0.58	28	5241	980		
210	7.5	8.9	373.3	2446	715	**RDV090**	64
235	10	7.7	280	2692	900		
270	15	6	186.7	3081	1034		
260	20	4.4	140	3391	1120		
250	25	3.4	112	3653	1270		
310	30	3.7	93.3	3882	1270		
275	40	2.6	70	4273	1270		
265	50	2	56	4603	1270		
245	60	1.6	46.7	4891	1270		
225	80	1.2	35	5383	1270		
200	100	0.9	28	5799	1270		
391	7.5	16.6	373.3	3090	950	**RDV110**	65
437	10	14.1	280	3401	1194		
489	15	10.7	186.7	3893	1337		
483	20	8	140	4285	1485		
506	25	6.8	112	4616	1700		
552	30	6.5	93.3	4905	1700		
529	40	4.7	70	5399	1700		
495	50	3.7	56	5816	1700		
473	60	3	46.7	6181	1700		
399	80	2	35	6803	1700		
368	100	1.6	28	7328	1700		
520	7.5	22.1	373.3	4042	1190	**RDV130**	66
580	10	18.7	280	4449	1493		
670	15	14.7	186.7	5092	1725		
660	20	11	140	5605	1912		
670	25	9	112	6038	2100		
770	30	9	93.3	6416	2100		
730	40	6.5	70	7062	2100		
700	50	5.1	56	7607	2100		
640	60	4	46.7	8084	2100		
590	80	3	35	8897	2100		
520	100	2.2	28	9584	2100		
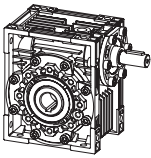
RDV (n_1=1400)

M_2 [Nm]	i	P_1 [Kw]	n_2 [min^{-1}]	Fr_2 [N]	Fr_1 [N]		
18	7.5	0.41	186.7	683	150	**RDV030**	59
18	10	0.32	140	752	169		
18	15	0.23	93.3	861	169		
18	20	0.18	70	948	190		
21	25	0.18	56	1021	210		
20	30	0.15	46.7	1085	210		
18	40	0.11	35	1194	210		
17	50	0.09	28	1286	210		
16	60	0.08	23.3	1367	210		
13	80	0.05	17.5	1504	210		
40	7.5	0.9	186.7	1315	294	**RDV040**	60
40	10	0.69	140	1447	331		
40	15	0.48	93.3	1657	331		
39	20	0.37	70	1824	350		
38	25	0.3	56	1964	350		
38	25	0.3	56	1964	350		
45	30	0.31	46.7	2087	350		
41	40	0.23	35	2298	350		
39	50	0.18	28	2475	350		
36	60	0.15	23.3	2630	350		
33	80	0.12	17.5	2895	350		
29	100	0.09	14	3118	350		
71	7.5	1.6	186.7	1805	401	**RDV050**	61
72	10	1.2	140	1987	490		
74	15	0.88	93.3	2274	490		
73	20	0.68	70	2503	490		
70	25	0.54	56	2696	490		
84	30	0.57	46.7	2865	490		
76	40	0.42	35	3153	490		
73	50	0.34	28	3397	490		
68	60	0.28	23.3	3610	490		
65	80	0.22	17.5	3973	490		
55	100	0.16	14	4280	490		
128	7.5	2.8	186.7	2359	500	**RDV063**	62
130	10	2.2	140	2597	571		
140	15	1.6	93.3	2973	615		
135	20	1.2	70	3272	667		
130	25	1	56	3524	700		
160	30	1.1	46.7	3745	700		
145	40	0.76	35	4122	700		
135	50	0.6	28	4440	700		
130	60	0.51	23.3	4719	700		
122	80	0.39	17.5	5193	700		
118	100	0.34	14	5595	700		
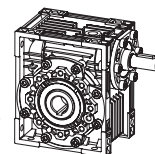
RDV (n1=1400)

M2 [Nm]	i	P1 [Kw]	n2 [min⁻¹]	Fr2 [N]	Fr1 [N]		
185	7.5	4.1	186.7	2785	700	**RDV075**	63
195	10	3.2	140	3065	830		
200	15	2.3	93.3	3509	851		
210	20	1.9	70	3862	980		
200	25	1.5	56	4160	980		
230	30	1.5	46.7	4421	980		
220	40	1.1	35	4865	980		
210	50	0.89	28	5241	980		
200	60	0.75	23.3	5569	980		
190	80	0.58	17.5	6130	980		
180	100	0.48	14	6603	980		
290	7.5	6.3	186.7	3081	900	**RDV090**	64
310	10	5.1	140	3391	1082		
360	15	4.1	93.3	3882	1257		
355	20	3.1	70	4273	1270		
340	25	2.4	56	4603	1270		
410	30	2.6	46.7	4891	1270		
360	40	1.8	35	5383	1270		
340	50	1.4	28	5799	1270		
320	60	1.1	23.3	6163	1270		
285	80	0.83	17.5	6783	1270		
270	100	0.67	14	7306	1270		
552	7.5	12	186.7	3893	1200	**RDV110**	65
598	10	9.8	140	4285	1463		
656	15	7.5	93.3	4905	1604		
644	20	5.6	70	5399	1700		
679	25	4.7	56	5816	1700		
725	30	4.5	46.7	6181	1700		
702	40	3.3	35	6803	1700		
660	50	2.6	28	7328	1700		
616	60	2.1	23.3	7787	1700		
515	80	1.4	17.5	8571	1700		
483	100	1.1	14	9232	1700		
750	7.5	16.1	186.7	5092	1500	**RDV130**	66
820	10	13.5	140	5605	1845		
920	15	10.3	93.3	6416	2070		
910	20	7.8	70	7062	2100		
930	25	6.5	56	7607	2100		
1040	30	6.4	46.7	8084	2100		
1050	40	4.9	35	8897	2100		
980	50	3.8	28	9584	2100		
900	60	3.1	23.3	10185	2100		
840	80	2.3	17.5	11210	2100		
740	100	1.7	14	12076	2100		
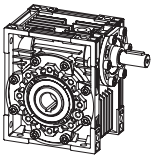
RDV (n₁=900)

M₂ [Nm]	i	P₁ [Kw]	n₂ [min⁻¹]	Fr₂ [N]	Fr₁ [N]		
20	7.5	0.3	120	792	175	**RDV030**	59
20	10	0.24	90	871	197		
20	15	0.17	60	997	197		
20	20	0.13	45	1098	210		
23	25	0.14	36	1183	210		
21	30	0.11	30	1257	210		
20	40	0.09	22.5	1383	210		
18	50	0.07	18	1490	210		
17	60	0.06	15	1583	210		
15	80	0.04	11.3	1743	210		
44	7.5	0.65	120	1524	319	**RDV040**	60
44	10	0.5	90	1677	350		
45	15	0.36	60	1920	350		
44	20	0.28	45	2113	350		
43	25	0.23	36	2276	350		
49	30	0.23	30	2419	350		
45	40	0.17	22.5	2662	350		
42	50	0.14	18	2868	350		
39	60	0.11	15	3047	350		
35	80	0.09	11.3	3354	350		
32	100	0.07	9	3490	350		
84	7.5	1.2	120	2091	448	**RDV050**	61
84	10	0.94	90	2302	490		
84	15	0.67	60	2635	490		
77	20	0.48	45	2900	490		
75	25	0.39	36	3124	490		
90	30	0.42	30	3320	490		
82	40	0.31	22.5	3654	490		
77	50	0.25	18	3936	490		
72	60	0.21	15	4183	490		
68	80	0.16	11.3	4604	490		
56	100	0.12	9	4840	490		
151	7.5	2.2	120	2734	580	**RDV063**	62
153	10	1.7	90	3009	661		
155	15	1.2	60	3444	670		
148	20	0.91	45	3791	700		
137	25	0.69	36	4084	700		
175	30	0.79	30	4339	700		
160	40	0.58	22.5	4776	700		
145	50	0.45	18	5145	700		
138	60	0.37	15	5467	700		
128	80	0.29	11.3	6018	700		
124	100	0.25	9	6270	700		
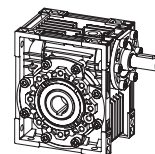
RDV (n₁=900)

M₂ [Nm]	i	P₁ [Kw]	n₂ [min⁻¹]	Fr₂ [N]	Fr₁ [N]		
215	7.5	3.1	120	3227	810	**RDV075**	63
230	10	2.5	90	3551	975		
235	15	1.8	60	4065	980		
235	20	1.4	45	4474	980		
215	25	1.1	36	4820	980		
260	30	1.1	30	5122	980		
240	40	0.83	22.5	5637	980		
220	50	0.65	18	6073	980		
210	60	0.54	15	6453	980		
200	80	0.43	11.3	7103	980		
190	100	0.36	9	7380	980		
340	7.5	4.8	120	3570	1040	**RDV090**	64
370	10	4	90	3929	1270		
420	15	3.1	60	4498	1270		
390	20	2.3	45	4951	1270		
370	25	1.8	36	5333	1270		
460	30	1.9	30	5667	1270		
410	40	1.4	22.5	6238	1270		
390	50	1.1	18	6719	1270		
350	60	0.86	15	7140	1270		
315	80	0.63	11.3	7859	1270		
280	100	0.49	9	8180	1270		
650	7.5	9.2	120	4511	1390	**RDV110**	65
713	10	7.6	90	4965	1700		
759	15	5.6	60	5684	1700		
725	20	4.1	45	6256	1700		
759	25	3.5	36	6739	1700		
840	30	3.5	30	7161	1700		
794	40	2.5	22.5	7882	1700		
748	50	2	18	8491	1700		
682	60	1.6	15	9023	1700		
567	80	1.1	11.3	9931	1700		
515	100	0.84	9	10320	1700		
880	7.5	12.3	120	5901	1740	**RDV130**	66
960	10	10.3	90	6494	2100		
1060	15	7.8	60	7434	2100		
1040	20	5.8	45	8182	2100		
1050	25	4.8	36	8814	2100		
1170	30	4.7	30	9366	2100		
1100	40	3.5	22.5	10309	2100		
1050	50	2.7	18	11105	2100		
940	60	2.1	15	11801	2100		
860	80	1.6	11.3	12989	2100		
780	100	1.2	9	13500	2100		
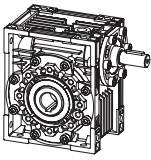
RDV (n_1=500)

M_2 [Nm]	i	P_1 [Kw]	n_2 [min^{-1}]	Fr_2 [N]	Fr_1 [N]		
24	7.5	0.21	66.7	963	210	**RDV030**	59
24	10	0.16	50	1060	210		
24	15	0.12	33.3	1213	210		
23	20	0.09	25	1336	210		
29	25	0.1	20	1439	210		
26	30	0.08	16.7	1529	210		
23	40	0.06	12.5	1683	210		
21	50	0.05	10	1813	210		
19	60	0.04	8.3	1830	210		
17	80	0.03	6.3	1830	210		
54	7.5	0.45	66.7	1853	350	**RDV040**	60
54	10	0.35	50	2040	350		
55	15	0.26	33.3	2335	350		
52	20	0.19	25	2570	350		
49	25	0.15	20	2769	350		
58	30	0.16	16.7	2942	350		
53	40	0.12	12.5	3238	350		
49	50	0.1	10	3488	350		
46	60	0.08	8.3	3490	350		
40	80	0.06	6.3	3490	350		
36	100	0.05	5	3490	350		
103	7.5	0.86	66.7	2544	490	**RDV050**	61
103	10	0.67	50	2800	490		
103	15	0.47	33.3	3205	490		
93	20	0.33	25	3528	490		
91	25	0.28	20	3800	490		
108	30	0.29	16.7	4038	490		
98	40	0.22	12.5	4445	490		
91	50	0.17	10	4788	490		
83	60	0.14	8.3	4840	490		
75	80	0.11	6.3	4840	490		
65	100	0.09	5	4840	490		
184	7.5	1.5	66.7	3325	700	**RDV063**	62
185	10	1.2	50	3660	700		
187	15	0.85	33.3	4190	700		
178	20	0.63	25	4611	700		
164	25	0.48	20	4967	700		
200	30	0.54	16.7	5279	700		
185	40	0.4	12.5	5810	700		
173	50	0.32	10	6259	700		
160	60	0.26	8.3	6270	700		
137	80	0.19	6.3	6270	700		
128	100	0.16	5	6270	700		
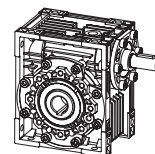
RDV (n1=500)

M2 [Nm]	i	P1 [Kw]	n2 [min⁻¹]	Fr2 [N]	Fr1 [N]		
260	7.5	2.1	66.7	3925	980	**RDV075**	63
270	10	1.7	50	4320	980		
280	15	1.2	33.3	4945	980		
285	20	0.98	25	5443	980		
255	25	0.73	20	5863	980		
300	30	0.77	16.7	6231	980		
280	40	0.58	12.5	6858	980		
250	50	0.44	10	7380	980		
240	60	0.37	8.3	7380	980		
215	80	0.29	6.3	7380	980		
210	100	0.24	5	7380	980		
410	7.5	3.3	66.7	4343	1270	**RDV090**	64
435	10	2.7	50	4780	1270		
490	15	2.1	33.3	5472	1270		
470	20	1.6	25	6022	1270		
440	25	1.2	20	6487	1270		
550	30	1.4	16.7	6894	1270		
480	40	0.95	12.5	7588	1270		
450	50	0.75	10	8174	1270		
400	60	0.59	8.3	8180	1270		
365	80	0.45	6.3	8180	1270		
330	100	0.35	5	8180	1270		
794	7.5	6.4	66.7	5488	1700	**RDV110**	65
851	10	5.2	50	6040	1700		
909	15	3.9	33.3	6914	1700		
863	20	2.8	25	7610	1700		
909	25	2.4	20	8198	1700		
1000	30	2.4	16.7	8711	1700		
932	40	1.7	12.5	9588	1700		
880	50	1.4	10	10320	1700		
781	60	1.1	8.3	10320	1700		
662	80	0.76	6.3	10320	1700		
599	100	0.59	5	10320	1700		
1080	7.5	8.6	66.7	7178	2100	**RDV130**	66
1160	10	7.1	50	7900	2100		
1300	15	5.5	33.3	9043	2100		
1230	20	4	25	9953	2100		
1200	25	3.2	20	10722	2100		
1400	30	3.3	16.7	11394	2100		
1300	40	2.4	12.5	12540	2100		
1220	50	1.9	10	13500	2100		
1070	60	1.5	8.3	13500	2100		
970	80	1.1	6.3	13500	2100		
860	100	0.85	5	13500	2100		

RDV + MRDV (n₁=1400)

M₂ [Nm]	i	P₁ [Kw]	n₂ [min⁻¹]	Fr₂ [N]	Fr₁ [N]		
73	300	0.08	4.7	3490	210	**RDV030+040**	72
65	400	0.06	3.5	3490	210		
61	500	0.04	2.8	3490	210		
73	600	0.04	2.3	3490	210		
73	750	0.04	1.9	3490	210		
73	900	0.03	1.6	3490	210		
65	1200	0.02	1.2	3490	210		
73	1500	0.02	0.9	3490	210		
73	1800	0.02	0.8	3490	210		
65	2400	0.01	0.58	3490	210		
65	3200	0.01	0.4	3490	210		
33	4000	0.01	0.4	3490	210		
29	5000	0.01	0.28	3490	210		
145	300	0.15	4.7	4840	210	**RDV030+050**	72
124	400	0.1	3.5	4840	210		
120	500	0.09	2.8	4840	210		
145	600	0.08	2.3	4840	210		
145	750	0.07	1.9	4840	210		
145	900	0.06	1.6	4840	210		
124	1200	0.04	1.2	4840	210		
145	1500	0.04	0.93	4840	210		
145	1800	0.04	0.78	4840	210		
124	2400	0.03	0.6	4840	210		
120	3000	0.02	0.5	4840	210		
82	4000	0.02	0.35	4840	210		
82	4800	0.02	0.29	4840	210		
230	300	0.24	4.7	6270	210	**RDV030+063**	72
230	400	0.19	3.5	6270	210		
216	500	0.15	2.8	6270	210		
230	600	0.13	2.3	6270	210		
216	750	0.11	1.9	6270	210		
198	900	0.09	1.6	6270	210		
230	1200	0.08	1.2	6270	210		
216	1500	0.06	0.93	6270	210		
198	1800	0.05	0.78	6270	210		
230	2400	0.05	0.58	6270	210		
216	3000	0.04	0.47	6270	210		
172	4000	0.03	0.35	6270	210		
150	5000	0.02	0.28	6270	210		
390	300	0.36	4.7	7380	350	**RDV040+075**	73
360	400	0.27	3.5	7380	350		
320	500	0.21	2.8	7380	350		
390	600	0.19	2.3	7380	350		
390	750	0.16	1.9	7380	350		
390	900	0.14	1.6	7380	350		
360	1200	0.11	1.2	7380	350		
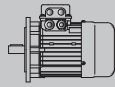
RDV / MRDV (n_1=1400)

M_2 [Nm]	i	P_1 [Kw]	n_2 [min^{-1}]	Fr_2 (N)	Fr_1 [N]		
390	1500	0.1	0.93	7380	350	RDV040+075	73
390	1800	0.09	0.78	7380	350		
360	2400	0.07	0.58	7380	350		
320	3000	0.05	0.47	7380	350		
250	4000	0.04	0.35	7380	350		
230	5000	0.03	0.28	7380	350		
610	300	0.56	4.7	8180	350	RDV040+090	73
610	400	0.43	3.5	8180	350		
560	500	0.34	2.8	8180	350		
610	600	0.3	2.3	8180	350		
560	750	0.23	1.9	8180	350		
505	900	0.19	1.6	8180	350		
610	1200	0.17	1.2	8180	350		
560	1500	0.14	0.93	8180	350		
505	1800	0.11	0.78	8180	350	RDV040+090	73
610	2400	0.11	0.58	8180	350		
560	3000	0.08	0.47	8180	350		
460	4000	0.08	0.35	8180	350		
410	5000	0.06	0.28	8180	350		
1265	300	1.1	4.7	10320	490	RDV050+110	73
1185	400	0.79	3.5	10320	490		
1100	500	0.61	2.8	10320	490		
1185	600	0.55	2.3	10320	490		
1265	750	0.49	1.9	10320	490		
1265	900	0.43	1.6	10320	490		
1185	1200	0.31	1.2	10320	490		
1265	1500	0.3	0.93	10320	490		
1265	1800	0.26	0.78	10320	490		
1185	2400	0.19	0.58	10320	490		
1100	3000	0.15	0.47	10320	490		
819	4000	0.13	0.35	10320	490		
746	5000	0.1	0.28	10320	490		
1760	300	1.5	4.7	13500	700	RDV063+130	74
1650	400	1.1	3.5	13500	700		
1550	500	0.86	2.8	13500	700		
1650	600	0.76	2.3	13500	700		
1760	750	0.66	1.9	13500	700		
1760	900	0.58	1.6	13500	700		
1650	1200	0.43	1.2	13500	700		
1760	1500	0.39	0.93	13500	700		
1760	1800	0.35	0.78	13500	700		
1650	2400	0.25	0.58	13500	700		
1550	3000	0.2	0.47	13500	700		
1220	4000	0.15	0.35	13500	700		
1100	5000	0.11	0.28	13500	700		
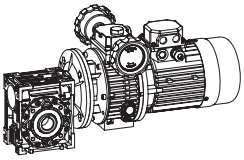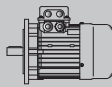
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i			
0.18	117 ~ 22.5	9 ~ 18	12 ~ 61.5	**UDL0.18-MRDV040**	**6324**	60 & 75
	88 ~ 17	12 ~ 23	16 ~ 82			
	58.7 ~ 11.3	17 ~ 32	24 ~ 123			
	44 ~ 8.5	22 ~ 40	32 ~ 164			
	35.2 ~ 6.8	27 ~ 47	40 ~ 205			
	29.3 ~ 5.7	30 ~ 51	48 ~ 246			
	22 ~ 4.3	37 ~ 62	64 ~ 328			
	17.6 ~ 3.4	43 ~ 60	80 ~ 410			
	22 ~ 4.3	38 ~ 63	64 ~ 328	**UDL0.18-MRDV050**	**6324**	61 & 75
	17.6 ~ 3.4	44 ~ 73	80 ~ 410			
	14.7 ~ 2.8	50 ~ 80	96 ~ 492			
	11 ~ 2.1	59 ~ 82	128 ~ 656			
	8.8 ~ 1.7	66 ~ 79	160 ~ 820			
0.37	133 ~ 26.7	19 ~ 36	10.5 ~ 52.5	**UDL0.37-MRDV050**	**7124**	61 & 75
	100 ~ 20	25 ~ 47	14 ~ 70			
	66.7 ~ 13.3	36 ~ 65	21 ~ 105			
	50 ~ 10	46 ~ 82	28 ~ 140			
	40 ~ 8	55 ~ 97	35 ~ 175			
	33.3 ~ 6.7	61 ~ 107	42 ~ 210			
	25 ~ 5	76 ~ 124	56 ~ 280			
	20 ~ 4	89 ~ 120	70 ~ 350			
	25 ~ 5	79 ~ 134	56 ~ 280	**UDL0.37-MRDV063**	**7124**	62 & 75
	20 ~ 4	92 ~ 155	70 ~ 350			
	16.7 ~ 3.3	104 ~ 173	84 ~ 420			
	12.5 ~ 2.5	125 ~ 173	112 ~ 560			
	10 ~ 2	139 ~ 150	140 ~ 700			
0.55	133 ~ 26.7	26 ~ 49	10.5 ~ 52.5	**UDL0.55-MRDV063**	**8014**	62 & 75
	100 ~ 20	34 ~ 63	14 ~ 70			
	66.7 ~ 13.3	48 ~ 88	21 ~ 105			
	50 ~ 10	62 ~ 112	28 ~ 140			
	40 ~ 8	75 ~ 133	35 ~ 175			
	33.3 ~ 6.7	81 ~ 146	42 ~ 210			
	25 ~ 5	105 ~ 179	56 ~ 280			
	20 ~ 4	123 ~ 207	70 ~ 350			
	20 ~ 4	129 ~ 216	70 ~ 350	**UDL0.55-MRDV075**	**8014**	63 & 75
	16.7 ~ 3.3	146 ~ 242	84 ~ 420			
	12.5 ~ 2.5	176 ~ 250	112 ~ 560			
	12.5 ~ 2.5	189 ~ 309	112 ~ 560	**UDL0.55-MRDV090**	**8014**	64 & 75
	10 ~ 2	218 ~ 350	140 ~ 700			
0.75	133 ~ 26.7	39 ~ 73	10.5 ~ 52.5	**UDL0.75-MRDV063**	**8024**	62 & 75
	100 ~ 20	51 ~ 94	14 ~ 70			
	66.7 ~ 13.3	72 ~ 132	21 ~ 105			
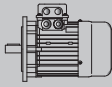
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	i			
0.75	50 ～ 10	92 ～ 168	28 ～ 140	**UDL0.75-MRDV063**	**8024**	62 & 75
	40 ～ 8	112 ～ 199	35 ～ 175			
	33.3 ～ 6.7	126 ～ 219	42 ～ 210			
	25 ～ 5	156 ～ 232	56 ～ 280			
	20 ～ 4	185 ～ 310	70 ～ 350			
	20 ～ 4	192 ～ 320	70 ～ 350	**UDL0.75-MRDV075**	**8024**	63 & 75
	16.7 ～ 3.3	219 ～ 300	84 ～ 420			
	16.7 ～ 3.3	230 ～ 389	84 ～ 420	**UDL0.75-MRDV090**	**8024**	64 & 75
	12.5 ～ 2.5	265 ～ 428	112 ～ 560			
	10 ～ 2	303 ～ 410	140 ～ 700			
	12.5 ～ 2.5	302 ～ 503	112 ～ 560	**UDL0.75-MRDV110**	**8024**	65 & 75
	10 ～ 2	348 ～ 575	140 ～ 700			
1.1	133 ～ 26.7	59 ～ 111	10.5 ～ 52.5	**UD1.1-MRDV075**	**90S4**	63 & 75
	100 ～ 20	77 ～ 144	14 ～ 70			
	66.7 ～ 13.3	110 ～ 203	21 ～ 105			
	50 ～ 10	142 ～ 258	28 ～ 140			
	40 ～ 8	172 ～ 308	35 ～ 175			
	33.3 ～ 6.7	195 ～ 340	42 ～ 210			
	25 ～ 5	245 ～ 360	56 ～ 280			
	100 ～ 20	78 ～ 146	14 ～ 70	**UD1.1-MRDV090**	**90S4**	64 & 75
	66.7 ～ 13.3	113 ～ 208	21 ～ 105			
	50 ～ 10	146 ～ 266	28 ～ 140			
	40 ～ 8	177 ～ 320	35 ～ 175			
	33.3 ～ 6.7	202 ～ 356	42 ～ 210			
	25 ～ 5	256 ～ 442	56 ～ 280			
	20 ～ 4	304 ～ 517	70 ～ 350			
	20 ～ 4	320 ～ 550	70 ～ 350	**UD1.1-MRDV110**	**90S4**	65 & 75
	16.7 ～ 3.3	368 ～ 625	84 ～ 420			
	12.5 ～ 2.5	455 ～ 754	112 ～ 560			
	10 ～ 2	522 ～ 710	140 ～ 700			
	16.7 ～ 3.3	373 ～ 623	84 ～ 420	**UD1.1-MRDV130**	**90S4**	66 & 75
	12.5 ～ 2.5	460 ～ 749	112 ～ 560			
	10 ～ 2	531 ～ 868	140 ～ 700			
1.5	133 ～ 26.7	78 ～ 148	10.5 ～ 52.5	**UD1.5-MRDV075**	**90L4**	63 & 75
	100 ～ 20	102 ～ 192	14 ～ 70			
	66.7 ～ 13.3	147 ～ 270	21 ～ 105			
	50 ～ 10	190 ～ 344	28 ～ 140			
	40 ～ 8	229 ～ 330	35 ～ 175			
	33.3 ～ 6.7	260 ～ 390	42 ～ 210			
	25 ～ 5	327 ～ 360	56 ～ 280			
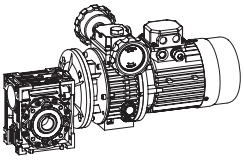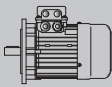
P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i			
1.5	133 ~ 26.7	77 ~ 150	10.5 ~ 52.5	**UD1.5-MRDV090**	**90L4**	64 & 75
	100 ~ 20	104 ~ 195	14 ~ 70			
	66.7 ~ 13.3	150 ~ 277	21 ~ 105			
	50 ~ 10	194 ~ 355	28 ~ 140			
	40 ~ 8	236 ~ 427	35 ~ 175			
	33.3 ~ 6.7	270 ~ 474	42 ~ 210			
	25 ~ 5	341 ~ 589	56 ~ 280			
	20 ~ 4	406 ~ 560	70 ~ 350			
	20 ~ 4	426 ~ 733	70 ~ 350	**UD1.5-MRDV110**	**90L4**	65 & 75
	16.7 ~ 3.3	490 ~ 833	84 ~ 420			
	16.7 ~ 3.3	498 ~ 831	84 ~ 420	**UD1.5-MRDV130**	**90L4**	66 & 75
	12.5 ~ 2.5	614 ~ 999	112 ~ 560			
	10 ~ 2	696 ~ 1100	140 ~ 700			
2.2	133 ~ 26.7	120 ~ 226	10.5 ~ 52.5	**UD2.2-MRDV110**	**100LA4**	65 & 75
	100 ~ 20	157 ~ 294	14 ~ 70			
	66.7 ~ 13.3	228 ~ 418	21 ~ 105			
	50 ~ 10	298 ~ 549	28 ~ 140			
	40 ~ 8	364 ~ 664	35 ~ 175			
	33.3 ~ 6.7	413 ~ 717	42 ~ 210			
	25 ~ 5	533 ~ 931	56 ~ 280			
	25 ~ 5	542 ~ 932	56 ~ 280	**UD2.2-MRDV130**	**100LA4**	66 & 75
	20 ~ 4	648 ~ 1097	70 ~ 350			
	16.7 ~ 3.3	746 ~ 1246	84 ~ 420			
	12.5 ~ 2.5	921 ~ 1499	112 ~ 560			
	10 ~ 2	1040 ~ 1690	140 ~ 700			
3	133 ~ 26.7	160 ~ 302	10.5 ~ 52.5	**UD3.0-MRDV110**	**100LB4**	65 & 75
	100 ~ 20	210 ~ 392	14 ~ 70			
	66.7 ~ 13.3	304 ~ 558	21 ~ 105			
	50 ~ 10	398 ~ 732	28 ~ 140			
	40 ~ 8	485 ~ 885	35 ~ 175			
	33.3 ~ 6.7	547 ~ 956	42 ~ 210			
	25 ~ 5	711 ~ 1030	56 ~ 280			
	133 ~ 26.7	160 ~ 301	10.5 ~ 52.5	**UD3.0-MRDV130**	**100LB4**	66 & 75
	100 ~ 20	211 ~ 395	14 ~ 70			
	66.7 ~ 13.3	307 ~ 563	21 ~ 105			
	50 ~ 10	402 ~ 733	28 ~ 140			
	40 ~ 8	490 ~ 885	35 ~ 175			
	33.3 ~ 6.7	562 ~ 973	42 ~ 210			
	25 ~ 5	720 ~ 1242	56 ~ 280			
	20 ~ 4	864 ~ 1463	70 ~ 350			

P₁ [kW]	n₂ [min⁻¹]	M₂ [Nm]	i			
4	133 ~ 26.7	213 ~ 402	10.5 ~ 52.5	**UD4.0-MRDV11**	**112M4**	65 & 75
	100 ~ 20	279 ~ 523	14 ~ 70			
	66.7 ~ 13.3	405 ~ 744	21 ~ 105			
	50 ~ 10	530 ~ 975	28 ~ 140			
	40 ~ 8	647 ~ 1020	35 ~ 175			
	133 ~ 26.7	214 ~ 401	10.5 ~ 52.5	**UD4.0-MRDV13**	**112M4**	66 & 75
	100 ~ 20	281 ~ 527	14 ~ 70			
	66.7 ~ 13.3	410 ~ 751	21 ~ 105			
	50 ~ 10	536 ~ 978	28 ~ 140			
	40 ~ 8	653 ~ 1180	35 ~ 175			
	33.3 ~ 6.7	749 ~ 1298	42 ~ 210			
	25 ~ 5	960 ~ 1650	56 ~ 280			
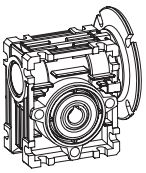
Riduttori Vite Senza Fine - (MRDV/RDV)
Worm-gear speed reducer (MRDV/RDV)

MRDV 025
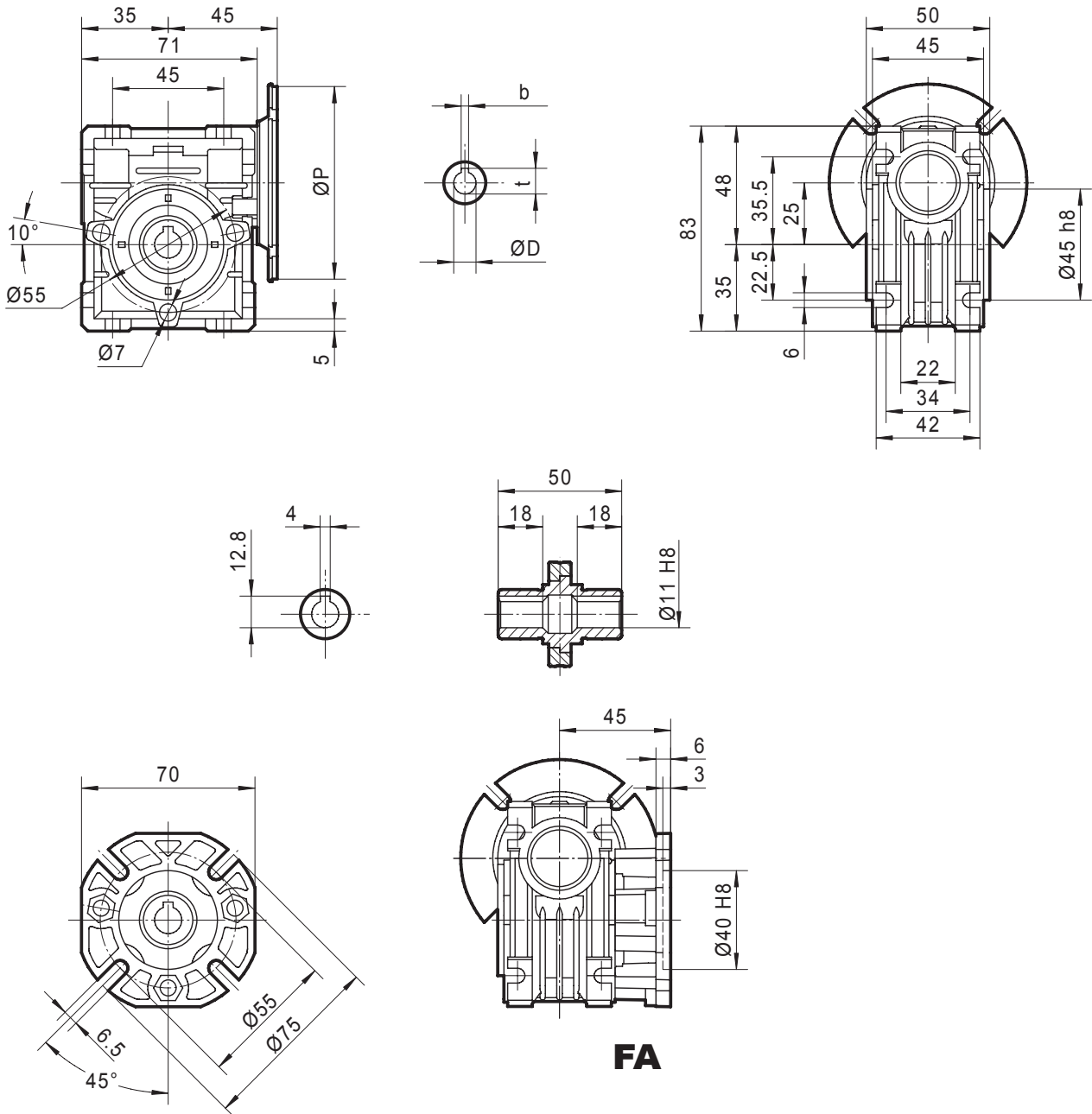
Peso senza motore ≈ 0.7 kg

Weight without motor ≈ 0.7 kg

Per le dimensioni dei motori, dati (P, D, b, t), consultare la tabella a pag. 78

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

MRDV **030**

Ø65
Ø75
M6x11
5.5
40
55
81
54
ØP
b
t
ØD

63
58
97
57
44
30
40
27
6.5
32
44
56
Ø55h8

20
45
3
10.2
Ø9 j6
E

16.3
5
63
21
21
Ø14H8

70
Ø68
Ø80
6.5
45°

54.5
6
4
Ø50 H8
FA
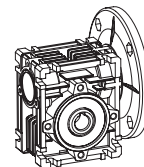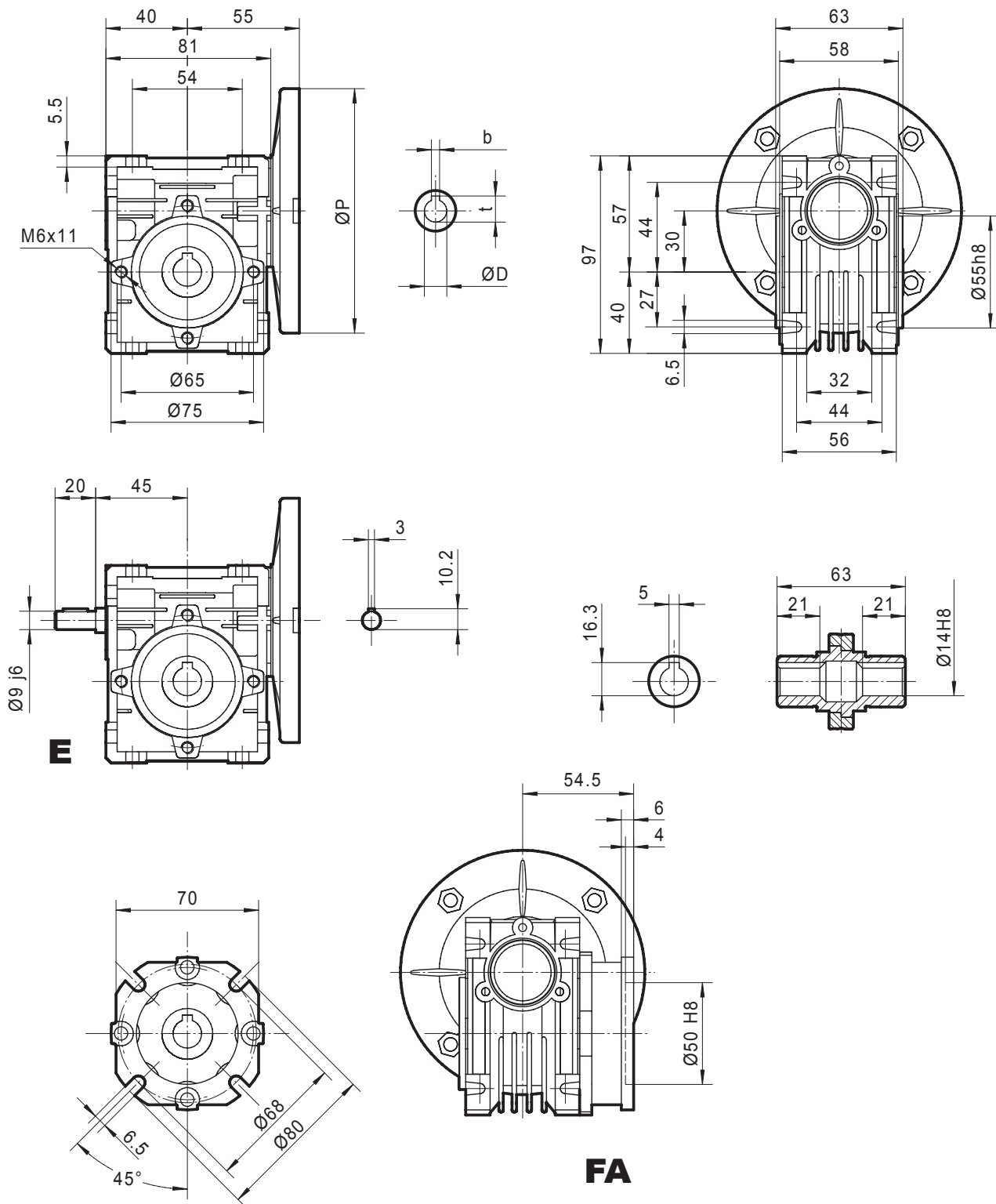
Peso senza motore **≈ 1.2 kg**

Weight without motor ≈ 1.2 kg

Per le dimensioni dei motori, dati (P, D, b, t)，riferirsi alla tabella a pag 78.

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

MRDV **040**

E

FA

FB

FC

FD
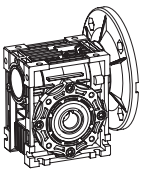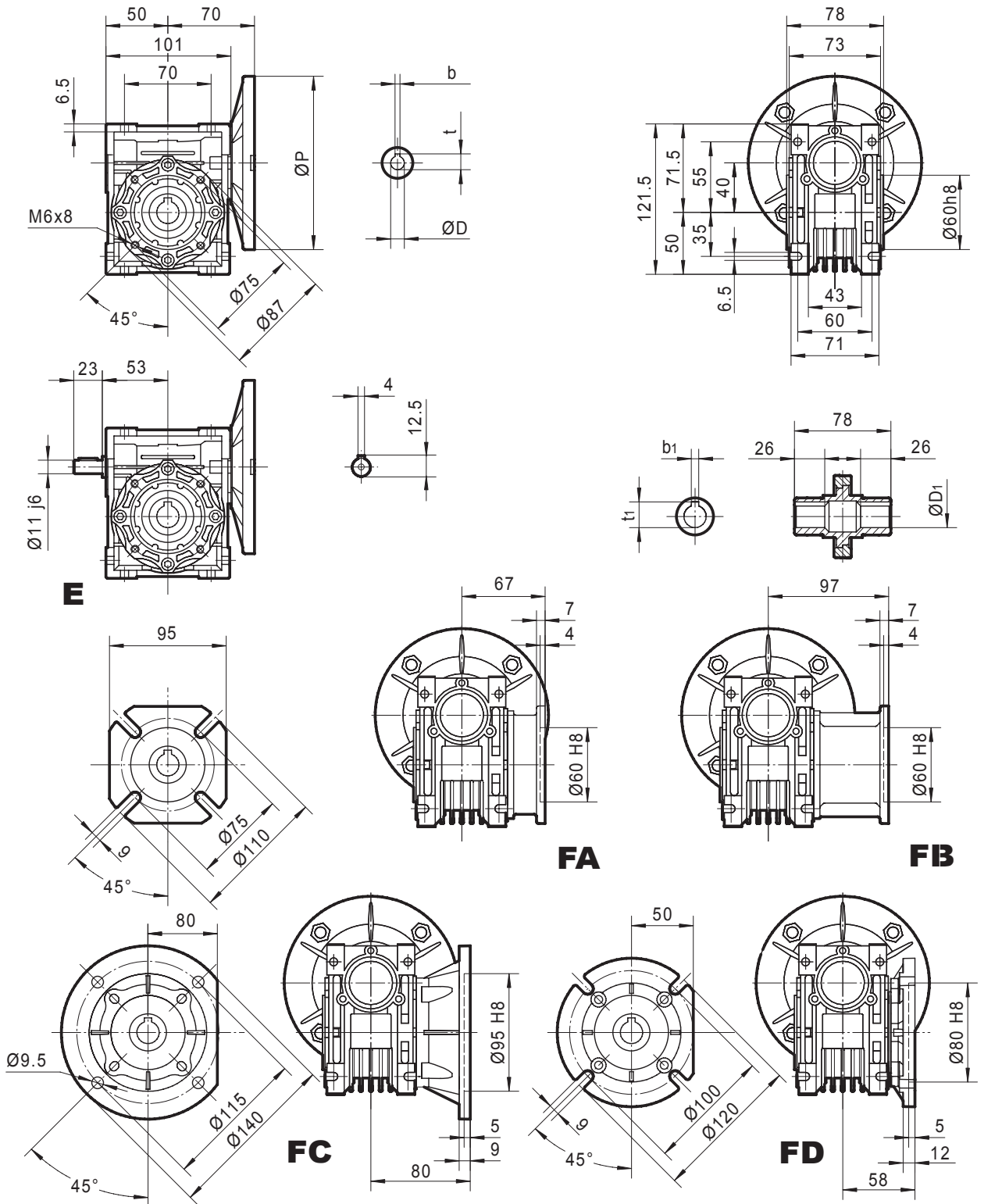
Peso senza motore ≈ 2.3 kg   Weight without motor ≈ 2.3 kg

Per i dati dei motori (P, D, b, t),   riferirsi alla tab. pag.78

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

Albero in uscita		Output size
Ø**D₁** H8	**b₁**	**t₁**
Ø18	6	20.8
Ø19*	6 *	21.8 *

(*) modello non standard
(*) Nonstandard model
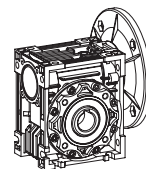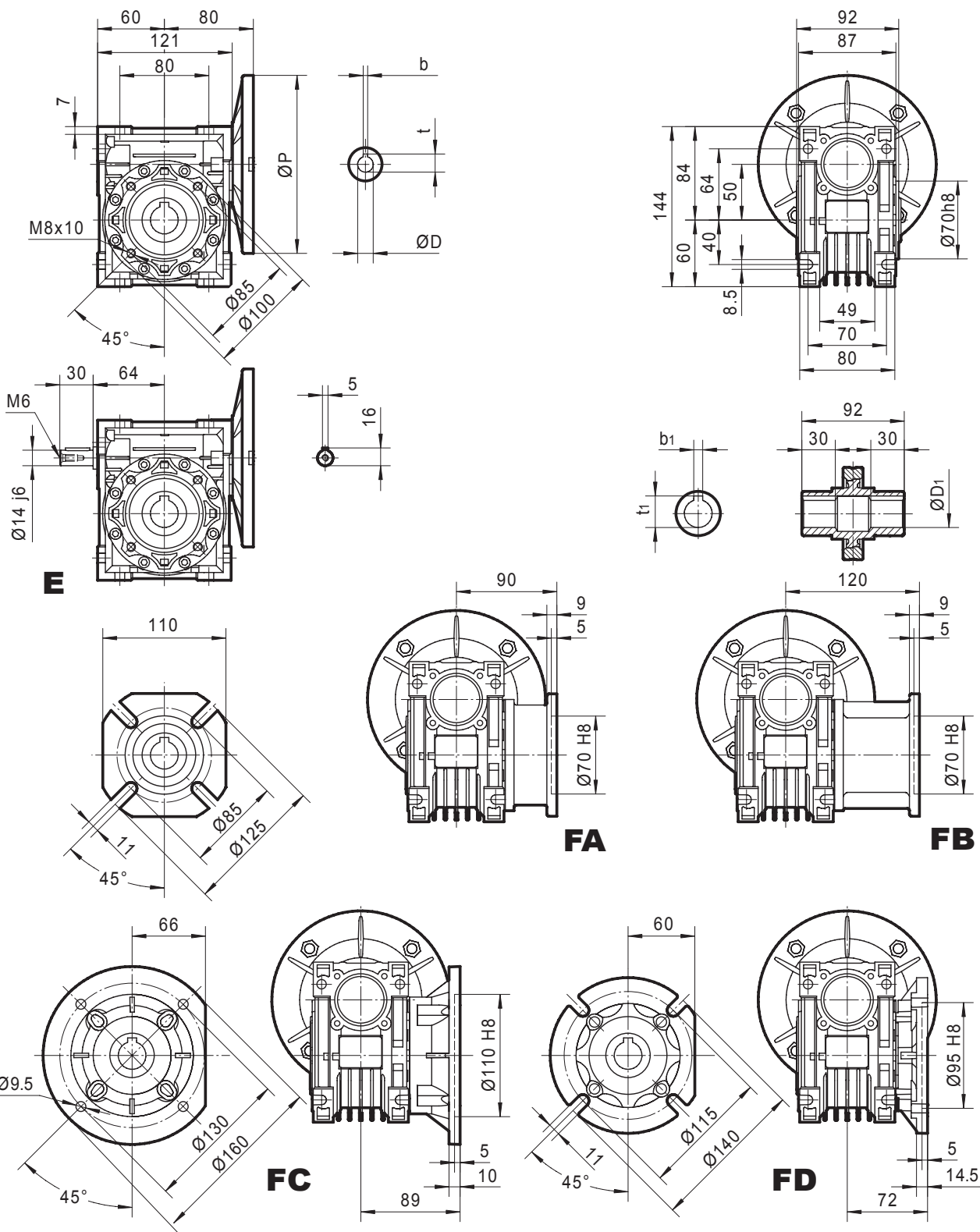
MRDV **050**

E

FA

FB

FC

FD

Peso senza motore ≈ 3.5 kg   Weight without motor ≈ 3.5 kg

Per i dati dei motori (P, D, b, t),   **riferirsi alla tab. pag. 78**

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

ØD₁ H8	b₁	t₁
Ø25	8	28.3
Ø24*	8*	27.3*

(*) Modello non standard
(*) Nonstandard model

MRDV **063**

FA

FB

FC

FD

FE
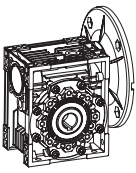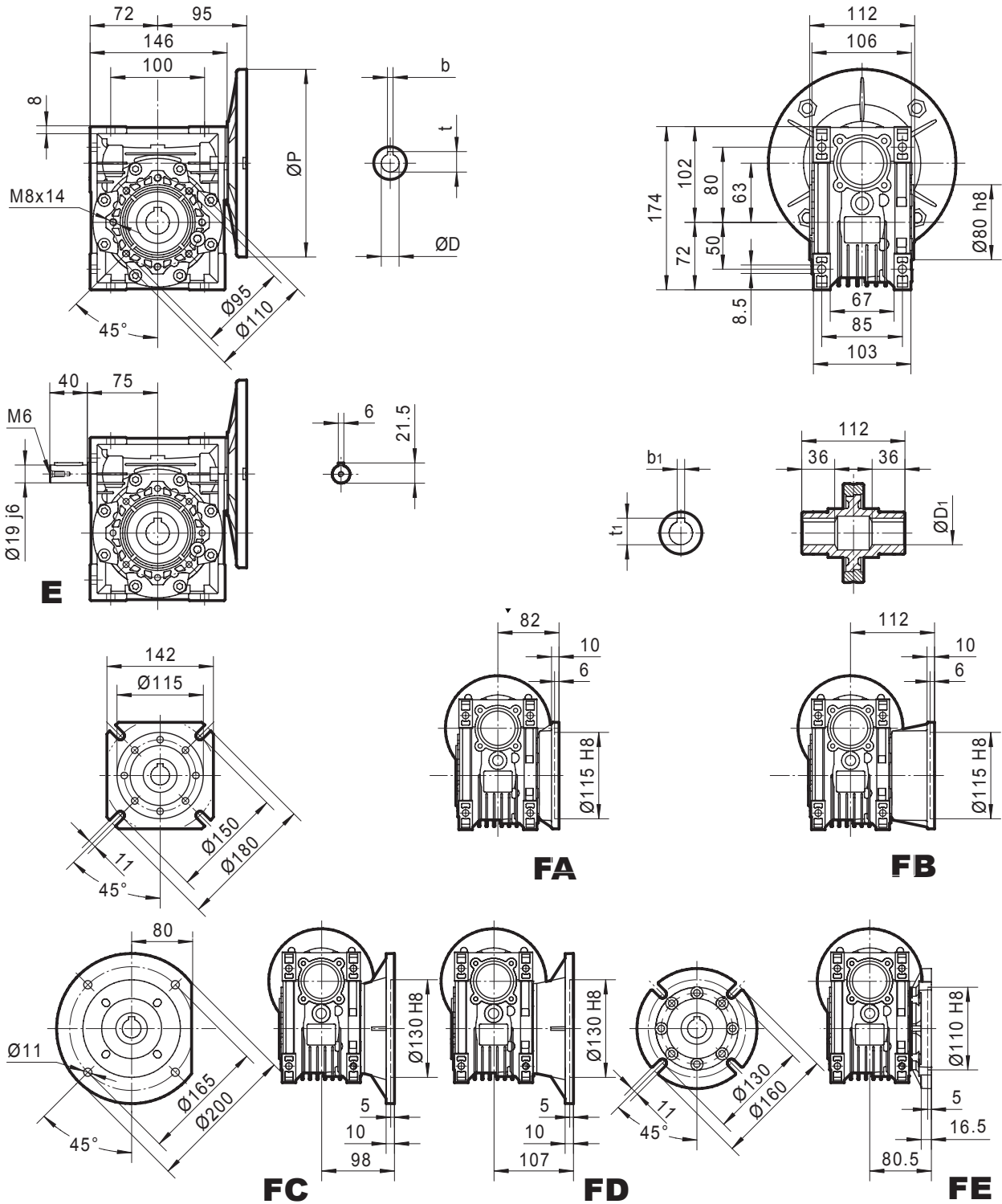
Peso senza motore ≈ 6.2 kg   Weight without motor ≈ 6.2 kg
Per i dati dei motori (P, D, b, t), **riferirsi alla tab. a pag. 78**
For the dimensions concerning the motor connection area (P, D, b, t)
please refer to the table shown at page 78.

Albero uscita	Output size	
Ø**D₁** H8	**b₁**	**t₁**
Ø25	8	28.3
Ø28*	8*	31.3*

(*) Modello non standard
(*) Nonstandard model

M8x14	b

E

FA

FB
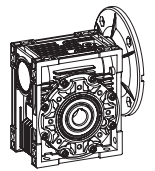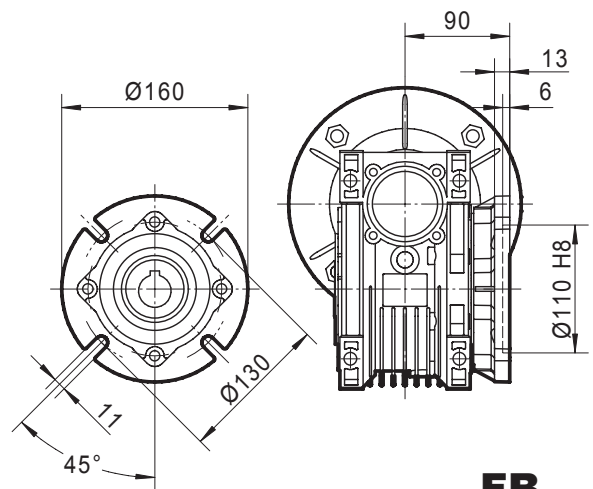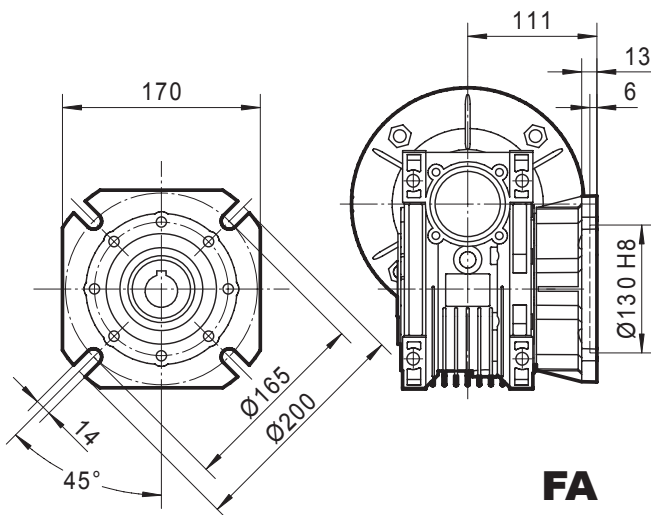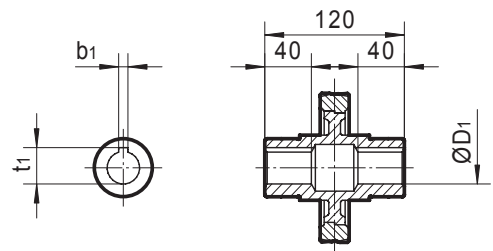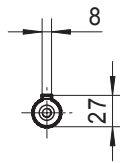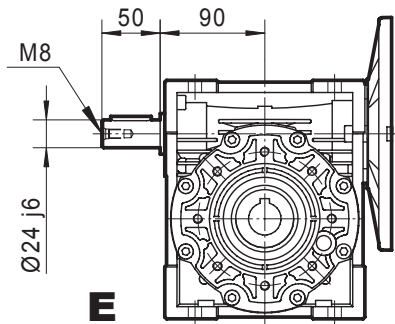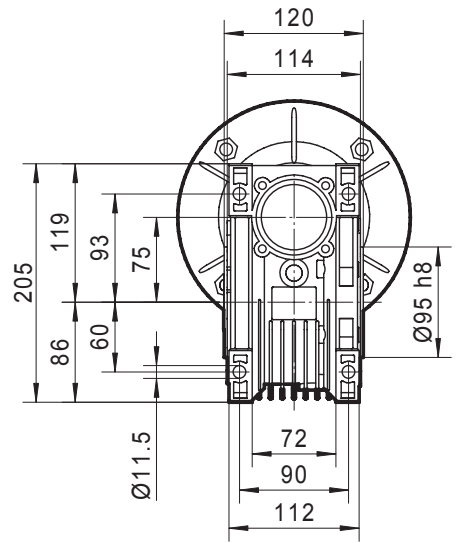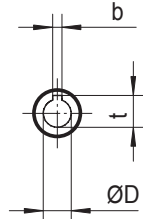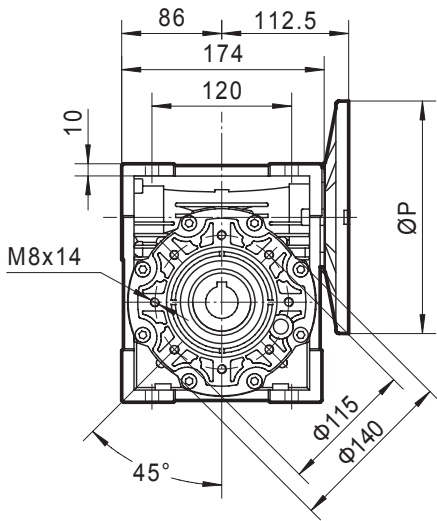
Peso senza motore ≈ 9 kg   Weight without motor ≈ 9 kg

er i dati dei motori (P, D, b, t)，riferirsi alla tab. a pag. 78

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

Albero uscita -		Output size
ØD_1 H8	b_1	t_1
Ø28	8	31.3
Ø35 *	10*	38.3 *

[*] Modello non standard
(*) Nonstandard model

MRDV 090

E

FA

FB

FC

FD
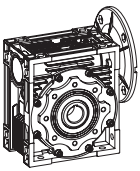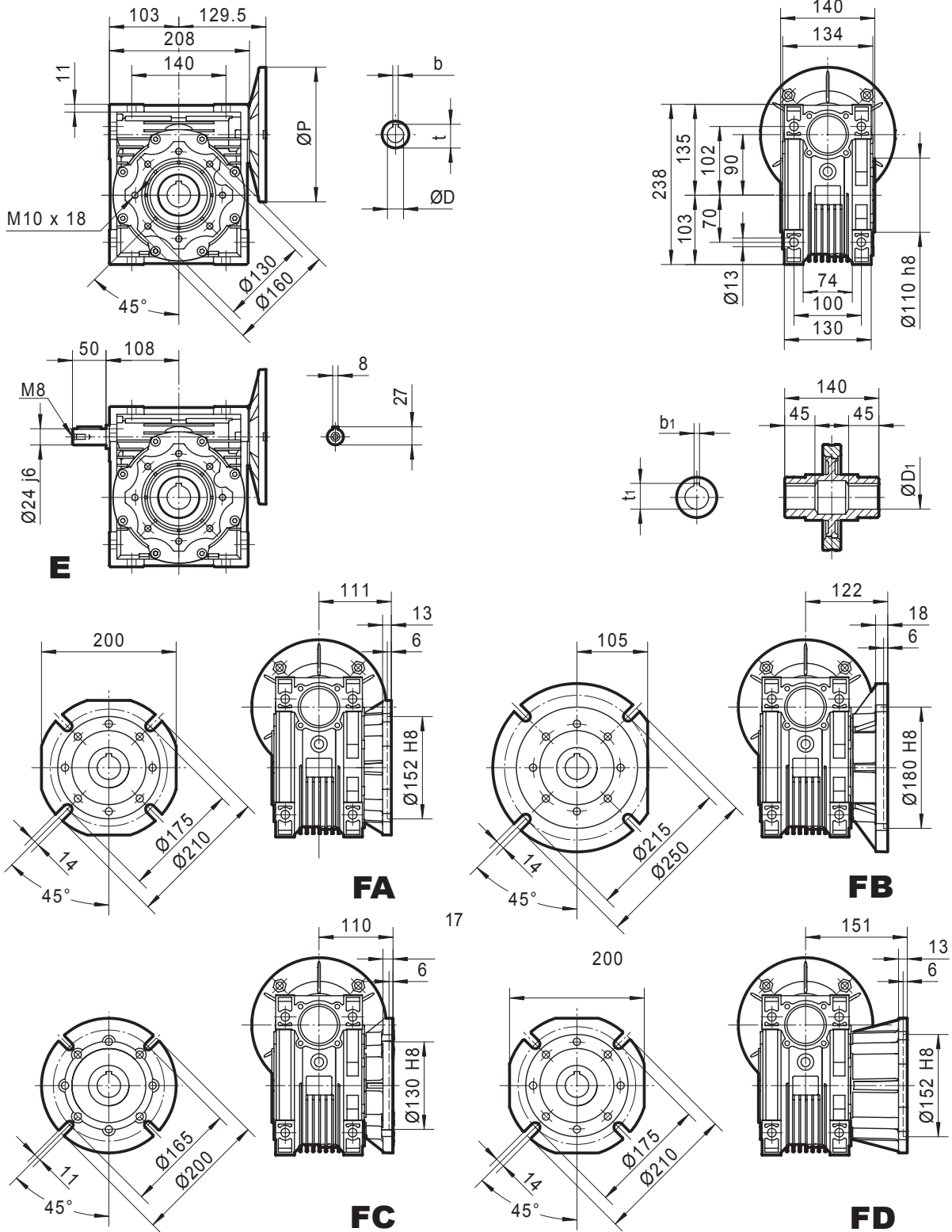
Peso senza motore ≈ **13 kg** Weight without motor ≈ 13 kg
Per i dati dei motori **(P, D, b, t)** , **riferirsi** **alla tab. pag.78**
For the dimensions concerning the motor connection area (P, D, b, t)
please refer to the table shown at page 78.

ØD₁ H8	b₁	t₁
Ø35	10	38.3
Ø38*	10*	41.3*

(*) **Modello non standard**
(*) Nonstandard model
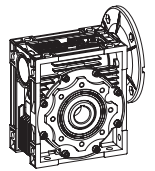
MRDV 110

127.5 | **160**
252.5
170
14.5

b
t
ØP
ØD

M10 x 18

45°

Ø165
Ø200

155
148
295
167.5
125
110
127.5
85
Ø14
Ø130 h8
115
144

60 | **135**

M10

8
31

Ø28 j6

E

12
45.3

155
49 | **49**
Ø42 H8

260

Ø14

45°

Ø230
Ø280

45°

131
15
6
Ø170 H8

FA

180
15
6
Ø170 H8

FB
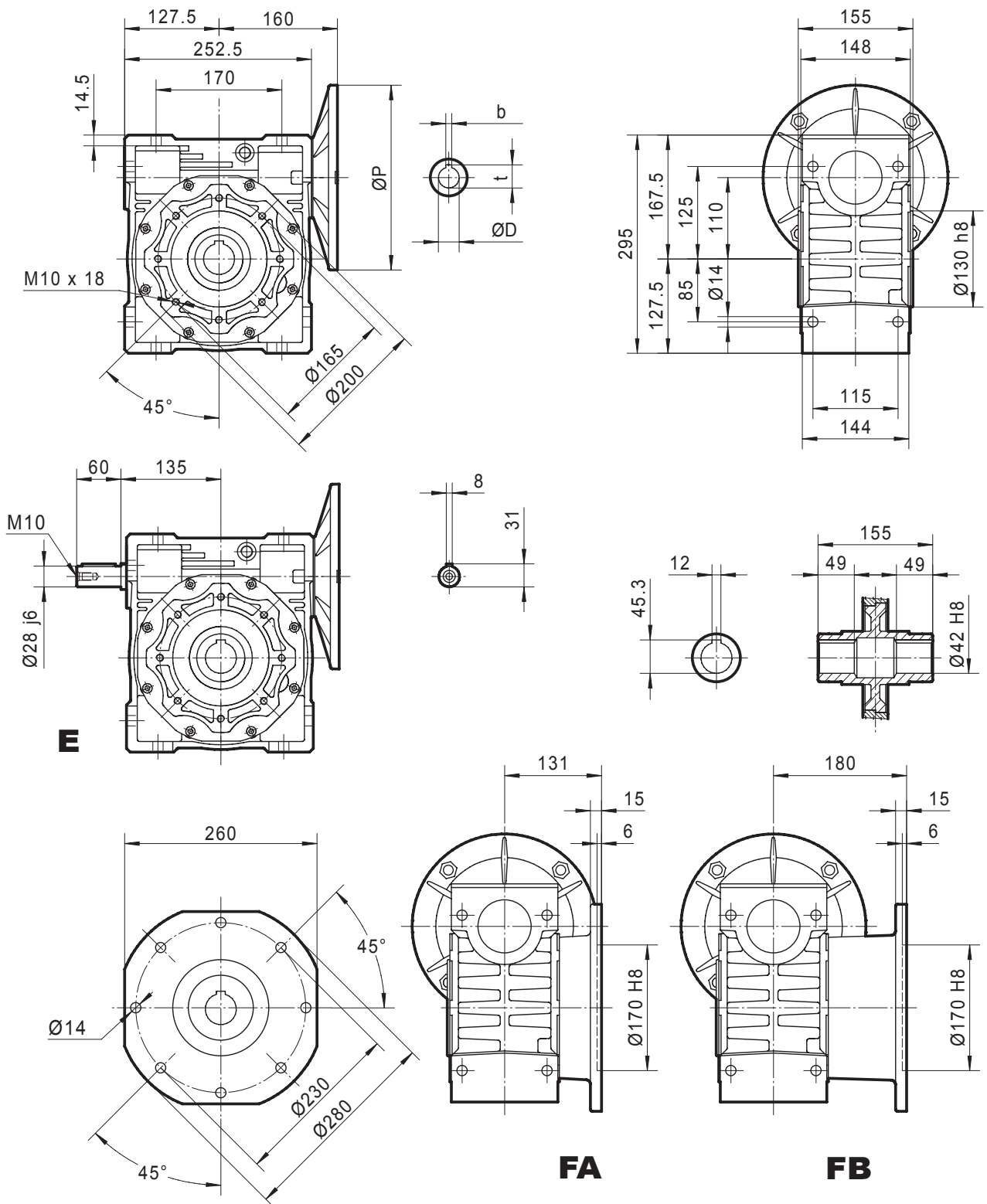
Peso senza motore ≈ **35 kg**

Weight without motor ≈ 35 kg

Per i dati dei motori (P, D, b, t), riferirsi alla tab. pag. 78

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.

MRDV **130**

Peso senza motore ≈ **48 kg**

Weight without motor ≈ 48 kg

Per i dati dei motori (P, D, b, t)，riferirsi alla tab. a pag. 78

For the dimensions concerning the motor connection area (P, D, b, t) please refer to the table shown at page 78.
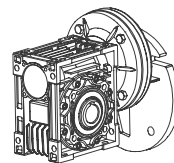
Riduttore Vite Senza Fine con Precoppia (PC+MRDV)
Worm gears with Pre-stage helical unit (PC+MRDV)

○ Per le dimensioni delle flange in uscita si vedano le tabelle da pag. 58 a 66

● For the dimensions of the output flanges, please refer to pages 58-66.

○ Per le dimensioni degli alberi si vedano le tabelle da pag. 58 a 66

● For the dimensions of the hollow shafts , please refer to pages 58-66.

○ Per le dimensioni degli alberi doppi si veda la tabella a pag 77

● For the dimensions of the double extention warm shafts, please refer to page 77.

PC**063** + MRDV**040**
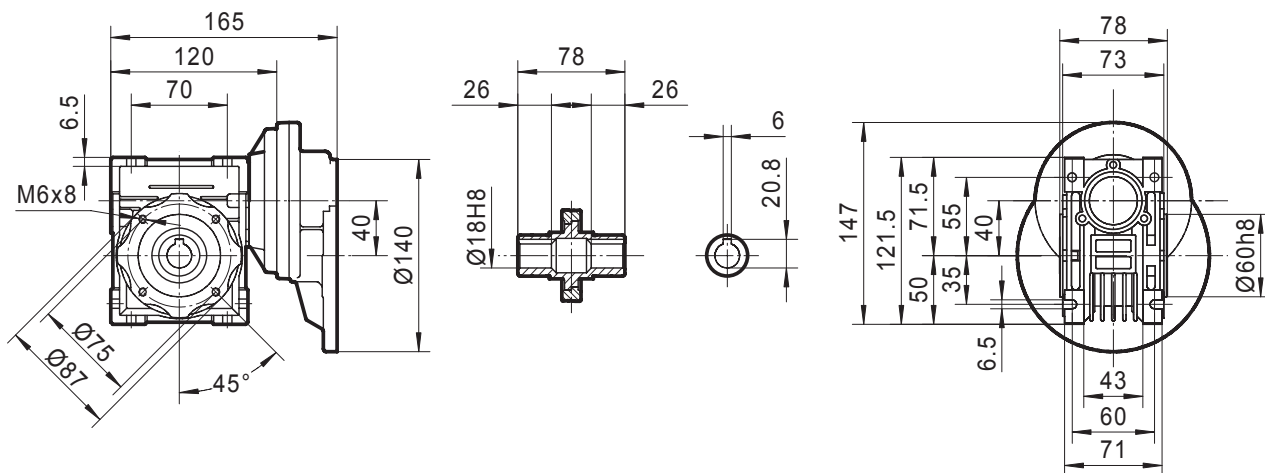
PC**063** + MRDV**050**
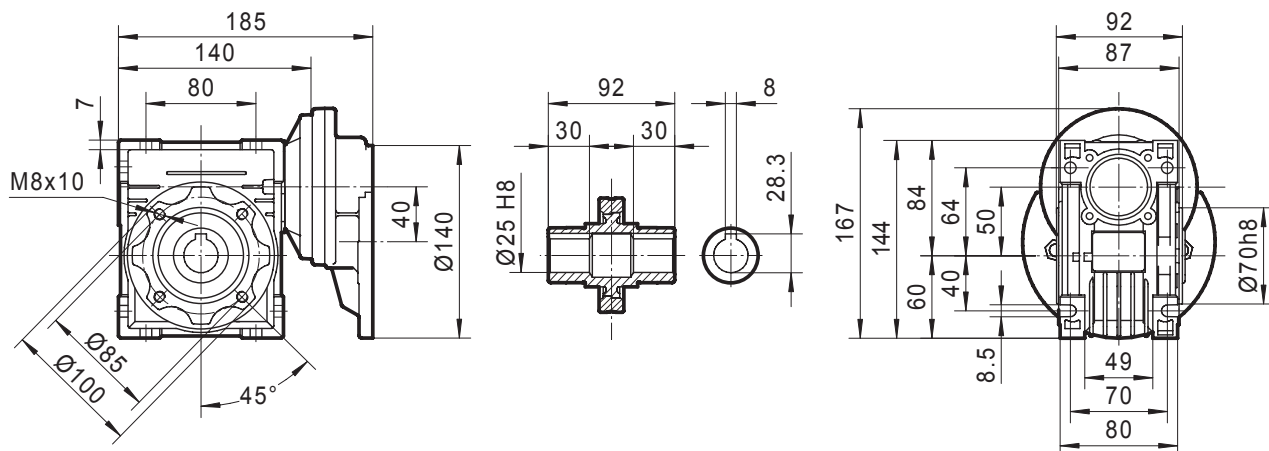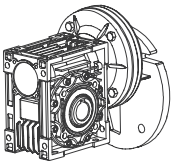
PC**063** + MRDV**063**
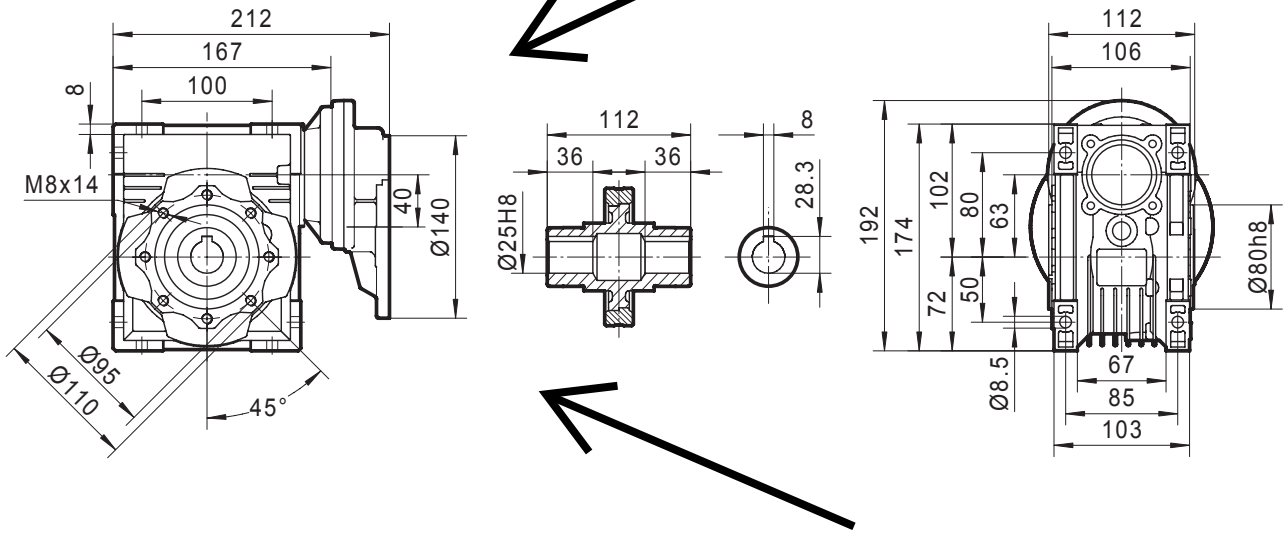
PC**071** + MRDV**050**
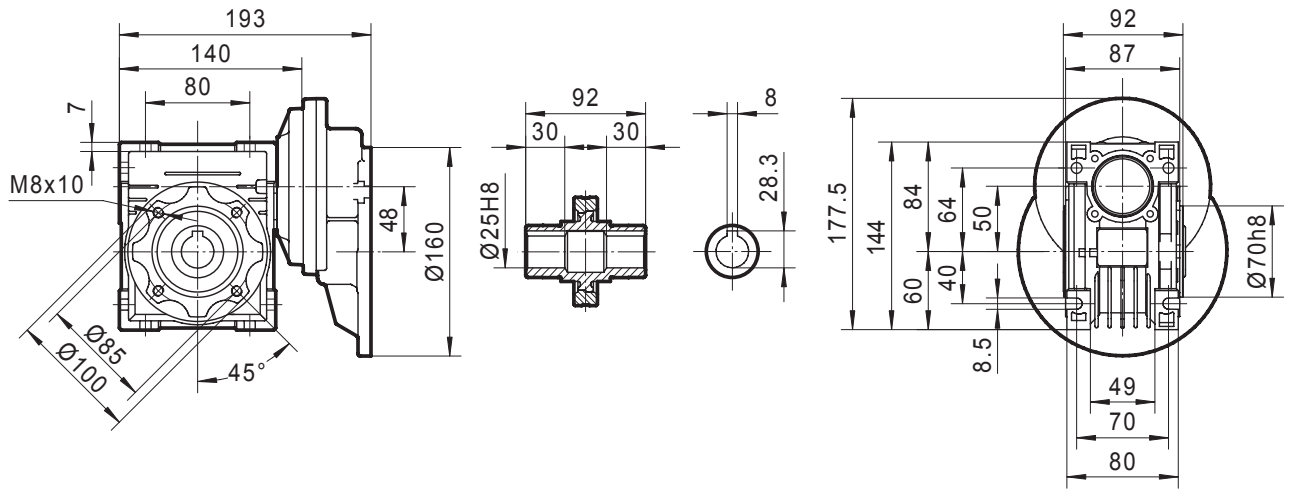
PC**071** + MRDV**063**
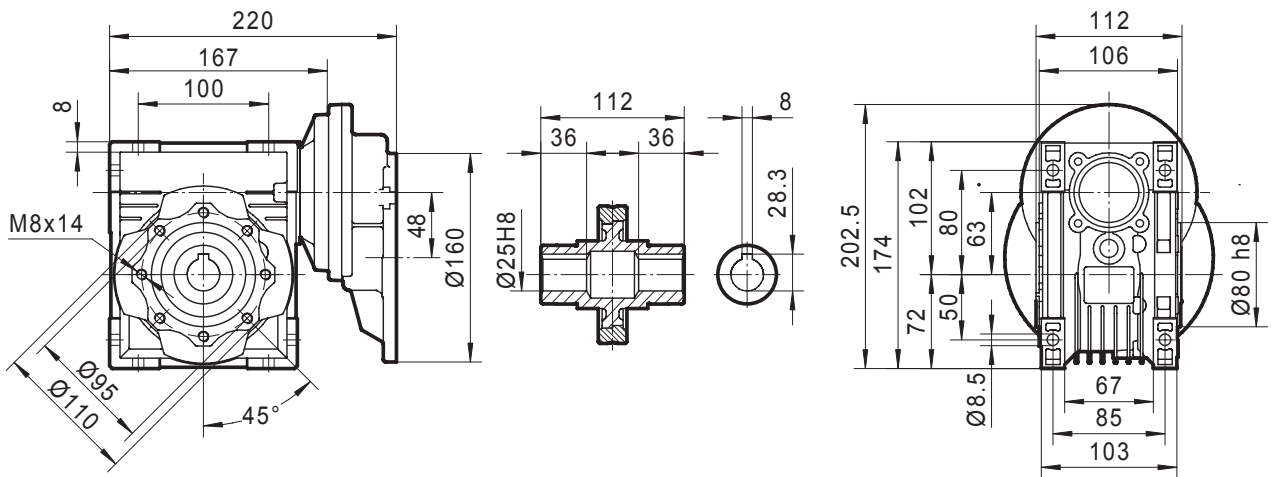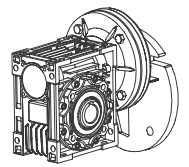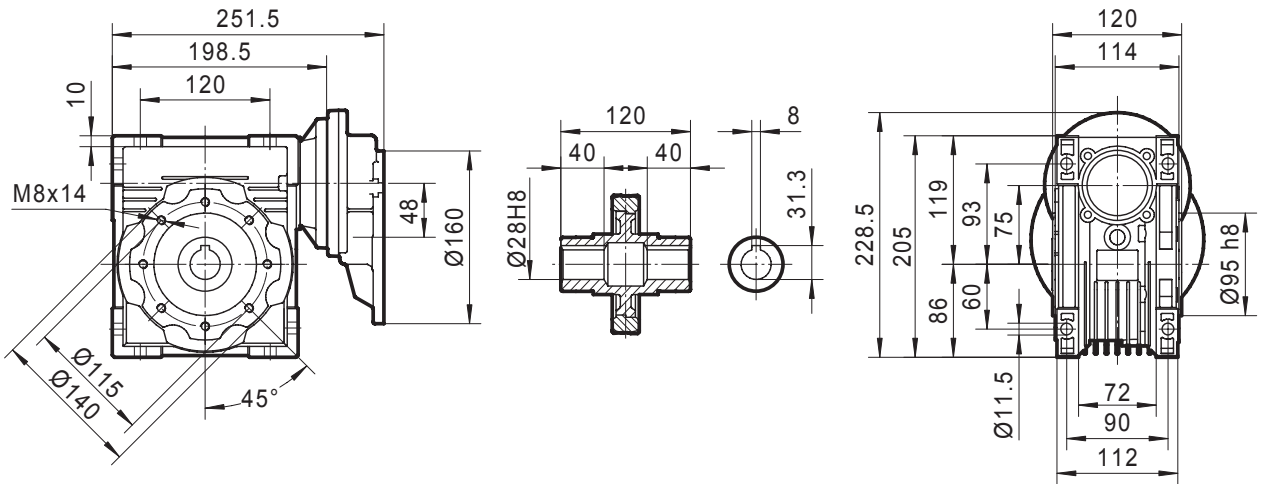
PC**071** + MRDV**075**

PC**071** + MRDV**090**
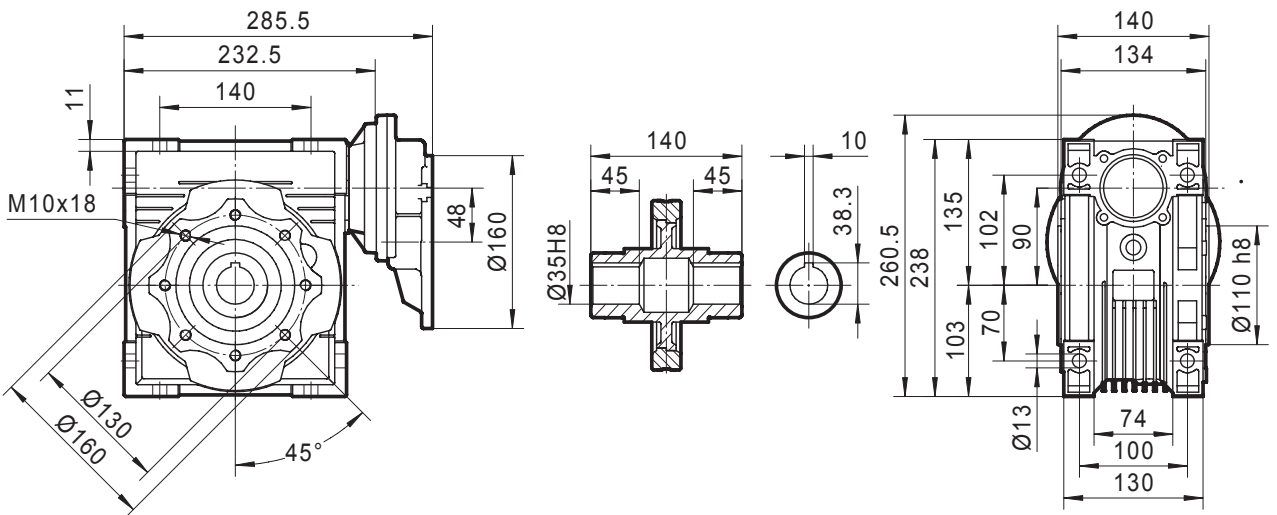
PC**080** + MRDV**075**
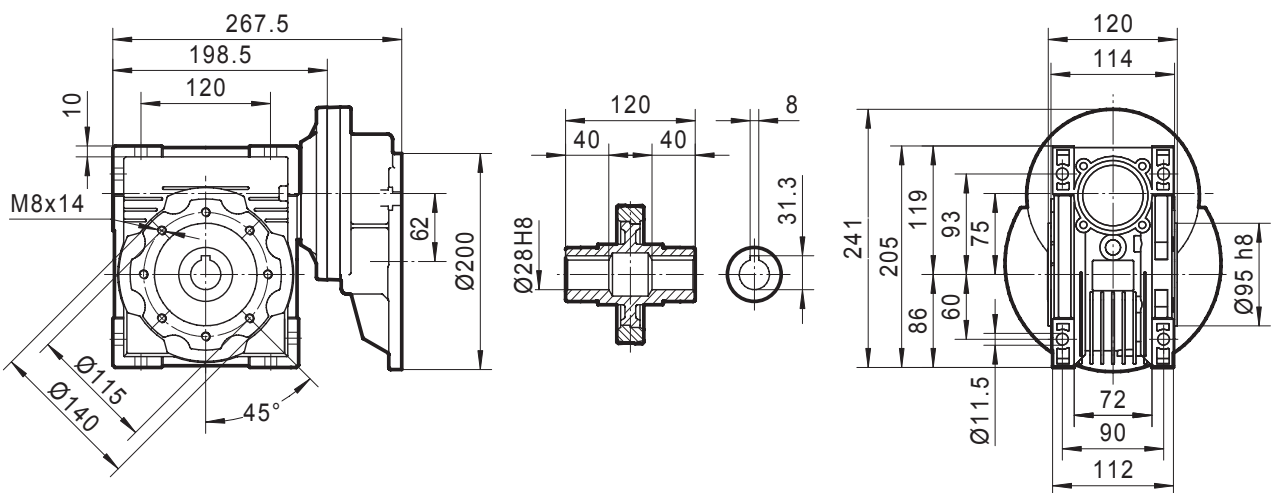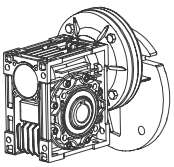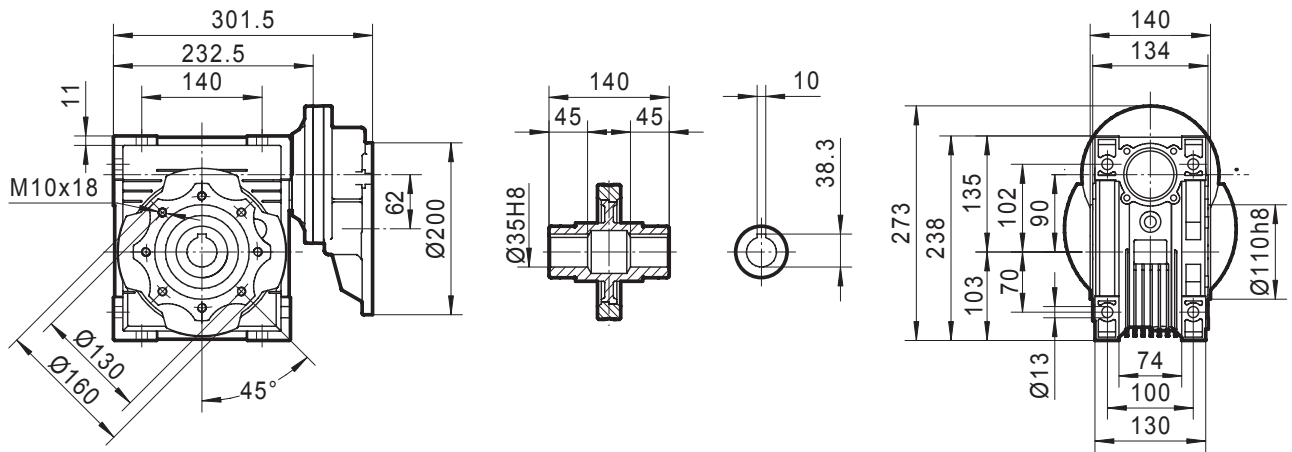
PC**080** + MRDV**090**

PC**080** + MRDV**110**
PC**090** + MRDV**110**
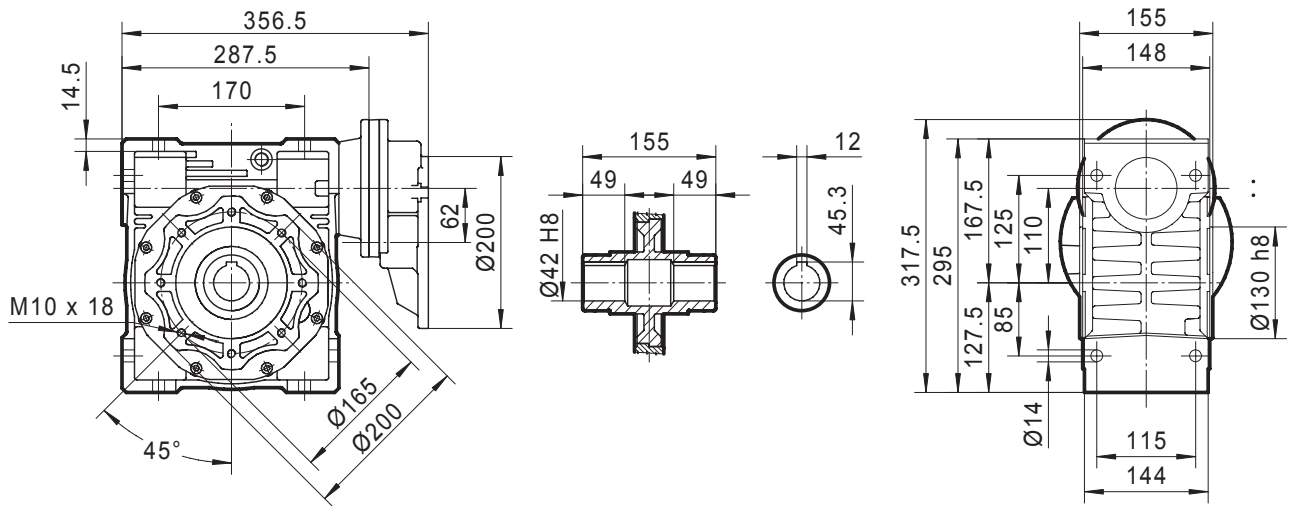
PC**080** + MRDV**130**
PC**090** + MRDV**130**
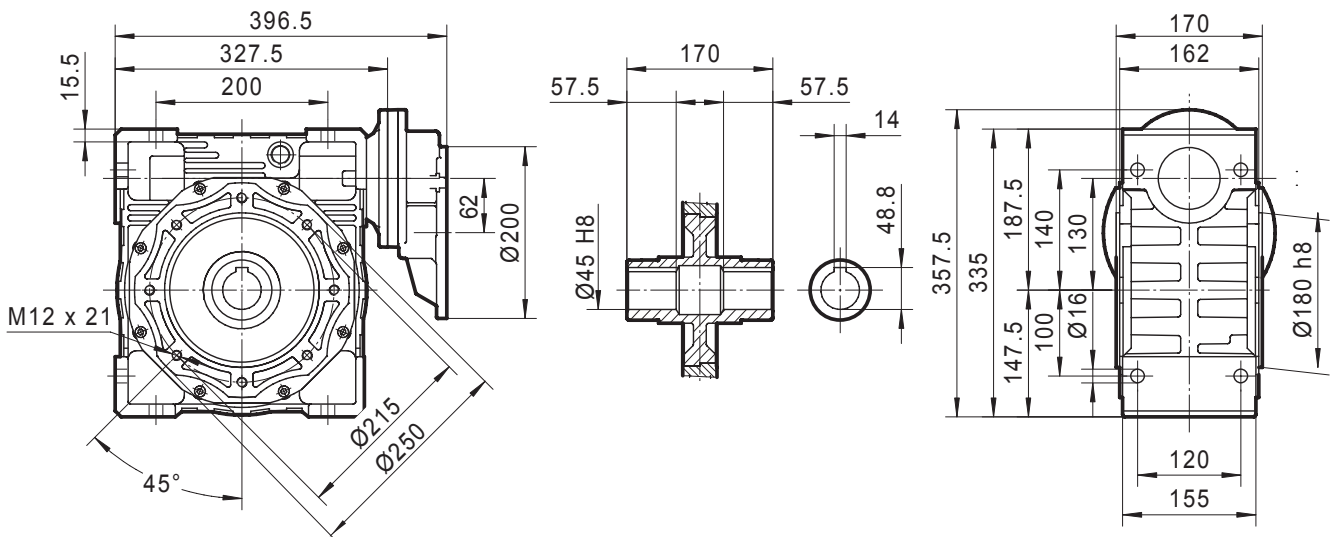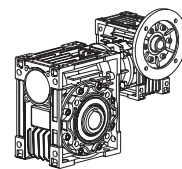
Riduttori Vite senza Fine combinati (MRDV-MRDV/ RDV-MRDV)
Combination worm gear unit   (MRDV-MRDV/ RDV-MRDV)

○ **Per le dimensioni delle flange in uscita riferirsi alle tabelle da pag. 58 a pag. 66**

● For the dimensions of the output flanges, please refer to pages 58-66.

○ **Per le dimensioni degli alberi, riferirsi alle tabelle da pag. 58 a pag. 66**

● For the dimensions of the hollow shafts , please refer to pages 58-66.

○ **Per le dimensioni degli alberi doppi consultare la tab. pag. 77**

● For the dimensions of the double extention worm shafts, please refer to page 77.

MRDV **025 + 030**
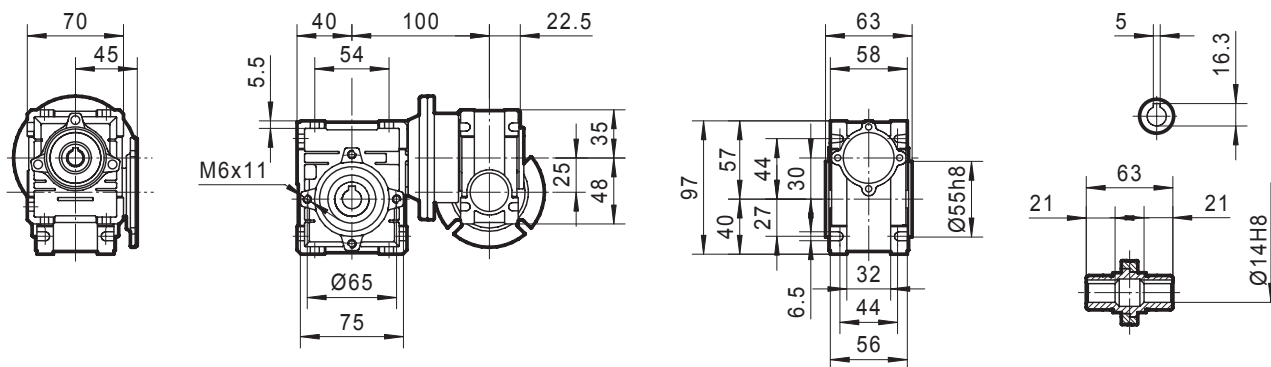
MRDV **025 + 040**
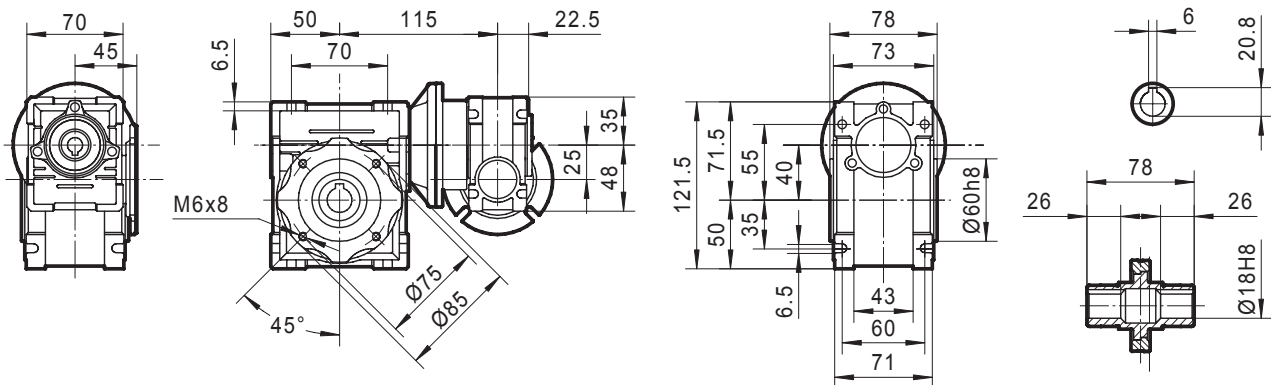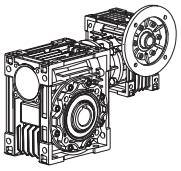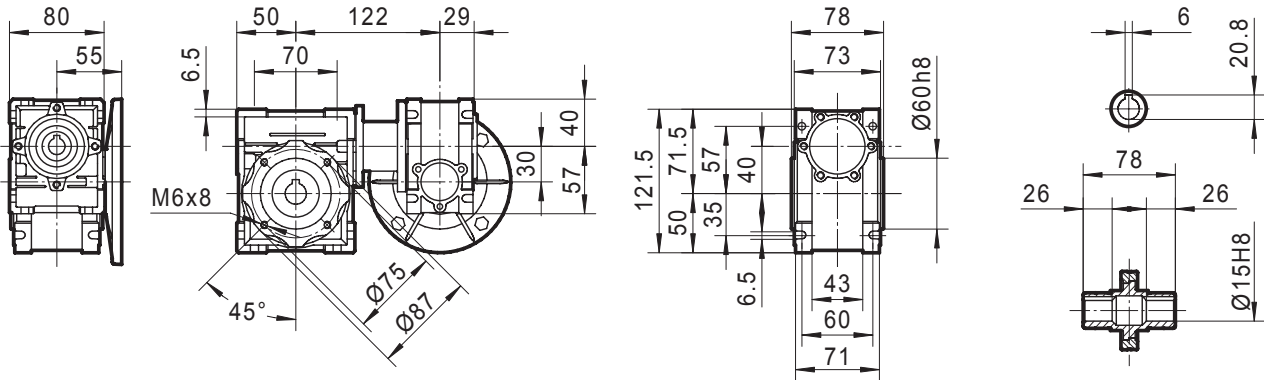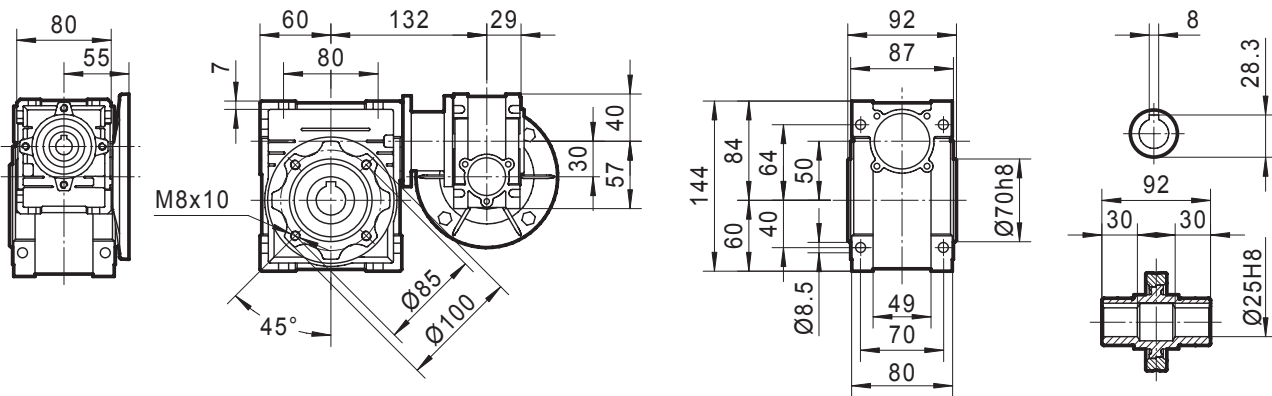
MRDV **030 + 040**

MRDV **030 + 050**

MRDV **030 + 063**
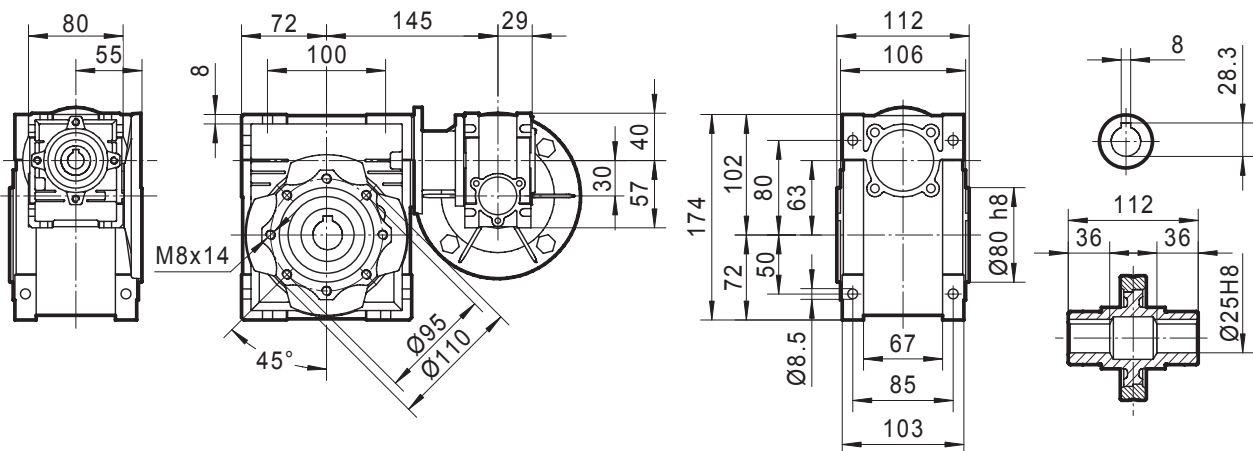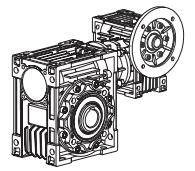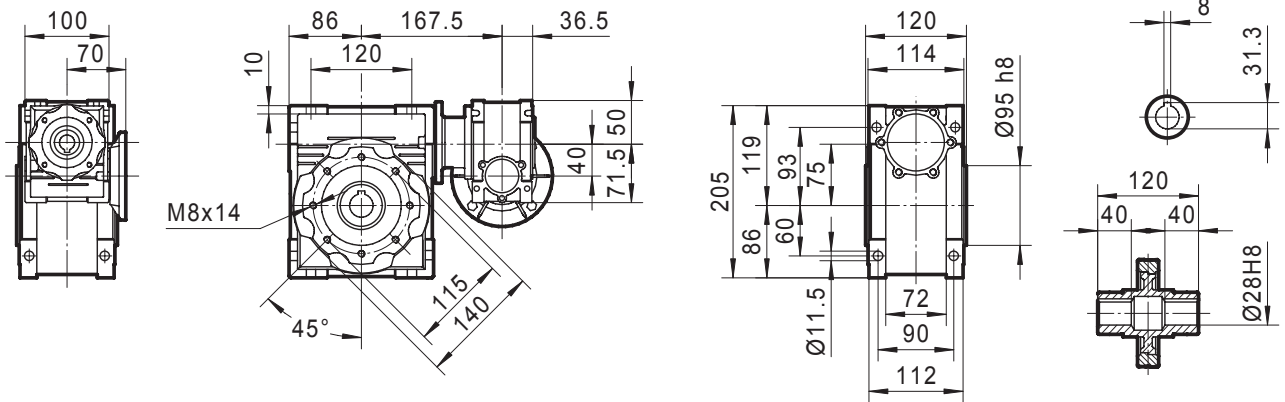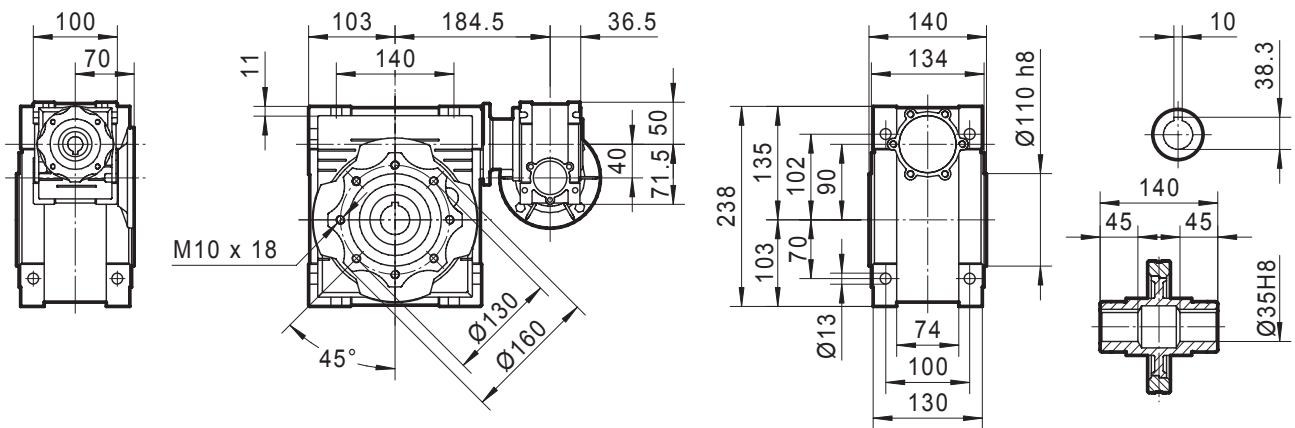
MRDV **040 + 075**

MRDV **040 + 090**

MRDV **050 + 110**
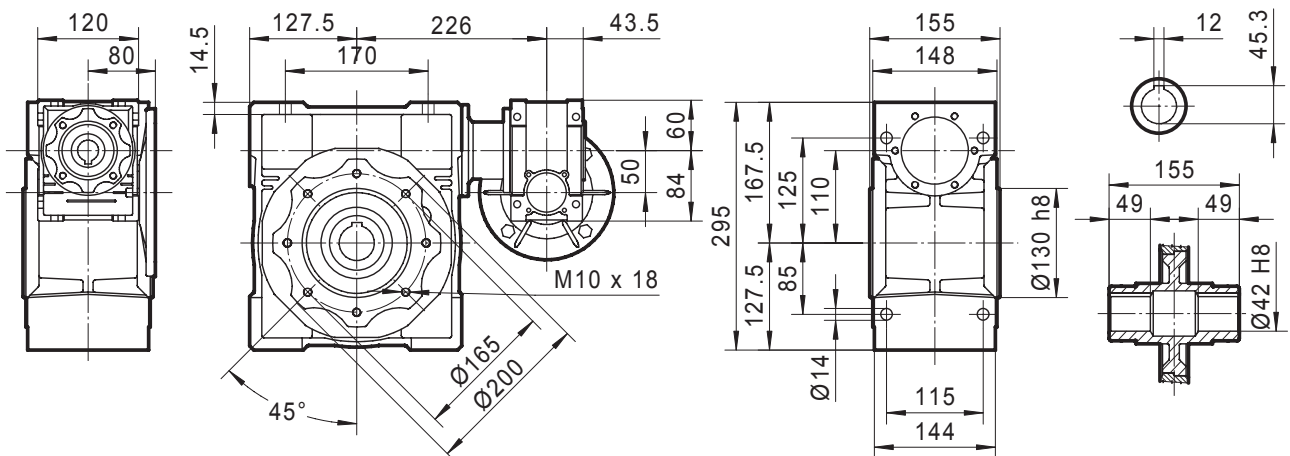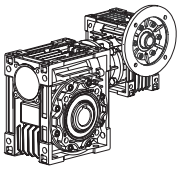
MRDV **063** + **130**

144
95
15.5
147.5
245
53
200
M12 x 21
45°
Ø215
Ø250
63
135
40
170
162
187.5
140
130
147.5
100
335
Ø16
120
155
Ø180 h8
14
48.8
170
57.5
57.5
Ø45 H8
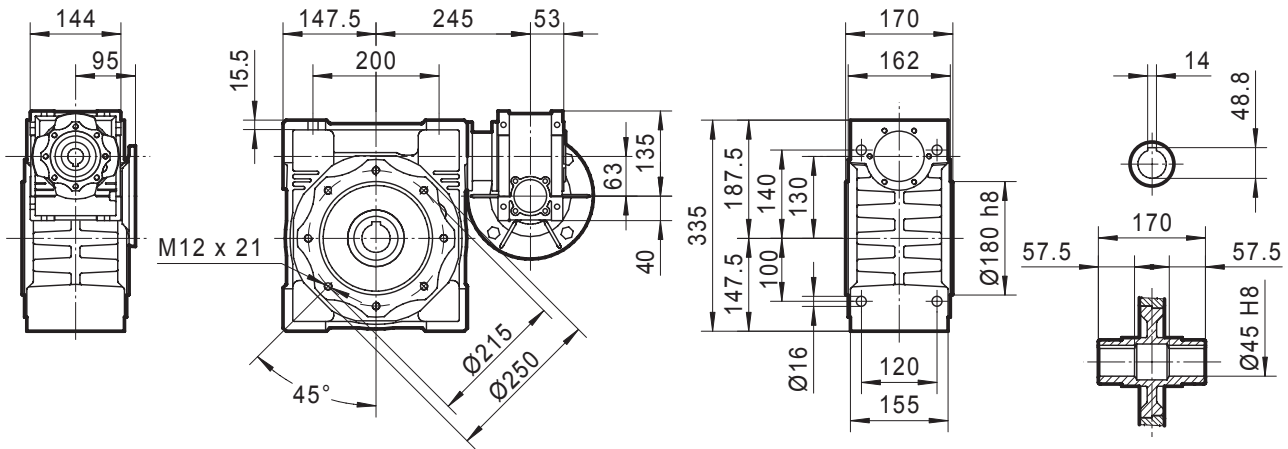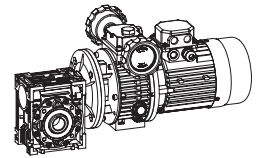
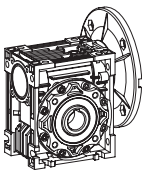## Combinazione Riduttori Vite Senza Fine con variatore - (UDL-MRDV）

Combination of speed variator and Worm-gear speed reducer
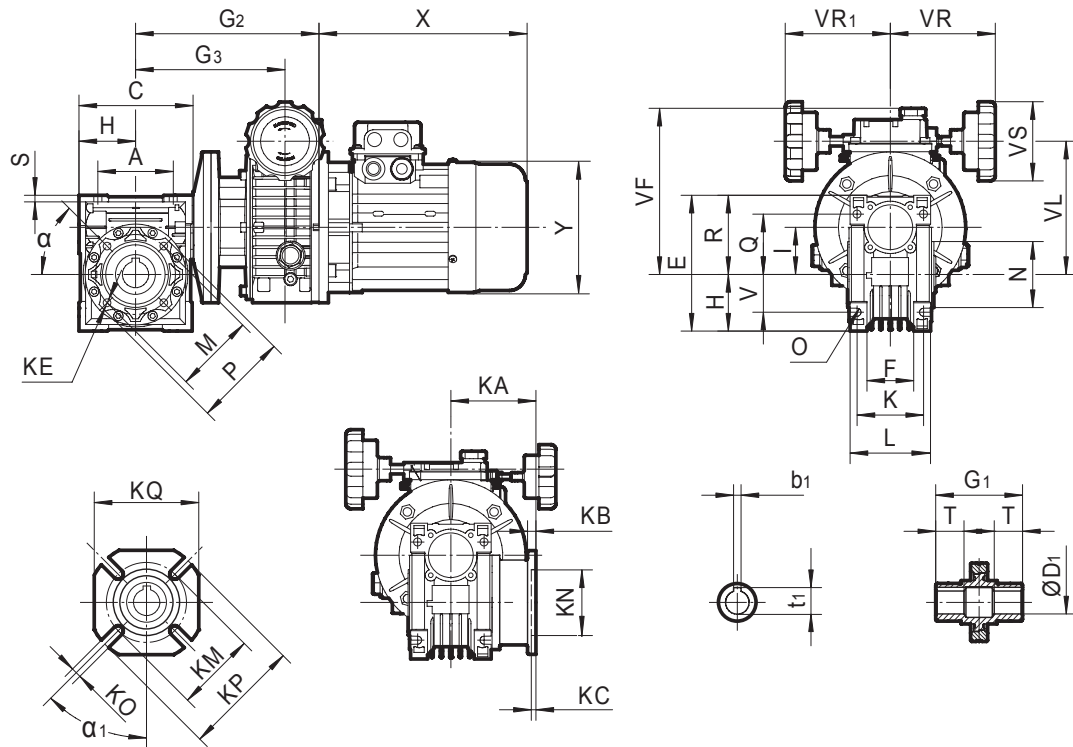
4P n1=1400r/min

Modello model	G₂	G₃	VF	VL	VS	VR	VR₁	base No.	X	Y
UDL0.18 - MRDV040	183	135	151	118	85	110	110	63	200	120
UDL0.18 - MRDV050	193	145	161	128	85	110	110			
UDL0.37 - MRDV050	190	154	173	140	85	110	110	71	227	141
UDL0.37 - MRDV063	205	169	186	153	85	110	110			
UDL0.55 - MRDV063	234	181	203	170	110	120	120	80	268	160
UDL0.75 - MRDV063	234	181	203	170	110	120	120			
UDL0.37 - MRDV075	223	187	198	165	85	110	110	71	227	141
UDL0.55 - MRDV075	252	198	215	182	110	120	120	80	268	160
UDL0.75 - MRDV075	252	198	215	182	110	120	120			
UD1.1 - MRDV075	259.5	207.5	199	177	110	150	—	90S	265	195
UD1.5 - MRDV075	300.5	227.5	219	197	110	150	—	90L	290	195
UDL0.55 - MRDV090	269	215	230	197	110	120	120	80	268	160
UDL0.75 - MRDV090	269	215	230	197	110	120	120			
UD1.1 - MRDV090	276.5	224.5	214	192	110	150	—	90S	265	195
UD1.5 - MRDV090	317.5	244.5	234	212	110	150	—	90L	290	195
UD1.1 - MRDV110	307	255	234	212	110	120	—	90S	265	195
UD1.5 - MRDV110	348	275	254	232	110	150	—	90L	290	195
UD2.2 - MRDV110	368	291	298	260	110	160	—	100L	320	215
UD3 - MRDV110	368	291	298	260	110	160	—			
UD4 - MRDV110	368	291	298	260	110	160	—	112M	340	240
UD1.5 - MRDV130	368	295	274	252	110	150	—	90L	290	195
UD2.2 - MRDV130	388	311	318	280	110	160	—	100L	320	215
UD3.0 - MRDV130	388	311	318	280	110	160	—			
UD4.0 - MRDV130	388	311	318	280	110	160	—	112M	340	240

Per le altre dimensioni degli MRDV consultare tabelle da pag.58 a pag. 66.
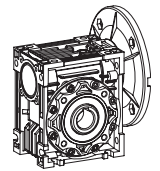the other dimensions refer to MRDV series dimension（pages 58-66)

Braccio di reazione - Torque arm
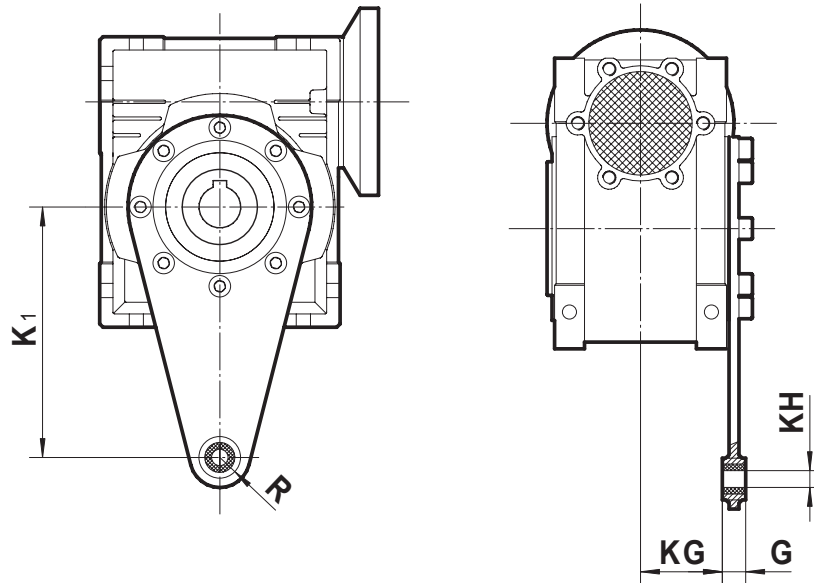
	K₁	G	KG	KH	R
025	70	14	17.5	8	15
030	85	14	24	8	15
040	100	14	31.5	10	18
050	100	14	38.5	10	18
063	150	14	49	10	18
075	200	25	47.5	20	30
090	200	25	57.5	20	30
110	250	30	62	25	35
130	250	30	69	25	35

Albero in uscita - Output shafts

AS

AB
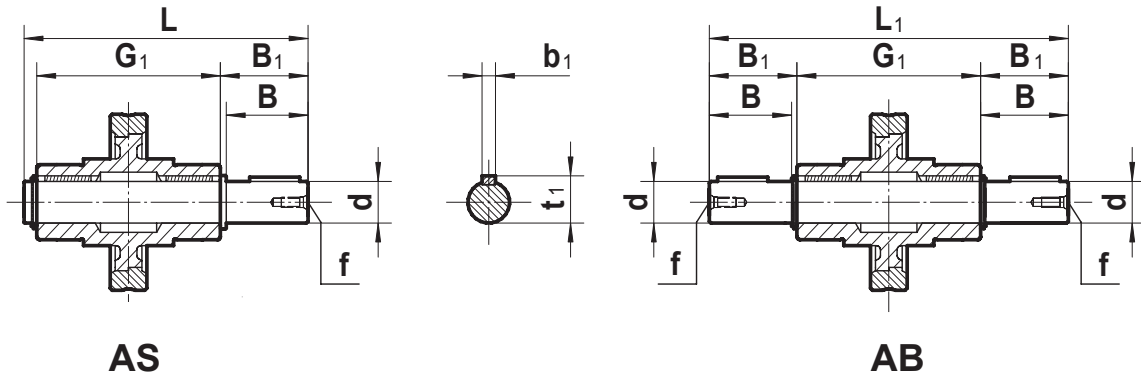
	d	B	B1	G1	L	L1	f	b1	t1
025	11 g6 9 *	23 25 *	25.5 30 *	50	81 85.5 *	101	—	4 3 *	12.5 10.2 *
030	14 h6	30	32.5	63	102	128	M6	5	16
040	18 h6	40	43	78	128	164	M6	6	20.5
050	25 h6	50	53.5	92	153	199	M10	8	28
063	25 h6	50	53.5	112	173	219	M10	8	28
075	28 h6	60	63.5	120	192	247	M10	8	31
090	35 h6	80	84.5	140	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

(*) **Modello non standard**
(*) Nonstandard model

Carcassa - Cover
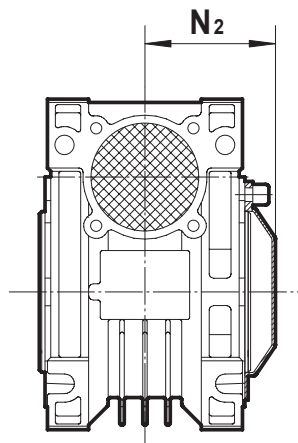
	N2
030	47
040	55
050	62.5
063	73.5
075	78.5
090	90.5
110	99
130	107
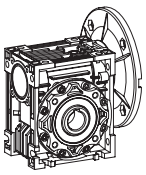
Flange in ingresso B5 - Input flange B5
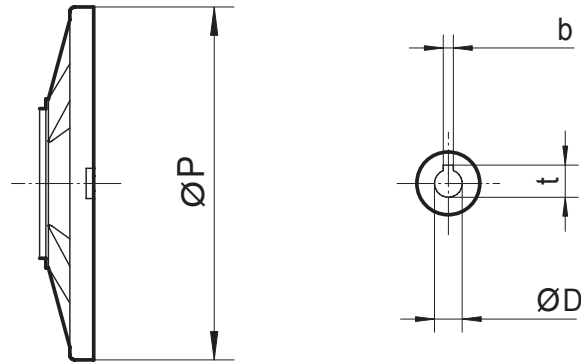
B5	IEC							
	056	063	071	080	090	100	112	132
ØP	Ø120	Ø140	Ø160	Ø200	Ø200	Ø250	Ø250	Ø300
ØD	Ø9 E8	Ø11 E8	Ø14 E8	Ø19 E8	Ø24 E8	Ø28 E8	Ø28 E8	Ø38 E8
b	3	4	5	6	8	8	8	10
t	10.4	12.8	16.3	21.8	27.3	31.3	31.3	41.3

MRDV (110 、130)   t = 40.3   (IEC 132)

Flange in ingresso B14 - Input flange B14
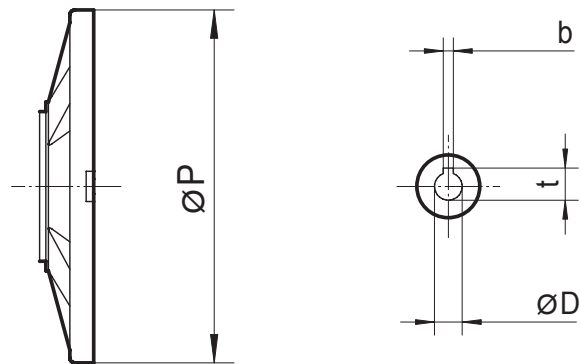
B14	IEC						
	056	063	071	080	090	100	112
ØP	Ø80	Ø90	Ø105	Ø120	Ø140	Ø160	Ø160
ØD	Ø9 E8	Ø11 E8	Ø14 E8	Ø19 E8	Ø24 E8	Ø28 E8	Ø28 E8
b	3	4	5	6	8	8	8
t	10.4	12.8	16.3	21.8	27.3	31.3	31.3
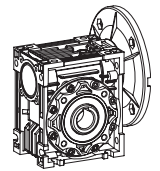
Albero in ingresso - Shaft input worm-gear speed reducer
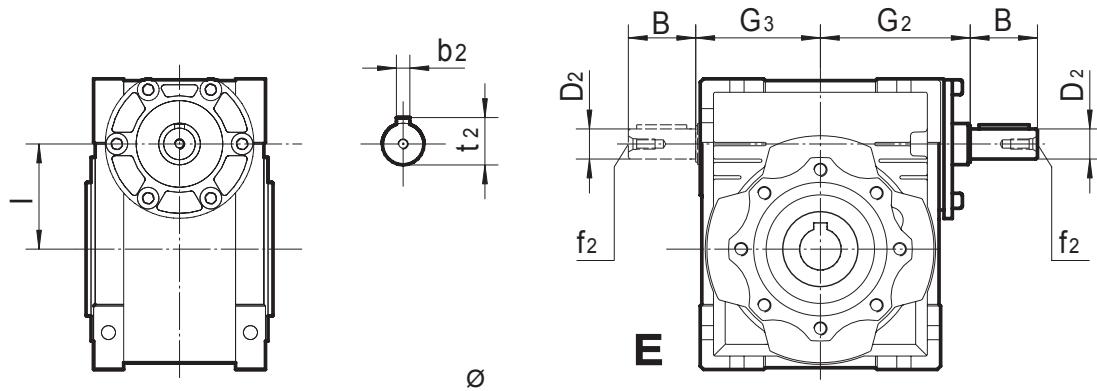
RDV	30	40	50	63	75	90	110	130
B	20	23	30	40	50	50	60	80
D_2	Ø9 j6	Ø11 j6	Ø14 j6	Ø19 j6	Ø24 j6	Ø24 j6	Ø28 j6	Ø30 j6
G_2	51	60	74	90	105	125	142	162
G_3	45	53	64	75	90	108	135	155
I	30	40	50	63	75	90	110	130
b_2	3	4	5	6	8	8	8	8
f_2	-	-	M6	M6	M8	M8	M10	M10
t_2	10.2	12.5	16	21.5	27	27	31	33

Combinazioni riduttori vite senza fine - Combination worm gear unit
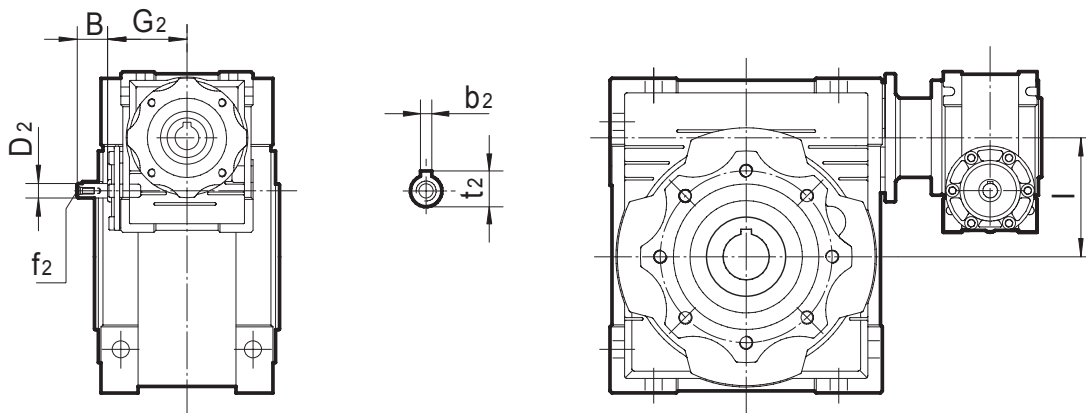
RDV-MRDV	030-040	030-050	030-063	040-075	040-090	050-110	063-130
B	20	20	20	23	23	30	40
D_2	Ø9 j6	Ø9 j6	Ø9 j6	Ø11 j6	Ø11 j6	Ø14 j6	Ø19 j6
G_2	51	51	51	60	60	74	90
I	10	20	33	35	50	60	67
b_2	3	3	3	4	4	5	6
f_2	-	-	-	-	-	M6	M6
t_2	10.2	10.2	10.2	12.5	12.5	16	21.5

Per le dimensioni mancanti consultare le pagine da 58 a 66.
For the missing dimensions, please refer to page 58-66.
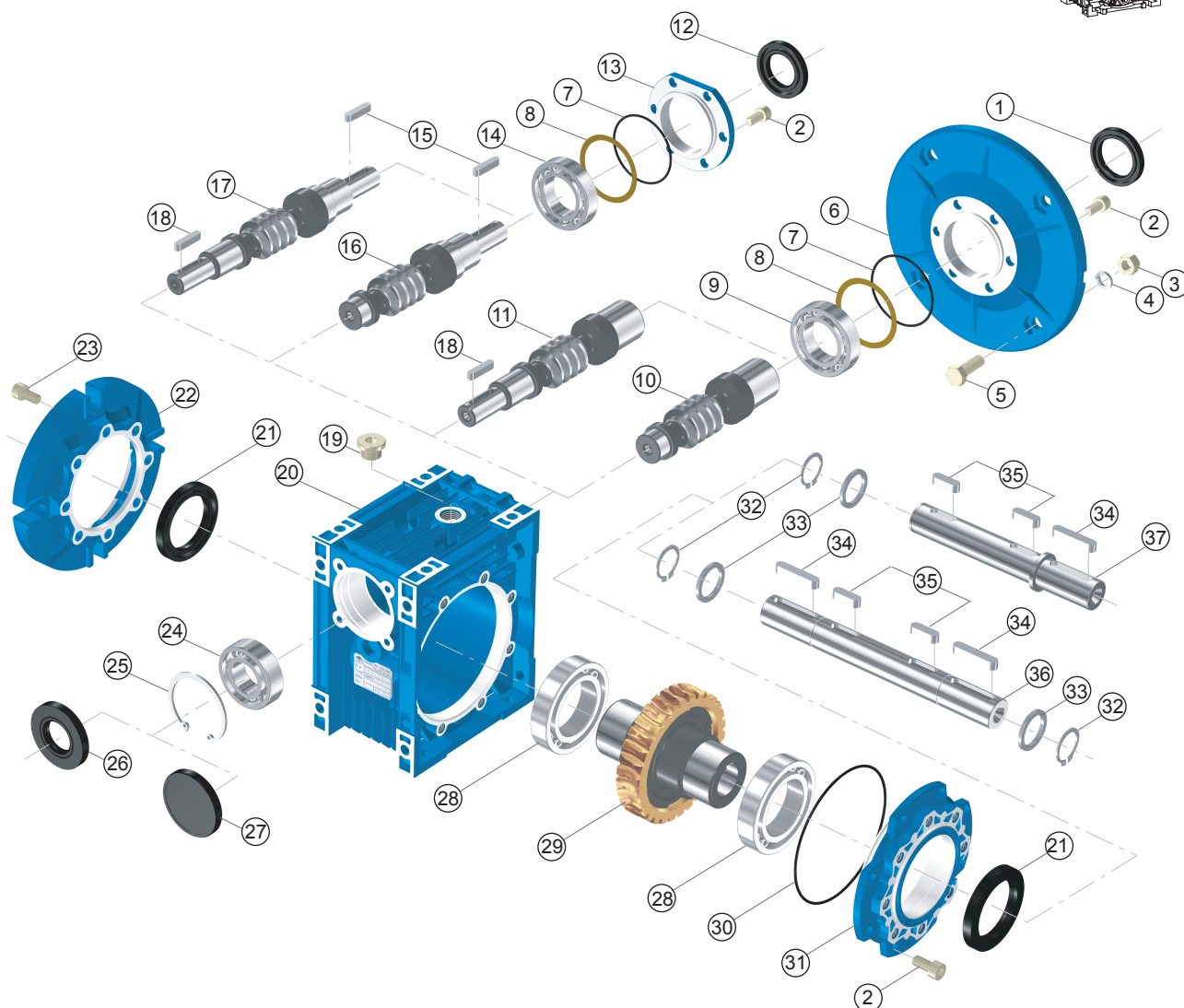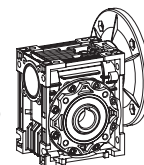
1 . **Anello di tenuta -** oil seal
2 . **Vite -** inner hex screw
3 . **Dado -** nut
4 . **Rondella -** spring washer
5 . **Bullone -** hex screw
6 . **Flangia in ingresso -** input flange
7 . **O-Ring -** O-Ring
8 . **Distanziale -** adjust spacer
9 . **Cuscinetto -** bearing
10. **Vite forata in ingresso -** hole input worm
11. **Vite cilindrica in ingresso e albero maschio -** hole input and shaft & output worm
12. **Anello di tenuta -** oil seal
13. **Coperchio in ingresso -** input cover
14. **Cuscinetto -** Bearing
15. **Chiavetta -** key
16. **Albero in ingresso -** shaft input worm
17. **Albero in ingresso e vite in uscita -** shaft input and shaft output worm
18. **Chiavetta -** key

19 .**Tappo per olio -** oil plug
20 .**Carcassa -** casing
21 **Anello di tenuta -** oil seal
22. **Flangia in uscita -** output flange
23. **Bullone -** inner hex screw
24. **Cuscinetto -** bearing
25. **Seeger -** hole-circlip
26. **Anello di tenuta -** oil seal
27. **Coperchio -** cover
28. **Cuscinetto -** bearing
29. **Vite -** worm wheel
30. **O-Ring -** O-Ring
31. **Coperchio in uscita -** output cover
32. **Seeger albero -** shaft-circlip
33. **Distanziale -** spacer
34. **Chiavetta -** key
35. **Chiavetta -** key
36. **Albero bisporgente in uscita -** ouble output shaft
37. **Albero sporgente in uscita -**single output shaft