



# DZ-kulmavaihteet

# RINVII ANGOLARI DI PRECISIONE

RIGHT-ANGLE  
PRECISION BEVEL  
GEAR DRIVES



 **trasmissioni**

SERIE **DZ** E **ZP**  
**DZ** AND **ZP** SERIES

# Indice generale



trasmissioni

## Indice generale

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## AZIENDA

La DZ Trasmissioni, con la sua oltre ventennale esperienza, risolve con i rinvii angolari di serie, ma anche specifici, qualsiasi problema di trasmissione di potenza di un moto rotatorio tra due assi disposti a 90°.

La gamma standard comprende 9 diverse grandezze, alberi da 8 a 35 mm, potenze fino a 15 Kw e una velocità di rotazione fino a 3000 giri/minuto.

La dimensione aziendale e la sua struttura, consentono lo studio e la costruzione di trasmissioni speciali in tempi ristretti.

Un qualificato servizio tecnico-commerciale è a disposizione per risolvere, nel modo più affidabile ed economico, i problemi del cliente.

Esponeteci il Vostro problema, forse è possibile che tra i tanti "speciali" che già costruiamo per i nostri clienti, ve ne sia uno adeguato alle Vostre esigenze.

## COMPANY

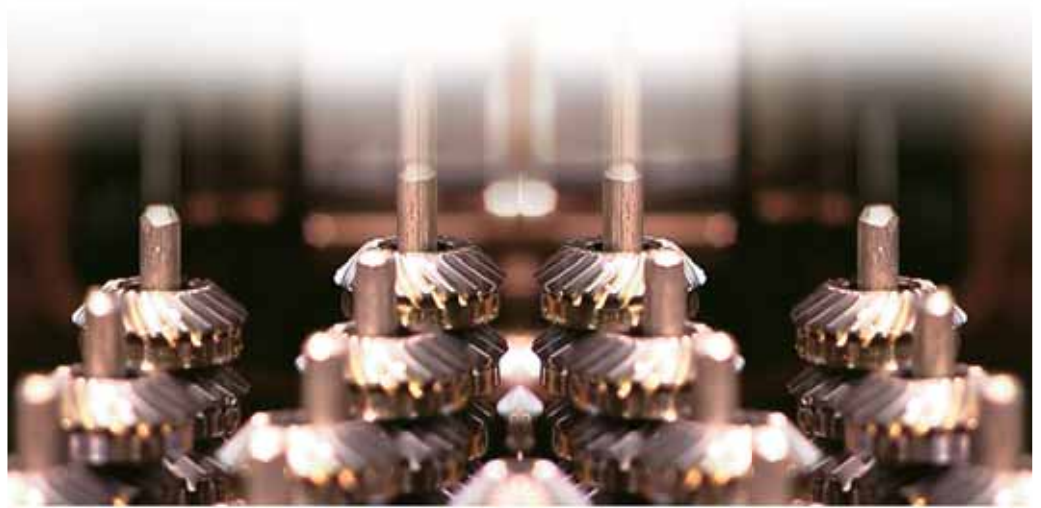
*Thanks to its 20 year experience in the manufacture of standard and special bevel gears, DZ TRASMISSIONI is able to solve any problem connected with the power transmission of a rotary motion between two axes arranged at 90°.*

*The standard range includes 9 different sizes, shafts from 8 to 35 mm, powers up to 15 kW and speeds of rotation up to 3000 revolutions/minute.*

*The company capacity and its organization enable the study and manufacture of special gearboxes in very short times.*

*A qualified technical and sales service is at customer's disposal to solve his problem in the most reliable and cost-saving way.*

*Let us know your requirements, a suitable solution to your problem perhaps exists among the various special units we already manufacture for our customers.*





trasmissioni

## PRESENTAZIONE

I rinvii angolari serie DZ e ZP sono stati progettati per applicazioni industriali ove occorre trasmettere un moto rotatorio di potenza tra alberi disposti perpendicolarmente tra loro. Sono disponibili in 9 diverse misure. Possono essere a 2 o 3 uscite con rapporto di trasmissione 1/1 o 1/2 o 1/3. Oltre alla serie standard è disponibile una vasta gamma di speciali su disegno del cliente. Le ultime 8 pagine del catalogo riportano alcuni esempi. Per ulteriori notizie, interpellare il nostro servizio tecnico commerciale.

## CARATTERISTICHE

### CARTER

Monoblocco rigido in lega d'alluminio 4 o 6 piani di attacco 3/4 condizioni di centraggio. La serie inox utilizza acciaio inossidabile.



### INGRANAGGI

Conici tagliati su macchine GLEASON dentatura spiroidale che assicura la massima capacità di carico. Sono costruiti in acciaio al Nickel-Cromo; il trattamento superficiale di cementazione-tempra garantisce una lunga durata all'usura pur lasciando tenace ed elastico il cuore del dente per sopprimere agli urti meccanici. Il gioco angolare fra gli ingranaggi è regolato per garantire un ingranamento ed una silenziosità ottimali; qualora espressamente richiesto può essere ridotto a 5' con condizioni speciali di consegna e prezzo.



### ALBERI

Sono costruiti in acciaio, trattato a 80Kg/mm<sup>2</sup> protetti superficialmente contro la corrosione. L'attacco esterno, per l'utilizzatore è previsto con un trascinalimento a chiavetta a norma UNI (ad eccezione della misura 1 e 201). Le scanalature delle chiavette possono assumere qualsiasi posizione angolare. La serie inox utilizza acciaio inossidabile.



### CUSCINETTI

Sono a sfere largamente dimensionati a gola profonda. In casi particolari sono utilizzati rulli conici e/o contatti obliqui.



### TENUTE LUBRIFICANTE INTERNO

Con anelli di tenuta su tutti i modelli. Su richiesta sono disponibili anelli speciali per alte e basse temperature (la serie inox utilizza anelli in silicone).



### LUBRIFICAZIONE

I rinvii vengono forniti già equipaggiati di lubrificante, le grandezze 1 con grasso permanente, tutte le altre grandezze con olio. Sono disponibili olii e grassi speciali per applicazioni specifiche.



## PRESENTATION

DZ and ZP right-angle drivers are designed for industrial applications where rotary power must be transferred between two shafts at right-angles to each other. DZ and ZP series units are available in 9 different sizes with 2 or 3 outputs with: 1:1 and 1:2 and 1:3 transmission ratios. Besides the standard series we also manufacture a special range of angle bevel gears to customer's specifications. For some examples, please refer to the last 8 pages of the catalogue. For further information, contact our Technical Sales Office.

## FEATURES

### HOUSING

Single-piece aluminium alloy casting with 4 or 6 mounting points and 3 or 4 centering conditions. A stainless steel version is also available.

### GEARS

SPIRAL bevel gears cut on GLEASON hobbing machines to ensure maximum load capacity. Nickel-chrome steel gears with surface case-hardened gear teeth; this ensures maximum service life while leaving the tooth core tough and flexible to resist mechanical shocks. Units are manufactured with backlash tolerances to ensure perfect gear engagement and silent operation. Backlash tolerances can be reduced to a minimum of 5' if specifically requested; ask for details of special prices and delivery conditions on these orders.

### SHAFTS

Manufactured in steel with 80 Kg/mm<sup>2</sup> surface treatment for corrosion protection. Shaft coupling on the power take-off is by ISO standard keyways (except for Size 1 and 201). Keyways can be made at any angle. A stainless steel version is also available.

### BEARING

Large bearings in deep races. In specific cases, tapered rollers and/or bias bearings are used.

### OIL SEALS

Oil seal rings are fitted to all models. Special seal rings for high and low temperatures are available upon request (Silicon rings are used in the stainless steel version).

### LUBRICATION

Units are supplied already filled with lubricant. Size 1 units are filled with long-life grease; all other sizes are oil filled. For specific applications, special oils and greases are available.

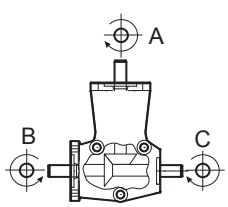
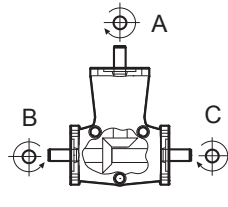
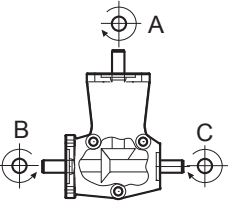
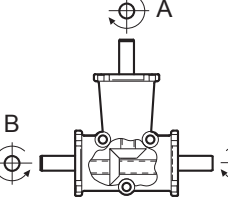
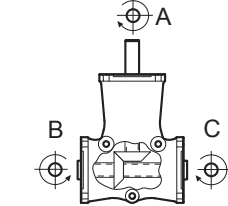
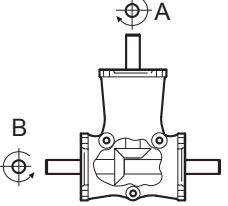
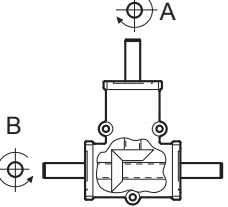
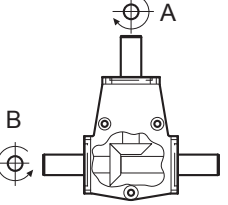


## IDENTIFICAZIONE

Le tabelle 1 a seguito riportate per ogni modello indicano: il diametro dell'albero, il rapporto di trasmissione, **l'albero di entrata A**, gli alberi di uscita B, C o D il senso di rotazione (guardando frontalmente l'albero). **L'albero A per convenzione è considerato come albero di entrata**, nei modelli con rapporto 1/2 1/3 è l'albero veloce.

## IDENTIFICATION

Table 1 shows the following information for each model; the shaft diameter, the transmission ratio, **the input shaft A**, the output shaft B, C or D and the direction of rotation (front view to the shaft). **In accordance with accepted usage, shaft A is the input shaft**; on models with a 1:2 and 1:3 ratio, shaft A is the fast shaft.

| TABELLA<br>TABLE | 1   | mod. DZ | Albero  | Rapp. | Entrata | Uscita | Modello      | Peso   |
|------------------|---|---------|---------|-------|---------|--------|--------------|--------|
|                  |   |         | Shaft   | Ratio | In      | Out    | Model        | Weight |
| 1                |    |         | Ø 8     | 1/1   | A       | B      | DZ 10S-2FAB- | Kg 0.3 |
|                  |   |         | Ø 8     | 1/1   | A       | C      | DZ 10FS2FAC- |        |
|                  |   |         | Ø 8     | 1/2   | A       | B      | DZ 12S-2FAB- |        |
|                  |   |         | Ø 8     | 1/2   | A       | C      | DZ 12FS2FAC- |        |
|                  |   |         | Ø 8     | 1/1   | A       | B - C  | DZ 11-2FABC  |        |
|                  |   |         | Ø 8     | 1/2   | A       | B - C  | DZ 13-2FABC  |        |
| 1                |    |         | Ø 8     | 1/1   | A       | B      | DZ 10S-3FAB- | Kg 0.3 |
|                  |   |         | Ø 8     | 1/1   | A       | C      | DZ 10FS3FAC- |        |
|                  |   |         | Ø 8     | 1/2   | A       | B      | DZ 12S-3FAB- |        |
|                  |   |         | Ø 8     | 1/2   | A       | C      | DZ 12FS3FAC- |        |
|                  |   |         | Ø 8     | 1/1   | A       | B - C  | DZ 11-3FABC  |        |
|                  |   |         | Ø 8     | 1/2   | A       | B - C  | DZ 13-3FABC  |        |
| 2                |   |         | Ø 15    | 1/1   | A       | B      | DZ 20S-2FAB- | Kg 1.1 |
|                  |   |         | Ø 15    | 1/1   | A       | C      | DZ 20FS2FAC- |        |
|                  |   |         | Ø 15    | 1/2   | A       | B      | DZ 22S-2FAB- |        |
|                  |   |         | Ø 15    | 1/2   | A       | C      | DZ 22FS2FAC- |        |
|                  |   |         | Ø 15    | 1/1   | A       | B - C  | DZ 21-2FABC  |        |
|                  |   |         | Ø 15    | 1/2   | A       | B - C  | DZ 23-2FABC  |        |
| 2                |  |         | Ø 15    | 1/1   | A       | B      | DZ 20S-3FAB- | Kg 1.1 |
|                  |   |         | Ø 15    | 1/1   | A       | C      | DZ 20FS3FAC- |        |
|                  |   |         | Ø 15    | 1/2   | A       | B      | DZ 22S-3FAB- |        |
|                  |   |         | Ø 15    | 1/2   | A       | C      | DZ 22FS3FAC- |        |
|                  |   |         | Ø 15    | 1/1   | A       | B - C  | DZ 21-3FABC  |        |
|                  |   |         | Ø 15    | 1/2   | A       | B - C  | DZ 23-3FABC  |        |
| 3                |  |         | Ø 19-20 | 1/1   | A       | B - C  | DZ 311-3FABC | Kg 3.3 |
|                  |   |         |         |       |         |        |              |        |
| 3                |  |         | Ø 20    | 1/1   | A       | B      | DZ 30S-3FAB- | Kg 3.4 |
|                  |   |         | Ø 20    | 1/1   | A       | C      | DZ 30FS3FAC- |        |
|                  |   |         | Ø 20    | 1/2   | A       | B      | DZ 32S-3FAB- |        |
|                  |   |         | Ø 20    | 1/2   | A       | C      | DZ 32FS3FAC- |        |
|                  |   |         | Ø 20    | 1/1   | A       | B - C  | DZ 31-3FABC  |        |
|                  |   |         | Ø 20    | 1/2   | A       | B - C  | DZ 33-3FABC  |        |
| 4                |  |         | Ø 25    | 1/1   | A       | B      | DZ 40S-3FAB- | Kg 5.5 |
|                  |   |         | Ø 25    | 1/1   | A       | C      | DZ 40FS3FAC- |        |
|                  |   |         | Ø 25    | 1/2   | A       | B      | DZ 42S-3FAB- |        |
|                  |   |         | Ø 25    | 1/2   | A       | C      | DZ 42FS3FAC- |        |
|                  |   |         | Ø 25    | 1/1   | A       | B - C  | DZ 41-3FABC  |        |
|                  |   |         | Ø 25    | 1/2   | A       | B - C  | DZ 43-3FABC  |        |
| 5                |  |         | Ø 35    | 1/1   | A       | B      | DZ 50S-3FAB- | Kg 8.1 |
|                  |   |         | Ø 35    | 1/1   | A       | C      | DZ 50FS3FAC- |        |
|                  |   |         | Ø 35    | 1/2   | A       | B      | DZ 52S-3FAB- |        |
|                  |   |         | Ø 35    | 1/2   | A       | C      | DZ 52FS3FAC- |        |
|                  |   |         | Ø 35    | 1/1   | A       | B - C  | DZ 51-3FABC  |        |
|                  |   |         | Ø 35    | 1/2   | A       | B - C  | DZ 53-3FABC  |        |



| TABELLA<br>TABLE | 1   | mod. ZP | Albero | Rapp. | Entrata | Uscita    | Modello        | Peso   |   |       |              |        |
|------------------|-----|---------|--------|-------|---------|-----------|----------------|--------|---|-------|--------------|--------|
|                  |     |         | Shaft  | Ratio | In      | Out       | Model          | Weight |   |       |              |        |
| 1                |     |         | Ø 8    | 1/1   | A       | B         | ZP 10S-4PAB-   | Kg 0.6 |   |       |              |        |
|                  |     |         | Ø 8    | 1/1   | A       | C         | ZP 10FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 8    | 1/2   | A       | B         | ZP 12S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 8    | 1/2   | A       | C         | ZP 12FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 8    | 1/1   | A       | B - C     | ZP 11-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 8    | 1/2   | A       | B - C     | ZP 13-4PABC    |        |   |       |              |        |
| 2                |     |         | Ø 14   | 1/1   | A       | B         | ZP 20S-4PAB-   | Kg 2   |   |       |              |        |
|                  |     |         | Ø 14   | 1/1   | A       | C         | ZP 20FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B         | ZP 22S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | C         | ZP 22FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | B         | ZP 24S-4PAB    |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | C         | ZP 24FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/1   | A       | B - C     | ZP 21-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B - C     | ZP 23-4PABC    |        |   |       |              |        |
| 2                |     |         | Ø 14   | 1/1   | A       | B - C     | ZP 211-4P3V-   | Kg 1.9 |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B - C     | ZP 213-4P3V-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | B - C     | ZP 215-4P3V-   |        |   |       |              |        |
| 2                |     |         | Ø 14   | 1/1   | A       | B - C     | ZP 220S-4PABC  | Kg 3.2 |   |       |              |        |
|                  |     |         | Ø 14   | 1/1   | A       | C - D     | ZP 220FS4PACD  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B - C     | ZP 222S-4PABC  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | C - D     | ZP 222FS4PACD  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | B - C     | ZP 224S-4PABC  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | C - D     | ZP 224FS4PACD  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/1   | A       | B - C - D | ZP 221-4PABCD  |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B - C - D | ZP 223-4PABCD  |        |   |       |              |        |
| 2                |     |         | Ø 14   | 1/1   | A       | B - C - D | ZP 211-4P4V-   | Kg 3.1 |   |       |              |        |
|                  |     |         | Ø 14   | 1/2   | A       | B - C - D | ZP 213-4P4V-   |        |   |       |              |        |
|                  |     |         | Ø 14   | 1/3   | A       | B - C - D | ZP 215-4P4V-   |        |   |       |              |        |
| 3                |     |         | Ø 19   | 1/1   | A       | B         | ZP 30S-4PAB-   | Kg 4.5 |   |       |              |        |
|                  |     |         | Ø 19   | 1/1   | A       | C         | ZP 30FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/2   | A       | B         | ZP 32S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/2   | A       | C         | ZP 32FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/3   | A       | B         | ZP 34S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/3   | A       | C         | ZP 34FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/1   | A       | B - C     | ZP 31-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/2   | A       | B - C     | ZP 33-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 19   | 1/3   | A       | B - C     | ZP 35-4PABC    |        |   |       |              |        |
|                  |     |         | 3      |       |         | Ø 19      | 1/1            |        | A | B - C | ZP 311-4P3V- | Kg 4.4 |
|                  |     |         |        |       |         | Ø 19      | 1/2            |        | A | B - C | ZP 313-4P3V- |        |
| Ø 19             | 1/3 | A       |        |       |         | B - C     | ZP 315-4P3V-   |        |   |       |              |        |
| 3                |     |         | Ø 19   | 1/1   | A       | B         | ZP 30 - INVERT | Kg 4.6 |   |       |              |        |
|                  |     |         | Ø 19   | 1/1   | A       | B - C     | ZP 31 - INVERT |        |   |       |              |        |
| 4                |     |         | Ø 24   | 1/1   | A       | B         | ZP 40S-4PAB-   | Kg 4.6 |   |       |              |        |
|                  |     |         | Ø 24   | 1/1   | A       | C         | ZP 40FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/2   | A       | B         | ZP 42S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/2   | A       | C         | ZP 42FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/3   | A       | B         | ZP 44S-4PAB-   |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/3   | A       | C         | ZP 44FS4PAC-   |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/1   | A       | B - C     | ZP 41-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/2   | A       | B - C     | ZP 43-4PABC    |        |   |       |              |        |
|                  |     |         | Ø 24   | 1/3   | A       | B - C     | ZP 45-4PABC    |        |   |       |              |        |



## DETERMINAZIONE DEL RINVIO DA IMPIEGARE

### AVVERTENZE DATI TECNICI

Nella determinazione del rinvio da impiegare oltre alle esigenze puramente tecniche delle potenze in funzione del numero di giri e delle coppie da trasmettere, bisogna tenere conto della gravosità dell'impiego che dipende da molteplici fattori: Ciclo di funzionamento (intermittente, costante, ecc. ecc.), carichi radiali e assiali gravanti sulla estremità degli alberi, temperature max. e min., ambiente (polveroso ecc. ecc.) tipo di lubrificante.

- 1) Determinare il fattore di servizio FS indicato nella tabella 2.
- 2) Calcolare la potenza nominale  $P_n = \text{Potenza effettiva } P_e \times F_s$ .
- 3) Con la velocità in uscita e la potenza effettiva  $P_n$  scegliere a tab. 3 la dimensione ed il rapporto del rinvio da ordinare.
- 4) Controllare che i carichi radiali  $F_r$  e assiali  $F_a$ , applicati al centro della sporgenza di ogni singolo albero o al centro della cavità, non superino i valori riportati in Tabella 4.
- 5) Verificare che la temperatura di esercizio non superi i valori da  $-20^\circ\text{C} \div +80^\circ\text{C}$ .
- 6) Nel caso di rapporto 1/2 o 1/3 non usare il rinvio in moltiplicazione entrando oltre 750 giri/1' nel rapporto 1:2 e 500 giri/1' nel rapporto 1:3.
- 7) In presenza di ambienti particolarmente polverosi e conseguentemente abrasivi evitare l'esposizione diretta del paraolio onde preservarlo per consentire una durata maggiore dello stesso.

## HOW TO SELECT THE CORRECT RIGHT-ANGLE BEVEL GEAR DRIVE FOR YOUR APPLICATION

### TECHNICAL NOTES

Selecting the correct type of angle bevel gear is not simply a question of defining the power required in relation to R.P.M. and the torque to be transmitted. It also involves defining the conditions under which the angle bevel gear will be used. Defining operating conditions involves taking into consideration a number of factors such as the type of operating cycle (intermittent, continuous), radial and axial loads on the shaft ends, maximum and minimum temperatures, ambient conditions (e.g. dust and dirt levels) and the type of lubricant used. To decide the type and size of angle bevel gear required, proceed as follows.

- 1) Use Table 2 to define the Service Factor for your application.
- 2) Calculate the Rated Power ( $P_n$ ):  
 $P_n = P_e \text{ (Horsepower)} \times F.S.$
- 3) On Table 3, use the output speed and the rated power ( $P_n$ ) to select the angle gear size and transmission ratio required for your application.
- 4) Check that the radial  $F_r$  and axial  $F_a$  loads applied at the centre of the protrusion of every single shaft or at the centre of the hollow shaft does not exceed the values shown in table 4.
- 5) Check that the operating temperature does not exceed  $-20^\circ\text{C} \div +80^\circ\text{C}$ .
- 6) If you require a 1/2 or 1/3 ratio, do not use a speed multiplier with an input more than 750 R.P.M. and 500 R.P.M. in ratio 1/2 and 1/3, respectively.
- 7) If the unit is to be used in very dusty conditions, protect the oil seal against direct exposure to dust to prevent abrasive damage which might shorten the working life of the unit.

TABELLA  
TABLE

2

FATTORE DI SERVIZIO  
SERVICE FACTOR  $F_S$



|   | ore di funzionamento al giorno<br>hours of operation per day |     |     |     |
|---|--|-----|-----|-----|
|   | 3  | 8   | 12  | 24  |
| carico uniforme / uniform load                      | 0.7  | 0.9 | 1   | 1.3 |
| carico con urti modesti / load with moderate shocks | 0.9  | 1   | 1.3 | 1.8 |
| carico con urti / load with shocks                  | 1.3  | 1.6 | 1.8 | 2.3 |





| TABELLA 3<br>TABLE   |                | POTENZE APPLICABILI (Pn) Momento torcente max in uscita Mt (albero entrata contrassegnato A)<br>APPLICABLE POWERS (Pn) Max output torque Mt (input shaft sign A) |                  |         |                  |         |                  |         |                  |         |                  |          |                  |          |                  |          |                  |
|--|----------------|--|------------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|----------|------------------|----------|------------------|----------|------------------|
| Giri in uscita<br>Output round                                     |                | 50 rpm   |                  | 100 rpm |                  | 200 rpm |                  | 400 rpm |                  | 800 rpm |                  | 1400 rpm |                  | 2000 rpm |                  | 3000 rpm |                  |
| Coppia in uscita<br>Output torque                                  |                | Mt   | potenza<br>power | Mt      | potenza<br>power | Mt      | potenza<br>power | Mt      | potenza<br>power | Mt      | potenza<br>power | Mt       | potenza<br>power | Mt       | potenza<br>power | Mt       | potenza<br>power |
| Modello<br>Model   | Rapp.<br>Ratio | Nm   | Kw               | Nm      | Kw               | Nm      | Kw               | Nm      | Kw               | Nm      | Kw               | Nm       | Kw               | Nm       | Kw               | Nm       | Kw               |
| Dz 10 - Dz 11  | R 1:1          | 4,7  | 0,02             | 3,9     | 0,04             | 3,3     | 0,07             | 2,8     | 0,12             | 2,3     | 0,19             | 2,0      | 0,30             | 1,8      | 0,39             | 1,7      | 0,53             |
| Dz 600-61  |                | 7,6  | 0,04             | 6,4     | 0,07             | 5,4     | 0,11             | 4,5     | 0,19             | 3,8     | 0,32             | 3,3      | 0,49             | 3,0      | 0,63             | 2,7      | 0,86             |
| Dz 150-01  |                | 8,0  | 0,04             | 6,8     | 0,07             | 5,7     | 0,12             | 4,8     | 0,20             | 4,0     | 0,34             | 3,5      | 0,51             | 3,2      | 0,67             | 2,9      | 0,91             |
| Zp 10 - Zp 11  |                | 9,1  | 0,05             | 7,6     | 0,08             | 6,4     | 0,13             | 5,4     | 0,23             | 4,5     | 0,38             | 4,0      | 0,58             | 3,6      | 0,76             | 3,3      | 1,03             |
| Dz 20 - Dz 21  |                | 16,5   | 0,09             | 13,9    | 0,15             | 11,7    | 0,24             | 9,8     | 0,41             | 8,2     | 0,69             | 7,2      | 1,05             | 6,6      | 1,37             | 5,9      | 1,86             |
| Dz 200-01 - Dz 200-21<br>Dz 505-60<br>Dz 505-70 - Dz 201-01        |                | 27,5   | 0,14             | 23,1    | 0,24             | 19,4    | 0,41             | 16,3    | 0,68             | 13,7    | 1,15             | 12,0     | 1,75             | 10,9     | 2,29             | 9,9      | 3,10             |
| Zp 211-3V<br>Zp 211-4V   |                | 28,8   | 0,15             | 24,2    | 0,25             | 20,3    | 0,43             | 17,1    | 0,72             | 14,4    | 1,20             | 12,5     | 1,83             | 11,4     | 2,39             | 10,3     | 3,25             |
| Zp 20<br>Zp 220-4V<br>Zp 21<br>Zp 221-4V<br>Dz 604-50              |                | 34,5   | 0,18             | 29,0    | 0,30             | 24,4    | 0,51             | 20,5    | 0,86             | 17,2    | 1,44             | 15,0     | 2,20             | 13,7     | 2,87             | 12,4     | 3,89             |
| 512-31   |                | 46,9   | 0,25             | 39,5    | 0,41             | 33,2    | 0,70             | 27,9    | 1,17             | 23,5    | 1,97             | 20,4     | 2,99             | 18,7     | 3,91             | 16,9     | 5,30             |
| Dz 930-01<br>Dz 930-11   |                | 48,9   | 0,26             | 41,1    | 0,43             | 34,5    | 0,72             | 29,0    | 1,22             | 24,4    | 2,05             | 21,2     | 3,11             | 19,4     | 4,07             | 17,6     | 5,51             |
| Dz 30<br>Dz 31<br>Dz 311   |                | 53,1   | 0,28             | 44,6    | 0,47             | 37,5    | 0,79             | 31,6    | 1,32             | 26,5    | 2,22             | 23,1     | 3,38             | 21,1     | 4,42             | 19,1     | 5,99             |
| Zp 311   |                | 75,7   | 0,40             | 63,7    | 0,67             | 53,5    | 1,12             | 45,0    | 1,89             | 37,9    | 3,17             | 32,9     | 4,82             | 30,1     | 6,30             | 27,2     | 8,54             |
| Dz 40 - Zp 30<br>Zp 40 - Dz 41<br>Zp 31 - Zp 41                    |                | 87,3   | 0,46             | 73,4    | 0,77             | 61,8    | 1,29             | 51,9    | 2,17             | 43,7    | 3,66             | 38,0     | 5,56             | 34,7     | 7,27             | 31,4     | 9,86             |
| Dz 50 - Dz 51  |                | 119,5  | 0,63             | 100,5   | 1,05             | 84,5    | 1,77             | 71,0    | 2,98             | 59,7    | 5,00             | 51,9     | 7,61             | 47,5     | 9,95             | 42,9     | 13,48            |
| Dz 270   |                | 4229,5   | 22,14            | 3556,6  | 37,23            | 2990,7  | 62,62            | 2514,9  | 105,31           | 2114,7  | 177,11           | 1838,6   | 269,48           | 1681,8   | 352,13           | 1519,7   | 477,28           |
| Dz 12 - Dz 13  | R 1:2          | 4,0  | 0,02             | 3,4     | 0,04             | 2,8     | 0,06             | 2,4     | 0,10             | 2,0     | 0,17             | 1,7      | 0,26             | 1,6      | 0,33             | 1,4      | 0,45             |
| Zp 12 - Zp 13  |                | 8,9  | 0,05             | 7,5     | 0,08             | 6,3     | 0,13             | 5,3     | 0,22             | 4,4     | 0,37             | 3,9      | 0,57             | 3,5      | 0,74             | 3,2      | 1,00             |
| Dz 22 - Dz 23  |                | 14,6   | 0,08             | 12,3    | 0,13             | 10,3    | 0,22             | 8,7     | 0,36             | 7,3     | 0,61             | 6,3      | 0,93             | 5,8      | 1,21             | 5,2      | 1,65             |
| Zp 213-3V<br>Zp 213-4V   |                | 28,1   | 0,15             | 23,7    | 0,25             | 19,9    | 0,42             | 16,7    | 0,70             | 14,1    | 1,18             | 12,2     | 1,79             | 11,2     | 2,34             | 10,1     | 3,17             |
| Zp 22<br>Zp 222-4V<br>Zp 23<br>Zp 223-4V                           |                | 33,8   | 0,18             | 28,5    | 0,30             | 23,9    | 0,50             | 20,1    | 0,84             | 16,9    | 1,42             | 14,7     | 2,16             | 13,5     | 2,82             | 12,2     | 3,82             |
| Dz 32 - Dz 33  |                | 42,5   | 0,22             | 35,7    | 0,37             | 30,1    | 0,63             | 25,3    | 1,06             | 21,3    | 1,78             | 18,5     | 2,71             | 16,9     | 3,54             | 15,3     | 4,80             |
| Zp 313   |                | 71,3   | 0,37             | 59,9    | 0,63             | 50,4    | 1,06             | 42,4    | 1,77             | 35,6    | 2,98             | 31,0     | 4,54             | 28,3     | 5,93             | 25,6     | 8,04             |
| Dz 42 - Zp 32<br>Zp 42 - Dz 43<br>Zp 33 - Zp 43                    |                | 82,3   | 0,43             | 69,2    | 0,72             | 58,2    | 1,22             | 48,9    | 2,05             | 41,1    | 3,44             | 35,8     | 5,24             | 32,7     | 6,85             | 29,6     | 9,28             |
| Dz 52 - Dz 53  |                | 100,5  | 0,53             | 84,5    | 0,88             | 71,0    | 1,49             | 59,7    | 2,50             | 50,2    | 4,21             | 43,7     | 6,40             | 39,9     | 8,36             | 36,1     | 11,34            |
| Zp 24<br>Zp 25<br>Zp 215-3V<br>Zp 215-4V<br>Zp 224-4V<br>Zp 225-4V | R 1:3          | 27,5   | 0,14             | 23,1    | 0,24             | 19,4    | 0,41             | 16,3    | 0,68             | 13,7    | 1,15             | 12,0     | 1,75             | 10,9     | 2,29             | 9,9      | 3,10             |
| Zp 34<br>Zp 35<br>Zp 315<br>Zp 44<br>Zp 45                         |                | 63,4   | 0,33             | 53,3    | 0,56             | 44,9    | 0,94             | 37,7    | 1,58             | 31,7    | 2,66             | 27,6     | 4,04             | 25,2     | 5,28             | 22,8     | 7,16             |

VALORI NON PREFERENZIALI (Consultare ufficio tecnico) - NON PREFERENTIAL VALUES (please contact our technical dept.)



**TABELLA 4**  
**TABLE**

**CARICHI ESTERNI APPLICABILI IN RELAZIONE ALLE VELOCITÀ**  
**MAX RADIAL AND AXIAL LOAD RELATION R.P.M.**

**Fr = forza radiale** **Fa = forza assiale**  
**Fr = radial load** **Fa = axial load**

| Giri in uscita<br>Output round                                     |                | 50 rpm |       | 100 rpm |      | 200 rpm |      | 400 rpm |      | 800 rpm |      | 1400 rpm |      | 2000 rpm |      | 3000 rpm |      |    |
|--|----------------|--------|-------|---------|------|---------|------|---------|------|---------|------|----------|------|----------|------|----------|------|----|
| Carichi radiali - assiali<br>Radial - axial load                   |                | Fr     | Fa    | Fr      | Fa   | Fr      | Fa   | Fr      | Fa   | Fr      | Fa   | Fr       | Fa   | Fr       | Fa   | Fr       | Fa   |    |
| Modello<br>Model   | Rapp.<br>Ratio | N      | N     | N       | N    | N       | N    | N       | N    | N       | N    | N        | N    | N        | N    | N        | N    |    |
| Dz 10 - Dz 11  | R 1:1          | 139    | 94    | 117     | 79   | 98      | 66   | 83      | 56   | 70      | 47   | 60       | 41   | 55       | 37   | 50       | 34   |    |
| Dz 600-61  |                | 183    | 148   | 154     | 124  | 129     | 105  | 109     | 88   | 91      | 74   | 80       | 64   | 73       | 59   | 66       | 53   |    |
| Dz 150-01  |                | 143    | 143   | 120     | 120  | 101     | 101  | 85      | 85   | 72      | 72   | 62       | 62   | 57       | 57   | 51       | 51   |    |
| Zp 10 - Zp 11  |                | 195    | 158   | 164     | 133  | 138     | 112  | 116     | 94   | 98      | 79   | 85       | 69   | 78       | 63   | 70       | 57   |    |
| Dz 20 - Dz 21  |                | 328    | 220   | 276     | 185  | 232     | 156  | 195     | 131  | 164     | 110  | 142      | 96   | 130      | 87   | 118      | 79   |    |
| Dz 200-01 - Dz 200-21<br>Dz 505-60<br>Dz 505-70 - Dz 201-01        |                | 617    | 412   | 519     | 346  | 436     | 291  | 367     | 245  | 309     | 206  | 268      | 179  | 245      | 164  | 222      | 148  |    |
| Zp 211-3V<br>Zp 211-4V   |                | 430    | 348   | 361     | 293  | 304     | 246  | 256     | 207  | 215     | 174  | 187      | 151  | 171      | 139  | 154      | 125  |    |
| Zp 20<br>Zp 220-4V<br>Zp 21<br>Zp 221-4V<br>Dz 604-50              |                | 516    | 418   | 434     | 351  | 365     | 295  | 307     | 248  | 258     | 209  | 224      | 182  | 205      | 166  | 185      | 150  |    |
| 512-31   |                | 512    | 362   | 431     | 304  | 362     | 256  | 305     | 215  | 256     | 181  | 223      | 157  | 204      | 144  | 184      | 130  |    |
| Dz 930-01<br>Dz 930-11   |                | 470    | 331   | 395     | 278  | 332     | 234  | 279     | 197  | 235     | 165  | 204      | 144  | 187      | 132  | 169      | 119  |    |
| Dz 30<br>Dz 31<br>Dz 311   |                | 684    | 458   | 575     | 385  | 484     | 324  | 407     | 273  | 342     | 229  | 297      | 199  | 272      | 182  | 246      | 165  |    |
| Zp 311   |                | 826    | 554   | 695     | 465  | 584     | 391  | 491     | 329  | 413     | 277  | 359      | 241  | 329      | 220  | 297      | 199  |    |
| Dz 40 - Zp 30<br>Zp 40 - Dz 41<br>Zp 31 - Zp 41                    |                | 953    | 639   | 802     | 537  | 674     | 452  | 567     | 380  | 477     | 319  | 414      | 278  | 379      | 254  | 342      | 229  |    |
| Dz 50 - Dz 51  |                | 1102   | 736   | 927     | 619  | 779     | 520  | 655     | 438  | 551     | 368  | 479      | 320  | 438      | 293  | 396      | 264  |    |
| Dz 270   |                | 12837  | 10390 | 10795   | 8737 | 9077    | 7347 | 7633    | 6178 | 6419    | 5195 | 5581     | 4517 | 5105     | 4132 | 4613     | 3733 |    |
| Dz 12 - Dz 13  |                | R 1:2  | 107   | 76      | 90   | 64      | 76   | 54      | 64   | 45      | 54   | 38       | 47   | 33       | 43   | 30       | 39   | 27 |
| Zp 12 - Zp 13  |                |        | 182   | 110     | 153  | 93      | 129  | 78      | 108  | 66      | 91   | 55       | 79   | 48       | 73   | 44       | 66   | 40 |
| Dz 22 - Dz 23  |                |        | 276   | 168     | 232  | 141     | 195  | 119     | 164  | 100     | 138  | 84       | 120  | 73       | 110  | 67       | 99   | 60 |
| Zp 213-3V<br>Zp 213-4V   | 370            |        | 263   | 311     | 221  | 262     | 186  | 220     | 157  | 185     | 132  | 161      | 114  | 147      | 105  | 133      | 95   |    |
| Zp 22<br>Zp 222-4V<br>Zp 23<br>Zp 223-4V                           | 445            |        | 316   | 374     | 266  | 315     | 224  | 265     | 188  | 223     | 158  | 194      | 137  | 177      | 126  | 160      | 114  |    |
| Dz 32 - Dz 33  | 548            |        | 361   | 461     | 303  | 387     | 255  | 326     | 214  | 274     | 180  | 238      | 157  | 218      | 143  | 197      | 130  |    |
| Zp 313   | 696            |        | 422   | 585     | 355  | 492     | 299  | 414     | 251  | 348     | 211  | 303      | 184  | 277      | 168  | 250      | 152  |    |
| Dz 42 - Zp 32<br>Zp 42 - Dz 43<br>Zp 33 - Zp 43                    | 803            |        | 483   | 675     | 406  | 568     | 341  | 478     | 287  | 402     | 241  | 349      | 210  | 319      | 192  | 289      | 173  |    |
| Dz 52 - Dz 53  | 927            |        | 562   | 779     | 473  | 655     | 397  | 551     | 334  | 463     | 281  | 403      | 244  | 369      | 223  | 333      | 202  |    |
| Zp 24<br>Zp 25<br>Zp 215-3V<br>Zp 215-4V<br>Zp 224-4V<br>Zp 225-4V | R 1:3          |        | 357   | 199     | 301  | 167     | 253  | 141     | 213  | 118     | 179  | 99       | 155  | 86       | 142  | 79       | 128  | 71 |
| Zp 34<br>Zp 35<br>Zp 315<br>Zp 44<br>Zp 45                         |                | 619    | 346   | 521     | 291  | 438     | 245  | 368     | 206  | 310     | 173  | 269      | 151  | 246      | 138  | 222      | 124  |    |

VALORI NON PREFERENZIALI (Consultare ufficio tecnico) - NON PREFERENTIAL VALUES (please contact our technical dept.)

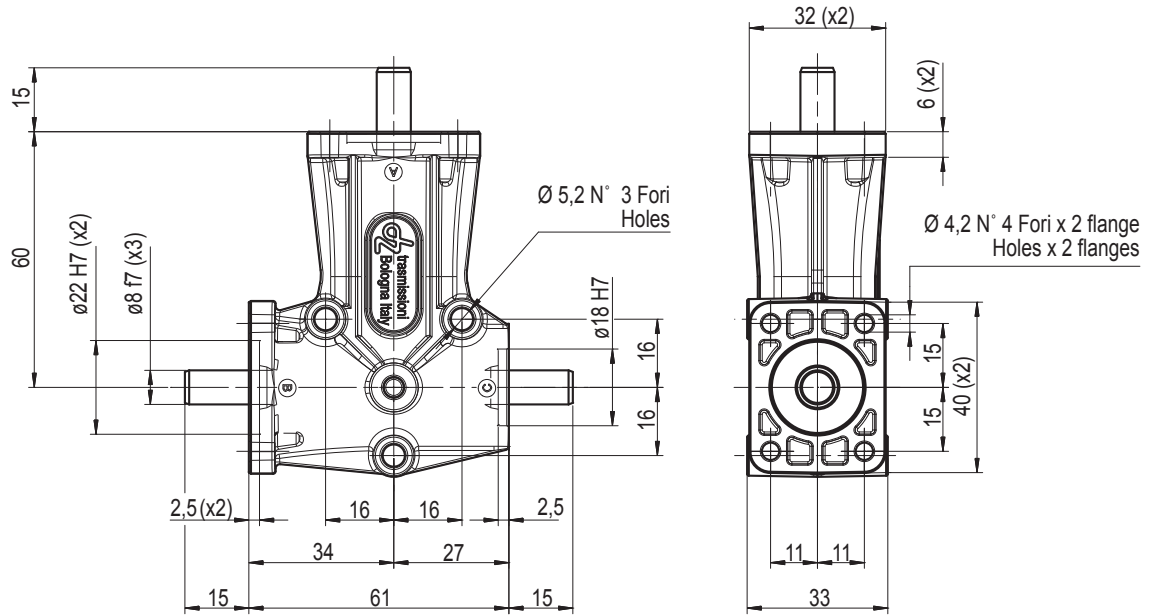
# **trasmissioni**



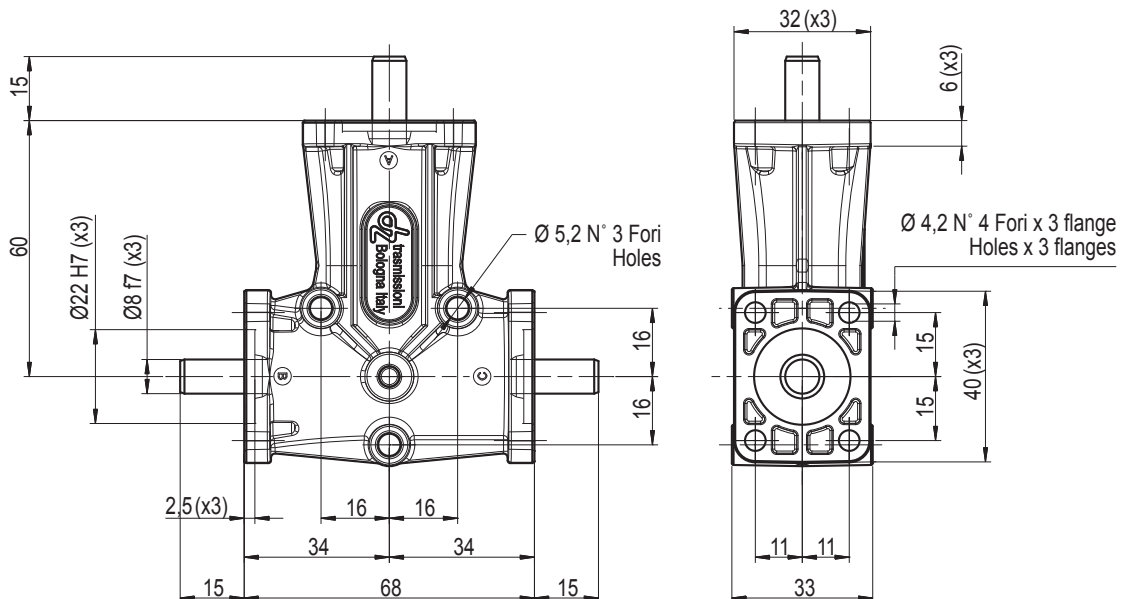
**Serie / Series Dz**



| MOD.           | DZ |  | Rapp. | Entrata | Uscita | Modello         | Peso   |
|----------------|----|--|-------|---------|--------|-----------------|--------|
| MISURA SIZE    | 1  |  | Ratio | In      | Out    | Model           | Weight |
| FLANGE FLANGES | 2  |  | 1/1   | A       | B      | DZ 10S – 2FAB – | Kg 0.3 |
|                |    |  | 1/1   | A       | C      | DZ 10FS2FAC –   |        |
|                |    |  | 1/2   | A       | B      | DZ 12S – 2FAB – |        |
|                |    |  | 1/2   | A       | C      | DZ 12FS2FAC –   |        |
|                |    |  | 1/1   | A       | B – C  | DZ 11 – – 2FABC |        |
|                |    |  | 1/2   | A       | B – C  | DZ 13 – – 2FABC |        |

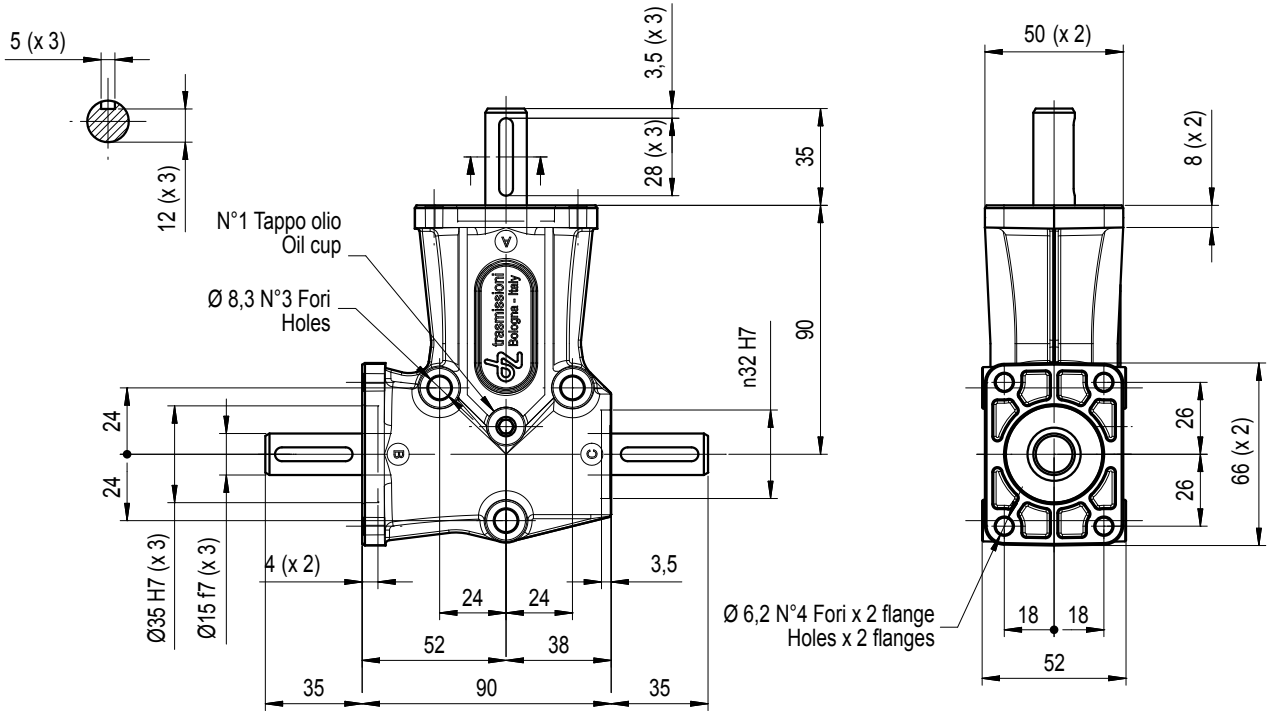
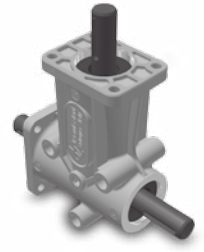
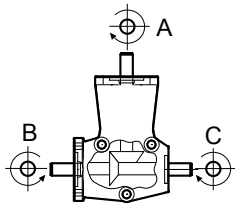


| MOD.           | DZ |  | Rapp. | Entrata | Uscita | Modello          | Peso   |
|----------------|----|--|-------|---------|--------|------------------|--------|
| MISURA SIZE    | 1  |  | Ratio | In      | Out    | Model            | Weight |
| FLANGE FLANGES | 3  |  | 1/1   | A       | B      | DZ 10S – 3FAB –  | Kg 0.3 |
|                |    |  | 1/1   | A       | C      | DZ 10FS3FAC –    |        |
|                |    |  | 1/2   | A       | B      | DZ 12S – 3 FAB – |        |
|                |    |  | 1/2   | A       | C      | DZ 12FS3FAC –    |        |
|                |    |  | 1/1   | A       | B – C  | DZ 11 – – 3FABC  |        |
|                |    |  | 1/2   | A       | B – C  | DZ 13 – – 3FABC  |        |

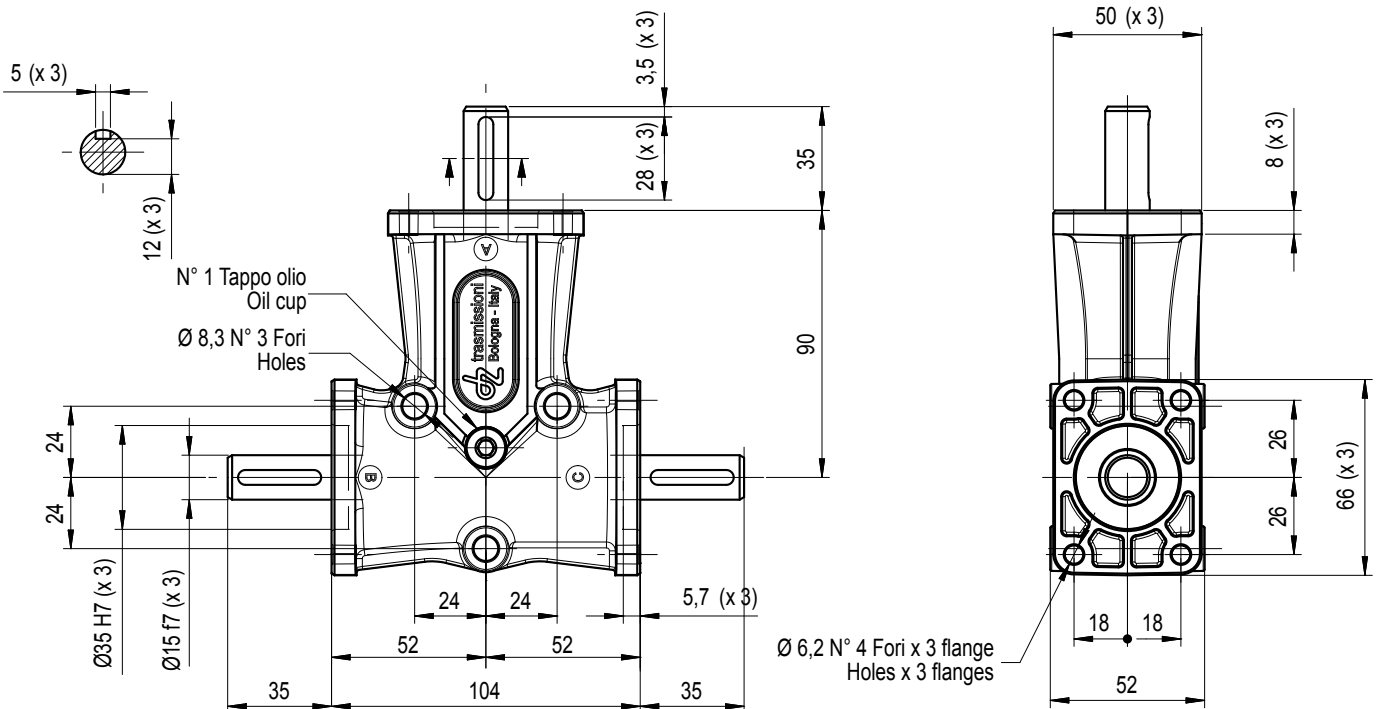
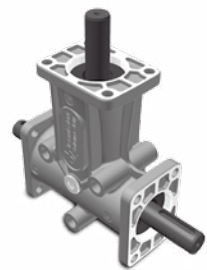
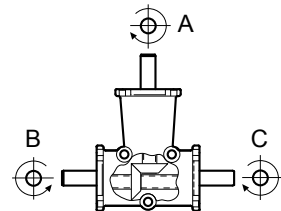




| MOD.              | DZ | Rapp. | Entrata | Uscita | Modello | Peso         |        |
|-------------------|----|-------|---------|--------|---------|--------------|--------|
|                   |    |       | Ratio   | In     | Out     | Model        | Weight |
| MISURA<br>SIZE    | 2  | 2     | 1/1     | A      | B       | DZ 20S-2FAB- | Kg 1.1 |
|                   |    |       | 1/1     | A      | C       | DZ 20FS2FAC- |        |
|                   |    |       | 1/2     | A      | B       | DZ 22S-2FAB- |        |
| FLANGE<br>FLANGES | 2  | 2     | 1/2     | A      | C       | DZ 22FS2FAC- | Kg 1.2 |
|                   |    |       | 1/1     | A      | B - C   | DZ 21--2FABC |        |
|                   |    |       | 1/2     | A      | B - C   | DZ 23--2FABC |        |

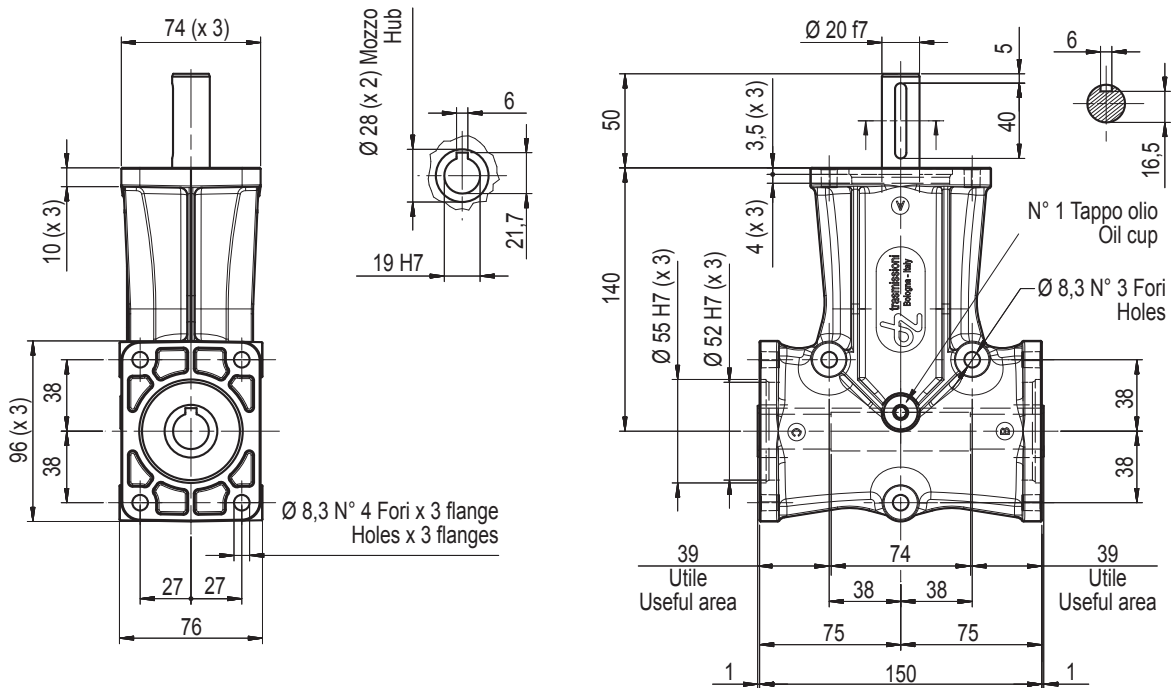


| MOD.              | DZ | Rapp. | Entrata | Uscita | Modello | Peso         |        |
|-------------------|----|-------|---------|--------|---------|--------------|--------|
|                   |    |       | Ratio   | In     | Out     | Model        | Weight |
| MISURA<br>SIZE    | 2  | 3     | 1/1     | A      | B       | DZ 20S-3FAB- | Kg 1.1 |
|                   |    |       | 1/1     | A      | C       | DZ 20FS3FAC- |        |
|                   |    |       | 1/2     | A      | B       | DZ 22S-3FAB- |        |
| FLANGE<br>FLANGES | 3  | 3     | 1/2     | A      | C       | DZ 22FS3FAC- | Kg 1.2 |
|                   |    |       | 1/1     | A      | B - C   | DZ 21--3FABC |        |
|                   |    |       | 1/2     | A      | B - C   | DZ 23--3FABC |        |

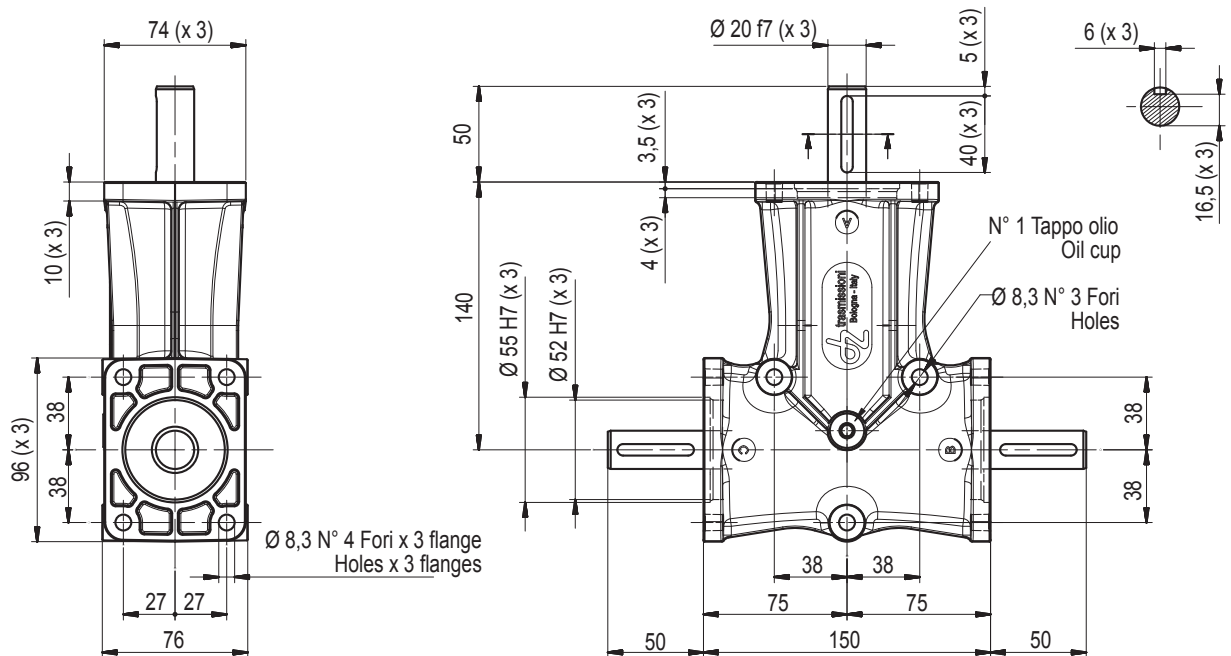




|                                 |           |  |              |                |               |                |               |  |
|---------------------------------|-----------|--|--------------|----------------|---------------|----------------|---------------|--|
| <b>MOD.</b>                     | <b>DZ</b> |  | <b>Rapp.</b> | <b>Entrata</b> | <b>Uscita</b> | <b>Modello</b> | <b>Peso</b>   |  |
| <b>MISURA SIZE</b>              | <b>3</b>  |  | <i>Ratio</i> | <i>In</i>      | <i>Out</i>    | <i>Model</i>   | <i>Weight</i> |  |
| <b>ALBERO CAVO HOLLOW SHAFT</b> |           |  | 1/1          | A              | B-C           | DZ 311-3FABC   | Kg 3.3        |  |
|                                 |           |  |              |                |               |                |               |  |

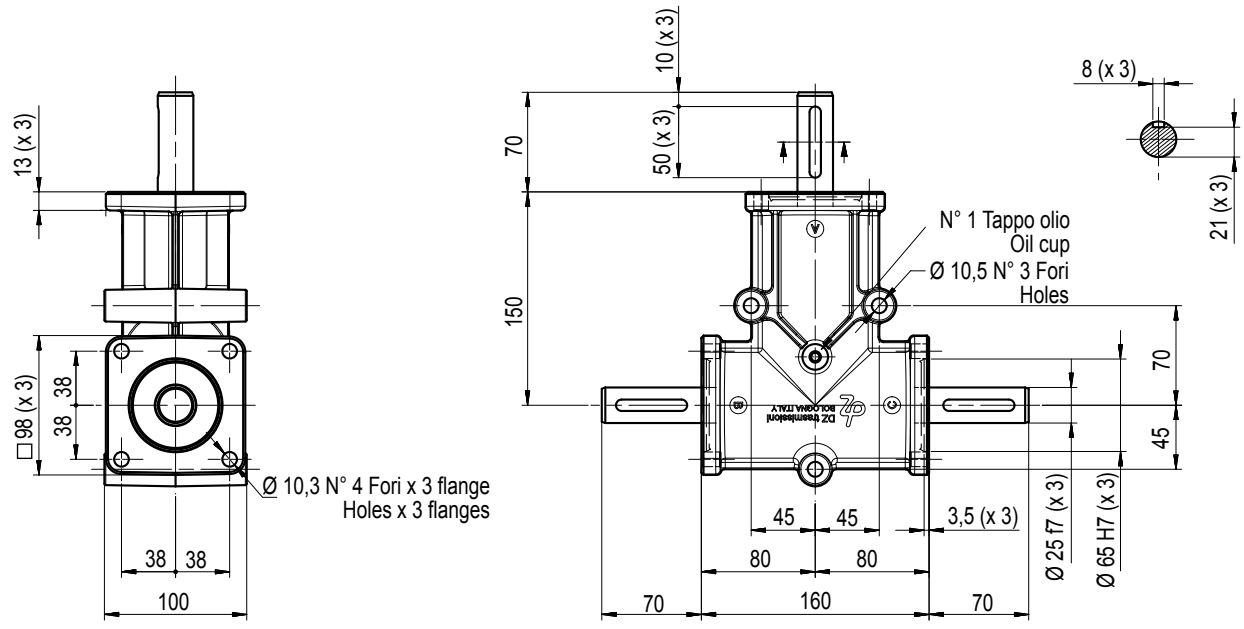


|                    |           |     |              |                |               |                |               |  |
|--------------------|-----------|-----|--------------|----------------|---------------|----------------|---------------|--|
| <b>MOD.</b>        | <b>DZ</b> |     | <b>Rapp.</b> | <b>Entrata</b> | <b>Uscita</b> | <b>Modello</b> | <b>Peso</b>   |  |
| <b>MISURA SIZE</b> | <b>3</b>  |     | <i>Ratio</i> | <i>In</i>      | <i>Out</i>    | <i>Model</i>   | <i>Weight</i> |  |
|                    |           |     | 1/1          | A              | B             | DZ 30S-3FAB-   | Kg 3.4        |  |
|                    |           | 1/1 | A            | C              | DZ 30FS3FAC-  |                |               |  |
|                    |           | 1/2 | A            | B              | DZ 32S-3FAB-  | Kg 3.5         |               |  |
|                    |           | 1/2 | A            | C              | DZ 32FS3FAC-  |                |               |  |
|                    |           | 1/1 | A            | B-C            | DZ 31--3FABC  | Kg 3.5         |               |  |
|                    |           | 1/2 | A            | B-C            | DZ 33--3FABC  |                |               |  |

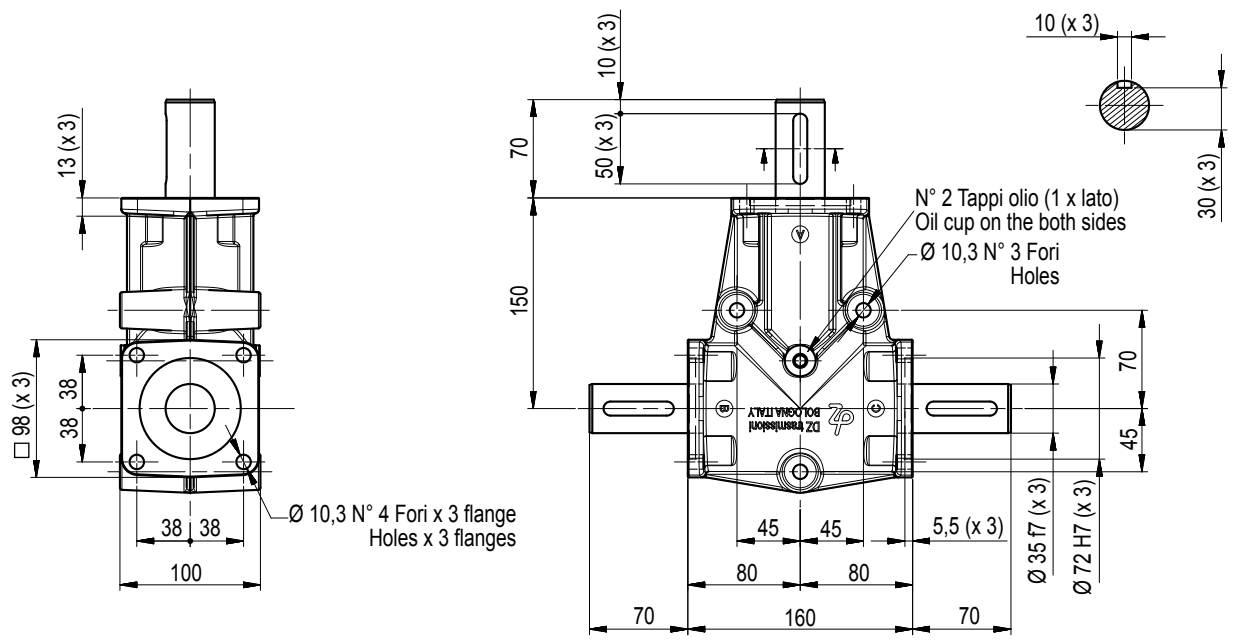
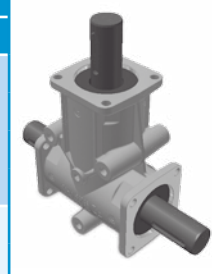




| MOD.           | DZ |  | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|--|-------|---------|--------|--------------|--------|
|                |    |  | Ratio | In      | Out    | Model        | Weight |
| MISURA<br>SIZE | 4  |  | 1/1   | A       | B      | DZ 40S-3FAB- | Kg 5.5 |
|                |    |  | 1/1   | A       | C      | DZ 40FS3FAC- |        |
|                |    |  | 1/2   | A       | B      | DZ 42S-3FAB- |        |
|                |    |  | 1/2   | A       | C      | DZ 42FS3FAC- |        |
|                |    |  | 1/1   | A       | B - C  | DZ 41--3FABC | Kg 5.8 |
|                |    |  | 1/2   | A       | B - C  | DZ 43--3FABC |        |



| MOD.           | DZ |  | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|--|-------|---------|--------|--------------|--------|
|                |    |  | Ratio | In      | Out    | Model        | Weight |
| MISURA<br>SIZE | 5  |  | 1/1   | A       | B      | DZ 50S-3FAB- | Kg 8.1 |
|                |    |  | 1/1   | A       | C      | DZ 50FS3FAC- |        |
|                |    |  | 1/2   | A       | B      | DZ 52S-3FAB- |        |
|                |    |  | 1/2   | A       | C      | DZ 52FS3FAC- |        |
|                |    |  | 1/1   | A       | B - C  | DZ 51--3FABC | Kg 8.8 |
|                |    |  | 1/2   | A       | B - C  | DZ 53--3FABC |        |







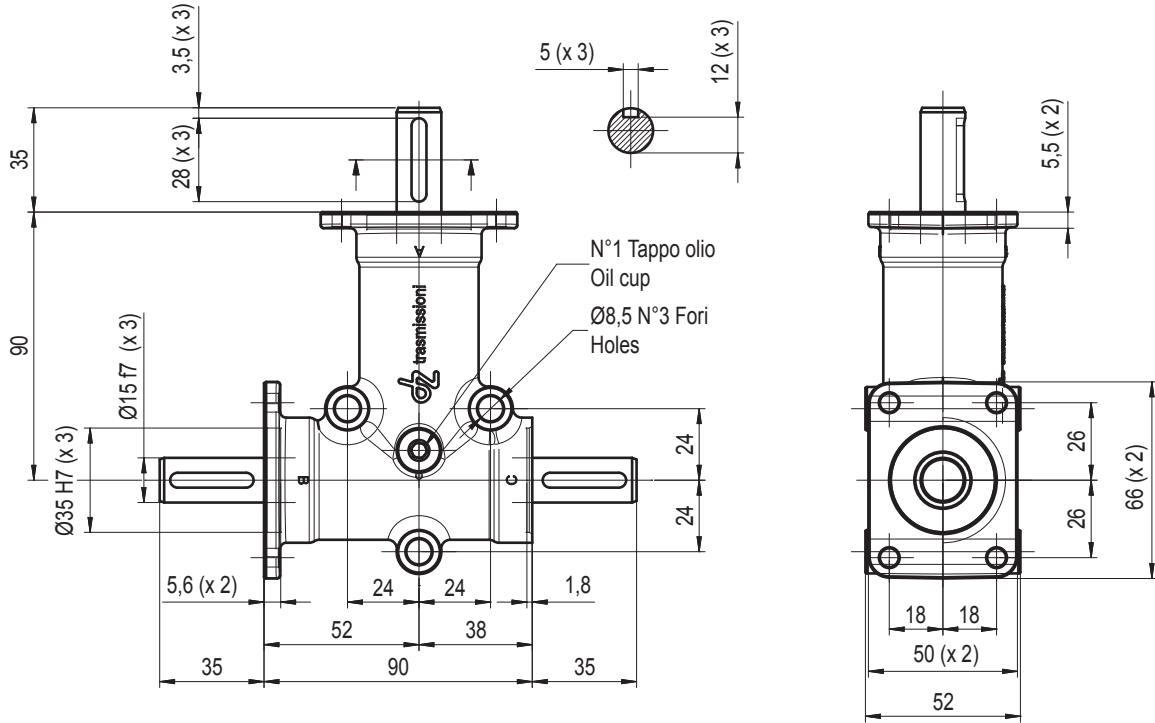
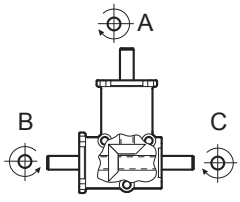
# **trasmissioni**



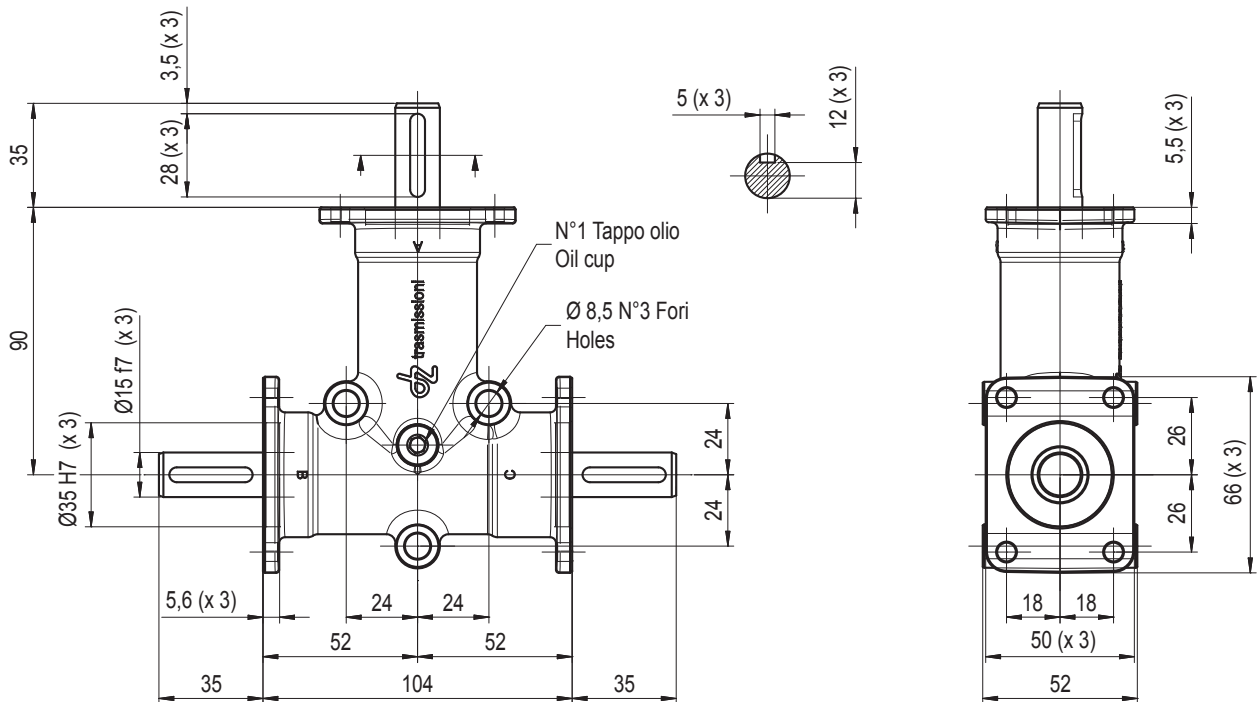
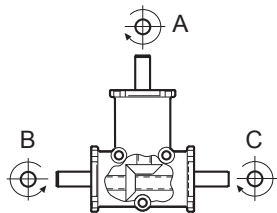
**Serie Inox / Inox Series Dz**



| MOD.              | DZ | Rapp. | Entrata | Uscita | Modello           | Peso    |
|-------------------|----|-------|---------|--------|-------------------|---------|
|                   |    |       | Ratio   | In     | Out               | Model   |
| MISURA<br>SIZE    | 2  | 1/1   | A       | B      | DZ 20S-2FAB-INOX  | Kg 1.25 |
|                   |    | 1/1   | A       | C      | DZ 20FS2FAC-INOX  |         |
| FLANGE<br>FLANGES | 2  | 1/2   | A       | B      | DZ 22S-2FAB-INOX  |         |
|                   |    | 1/2   | A       | C      | DZ 22FS2FAC-INOX  |         |
|                   |    | 1/1   | A       | B - C  | DZ 21--2FABC-INOX | Kg 1.35 |
|                   |    | 1/2   | A       | B - C  | DZ 23--2FABC-INOX |         |



| MOD.              | DZ | Rapp. | Entrata | Uscita | Modello           | Peso    |
|-------------------|----|-------|---------|--------|-------------------|---------|
|                   |    |       | Ratio   | In     | Out               | Model   |
| MISURA<br>SIZE    | 2  | 1/1   | A       | B      | DZ 20S-3FAB-INOX  | Kg 1.31 |
|                   |    | 1/1   | A       | C      | DZ 20FS3FAC-INOX  |         |
| FLANGE<br>FLANGES | 3  | 1/2   | A       | B      | DZ 22S-3FAB-INOX  |         |
|                   |    | 1/2   | A       | C      | DZ 22FS3FAC-INOX  |         |
|                   |    | 1/1   | A       | B - C  | DZ 21--3FABC-INOX | Kg 1.41 |
|                   |    | 1/2   | A       | B - C  | DZ 23--3FABC-INOX |         |



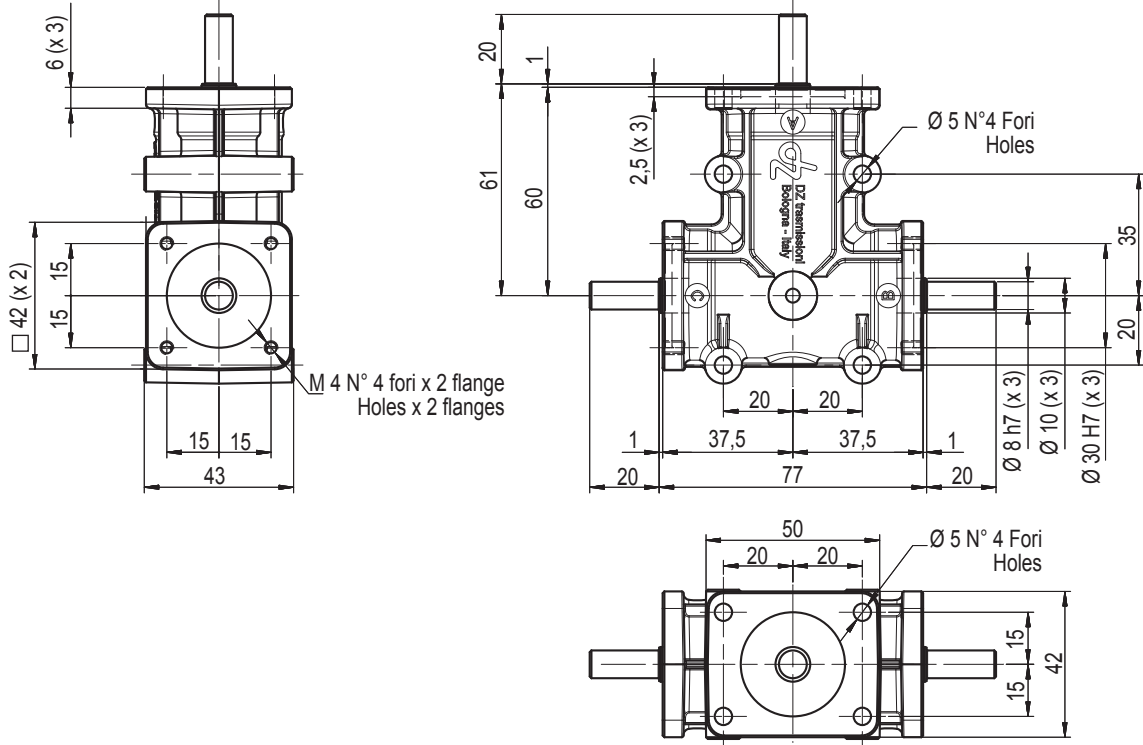
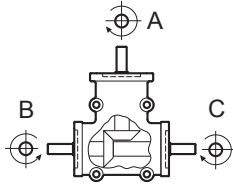
# **trasmissioni**



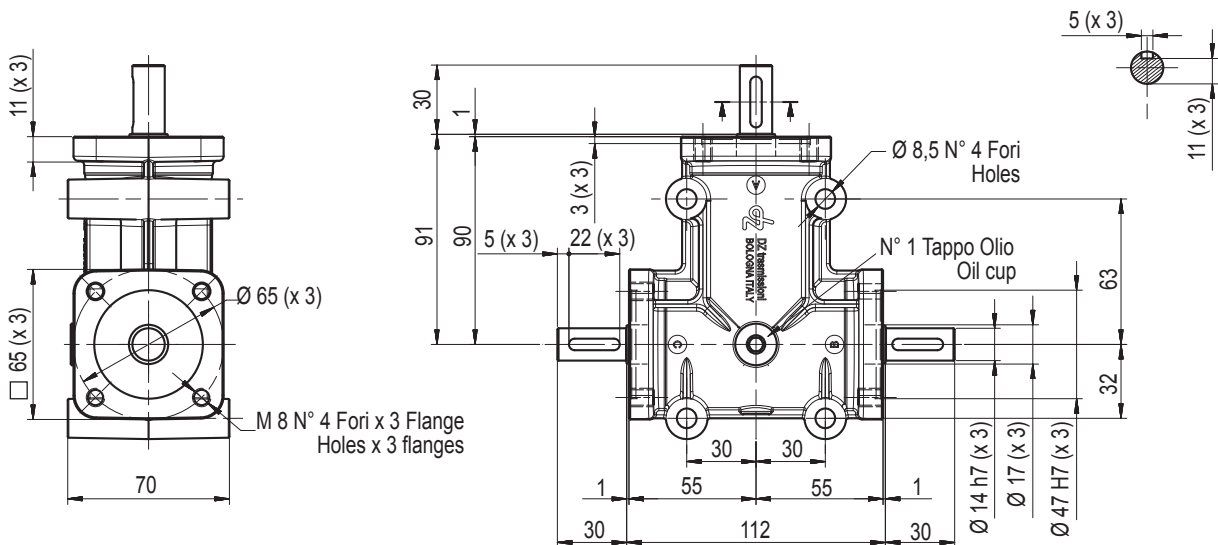
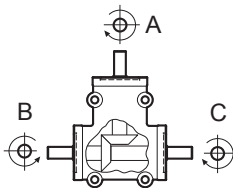
**Serie / Series Zp**



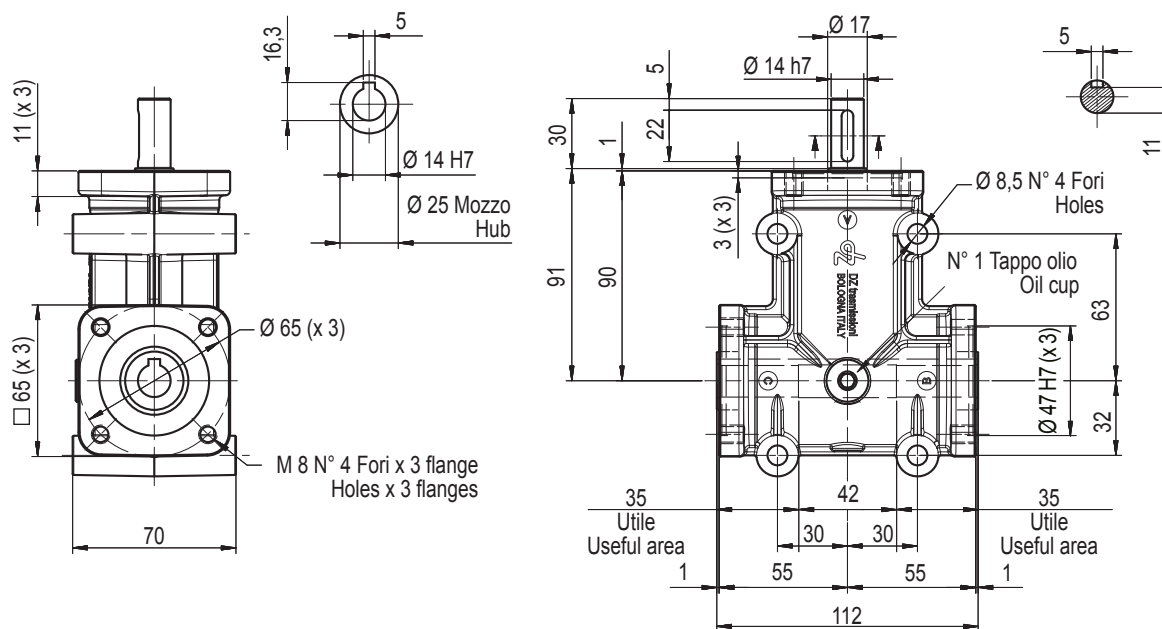
| MOD.           | ZP | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|-------|---------|--------|--------------|--------|
| MISURA<br>SIZE | 1  | Ratio | In      | Out    | Model        | Weight |
|                |    | 1/1   | A       | B      | ZP 10S-4PAB- | Kg 0.6 |
|                |    | 1/1   | A       | C      | ZP 10FS4PAC- |        |
|                |    | 1/2   | A       | B      | ZP 12S-4PAB- |        |
|                |    | 1/2   | A       | C      | ZP 12FS4PAC- |        |
|                |    | 1/1   | A       | B - C  | ZP 11--4PABC |        |
|                |    | 1/2   | A       | B - C  | ZP 13--4PABC |        |



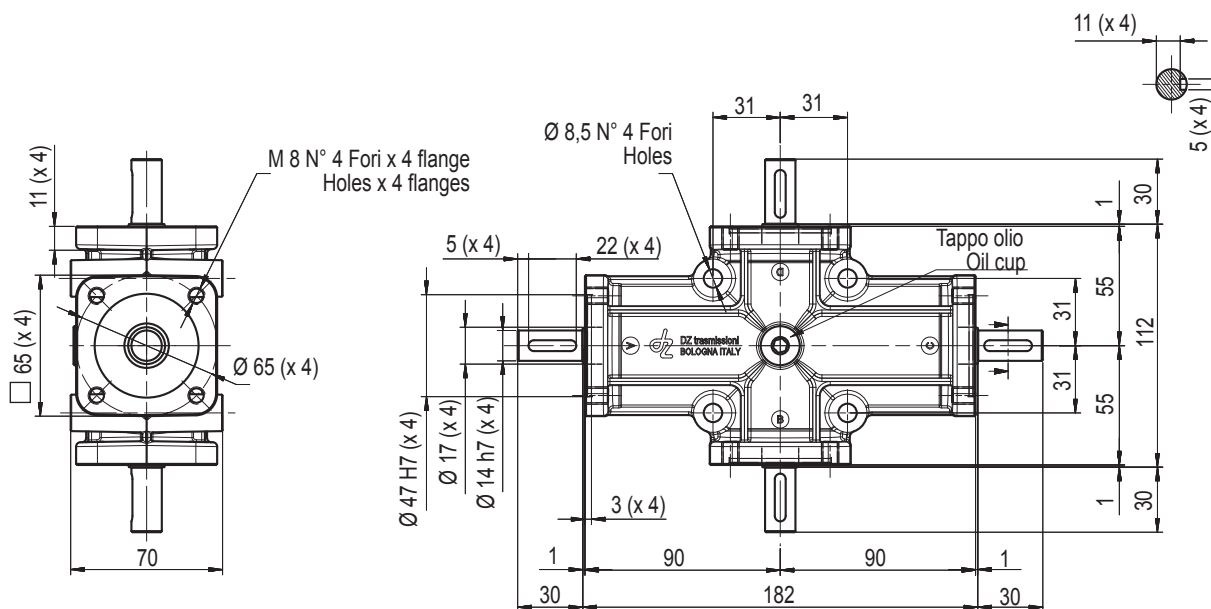
| MOD.           | ZP | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|-------|---------|--------|--------------|--------|
| MISURA<br>SIZE | 2  | Ratio | In      | Out    | Model        | Weight |
|                |    | 1/1   | A       | B      | ZP 20S-4PAB- | Kg 2   |
|                |    | 1/1   | A       | C      | ZP 20FS4PAC- |        |
|                |    | 1/2   | A       | B      | ZP 22S-4PAB- |        |
|                |    | 1/2   | A       | C      | ZP 22FS4PAC- |        |
|                |    | 1/3   | A       | B      | ZP 24S-4PAB- |        |
|                |    | 1/3   | A       | C      | ZP 24FS4PAC- |        |
|                |    | 1/1   | A       | B - C  | ZP 21--4PABC |        |
|                |    | 1/2   | A       | B - C  | ZP 23--4PABC |        |
|                |    | 1/3   | A       | B - C  | ZP 25--4PABC |        |



| MOD.           | ZP | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|-------|---------|--------|--------------|--------|
| MISURA<br>SIZE | 2  | Ratio | In      | Out    | Model        | Weight |
|                |    | 1/1   | A       | B - C  | ZP 211-4P3V- | Kg 2   |
|                |    | 1/2   | A       | B - C  | ZP 213-4P3V- |        |
|                |    | 1/3   | A       | B - C  | ZP 215-4P3V- |        |

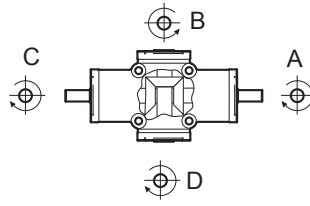

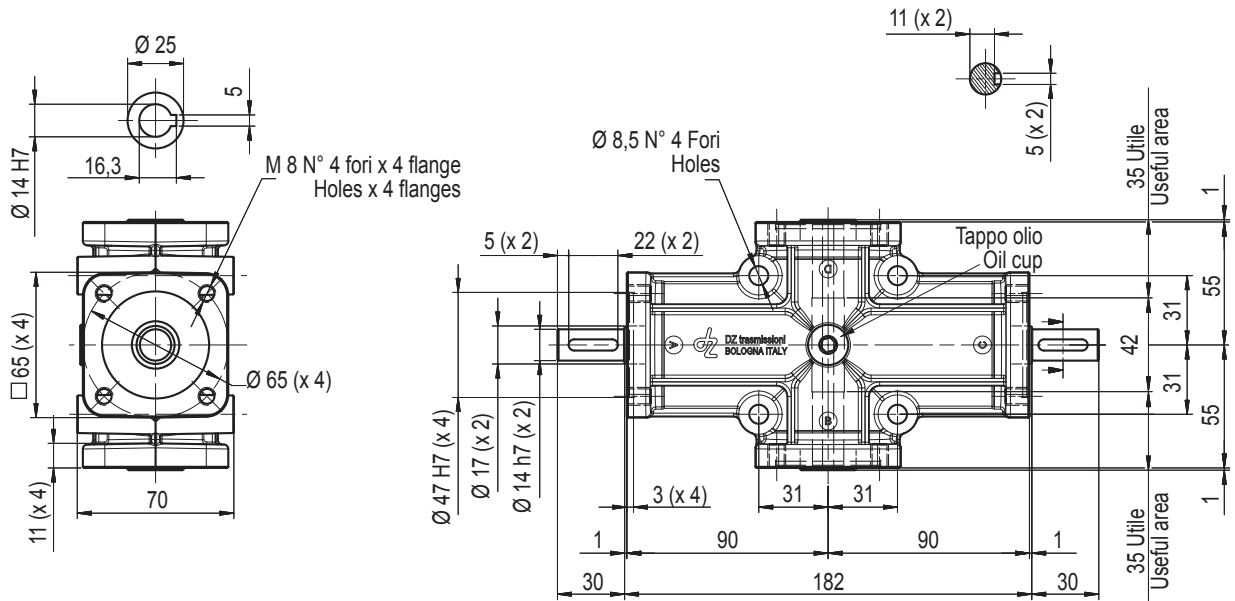


| MOD.           | ZP | Rapp. | Entrata | Uscita    | Modello       | Peso   |
|----------------|----|-------|---------|-----------|---------------|--------|
| MISURA<br>SIZE | 2  | Ratio | In      | Out       | Model         | Weight |
|                |    | 1/1   | A       | B - C     | ZP 220S-4PABC | Kg 3.2 |
|                |    | 1/1   | A       | C - D     | ZP 220FS4PACD |        |
|                |    | 1/2   | A       | B - C     | ZP 222S-4PABC |        |
|                |    | 1/2   | A       | C - D     | ZP 222FS4PACD |        |
|                |    | 1/3   | A       | B - C     | ZP 224S-4PABC |        |
|                |    | 1/3   | A       | C - D     | ZP 224FS4PACD |        |
|                |    | 1/1   | A       | B - C - D | ZP 221-4PABCD |        |
|                |    | 1/2   | A       | B - C - D | ZP 223-4PABCD |        |
|                |    | 1/3   | A       | B - C - D | ZP 225-4PABCD |        |

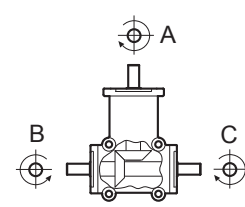

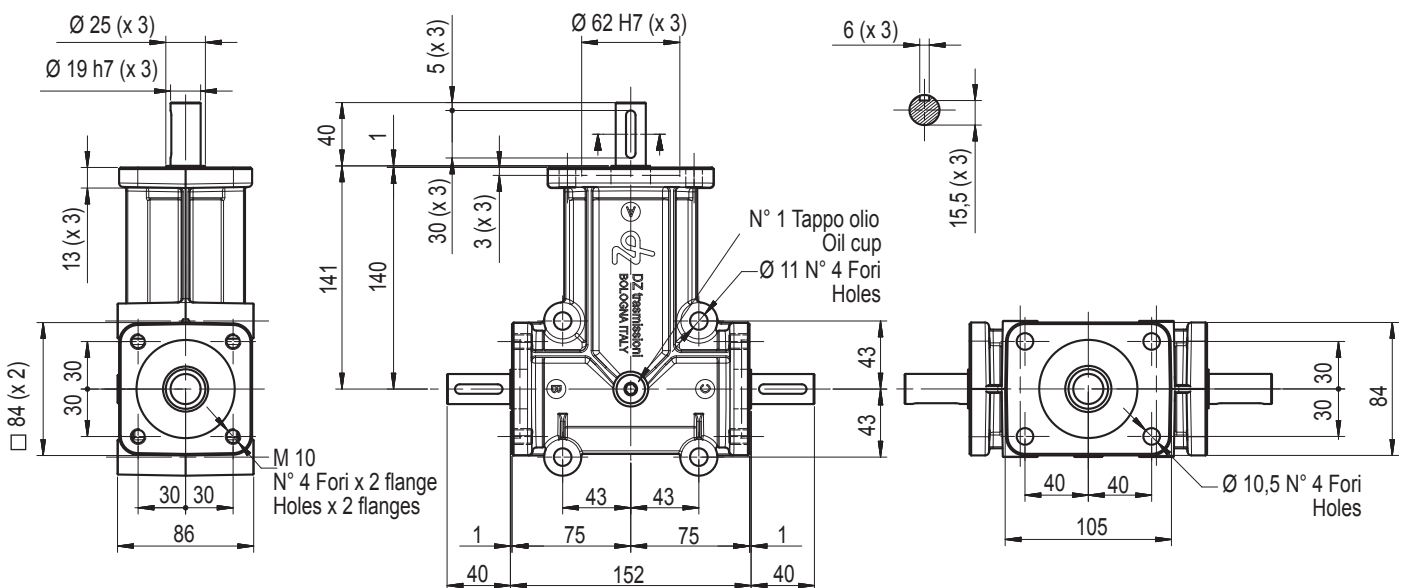




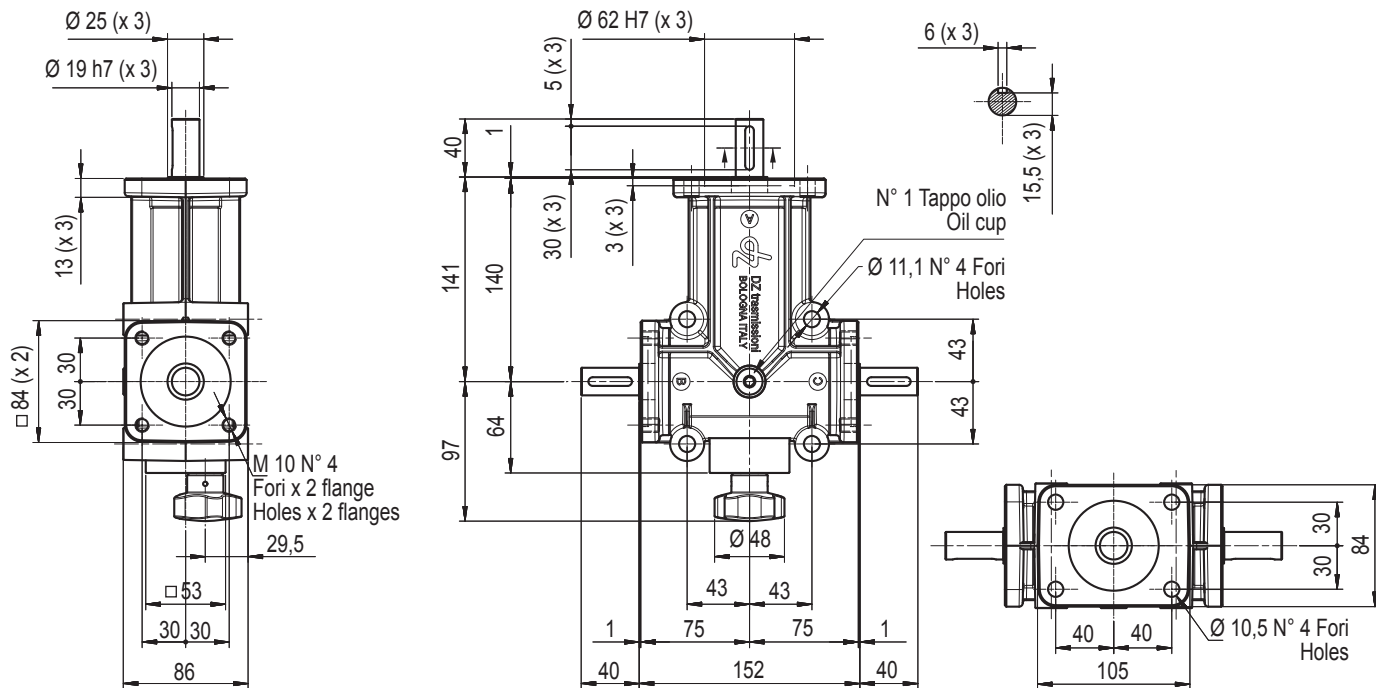
| MOD.        | ZP | Rapp. | Entrata | Uscita    | Modello      | Peso   |
|-------------|----|-------|---------|-----------|--------------|--------|
| MISURA SIZE | 2  | Ratio | In      | Out       | Model        | Weight |
|             |    | 1/1   | A       | B - C - D | ZP 211-4P4V- | Kg 3   |
|             |    | 1/2   | A       | B - C - D | ZP 213-4P4V- |        |
|             |    | 1/3   | A       | B - C - D | ZP 215-4P4V- |        |

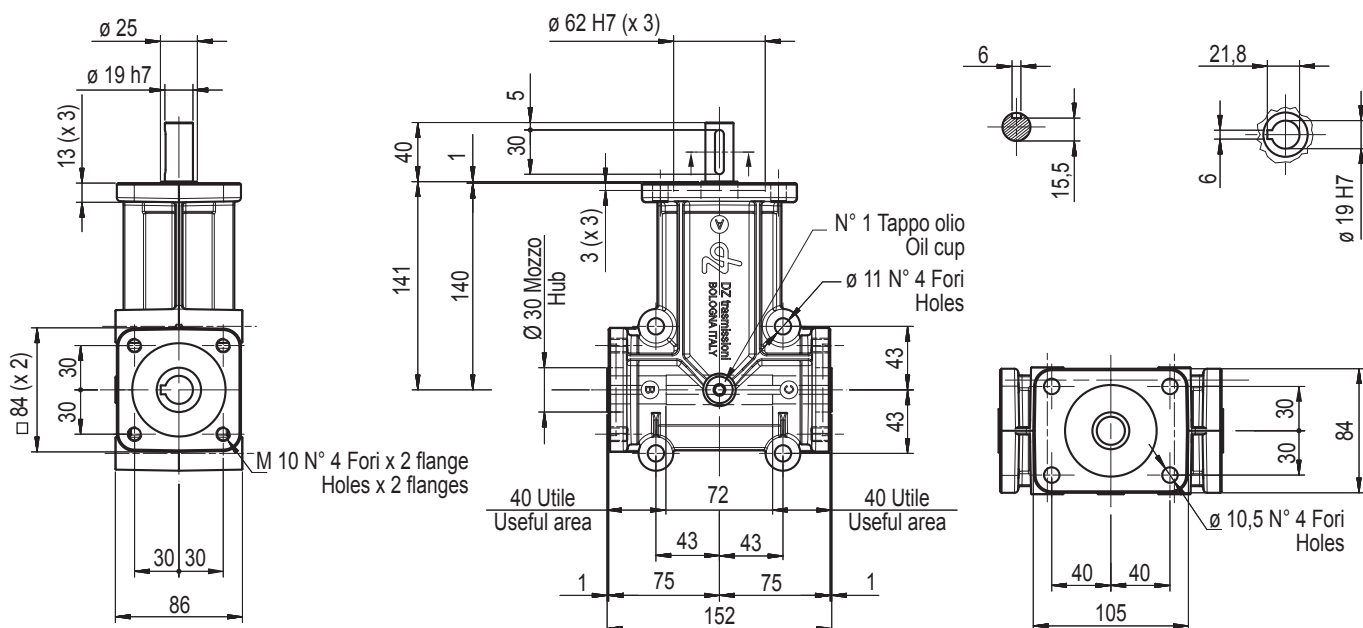
| MOD.        | ZP | Rapp. | Entrata | Uscita | Modello      | Peso   |
|-------------|----|-------|---------|--------|--------------|--------|
| MISURA SIZE | 3  | Ratio | In      | Out    | Model        | Weight |
|             |    | 1/1   | A       | B      | ZP 30S-4PAB- | Kg 4.5 |
|             |    | 1/1   | A       | C      | ZP 30FS4PAC- |        |
|             |    | 1/2   | A       | B      | ZP 32S-4PAB- |        |
|             |    | 1/2   | A       | C      | ZP 32FS4PAC- |        |
|             |    | 1/3   | A       | B      | ZP 34S-4PAB- |        |
|             |    | 1/3   | A       | C      | ZP 34FS4PAC- |        |
|             |    | 1/1   | A       | B - C  | ZP 31--4PABC |        |
|             |    | 1/2   | A       | B - C  | ZP 33--4PABC |        |
|             |    | 1/3   | A       | B - C  | ZP 35--4PABC |        |

|                             |           |  |              |                |               |                |               |
|-----------------------------|-----------|--|--------------|----------------|---------------|----------------|---------------|
| <b>MOD.</b>                 | <b>ZP</b> |  | <b>Rapp.</b> | <b>Entrata</b> | <b>Uscita</b> | <b>Modello</b> | <b>Peso</b>   |
| <b>MISURA SIZE</b>          | <b>3</b>  |  | <b>Ratio</b> | <b>In</b>      | <b>Out</b>    | <b>Model</b>   | <b>Weight</b> |
| <b>INVERTITORE REVERSER</b> |           |  |              |                |               |                |               |
|                             |           |  | 1/1          | A              | B             | ZP 30 – INVERT | Kg 4.5        |
|                             |           |  | 1/1          | A              | B – C         | ZP 31 – INVERT |               |
|                             |           |  |              |                |               |                |               |

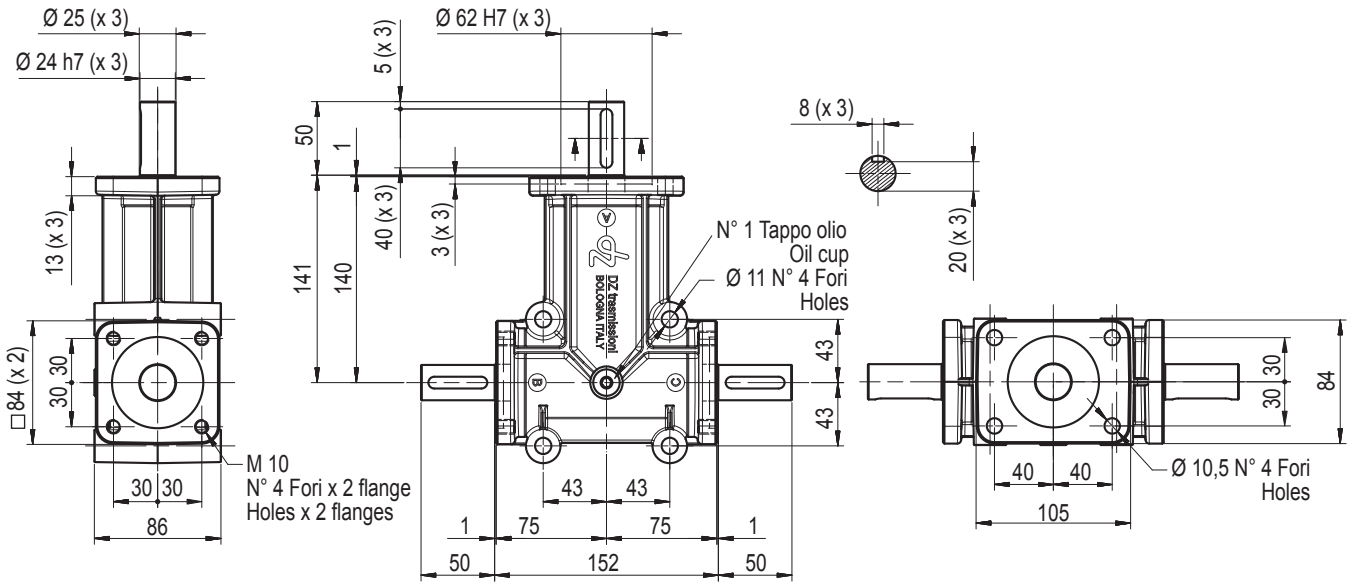
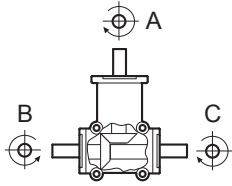


|                    |           |  |              |                |               |                 |               |
|--------------------|-----------|--|--------------|----------------|---------------|-----------------|---------------|
| <b>MOD.</b>        | <b>ZP</b> |  | <b>Rapp.</b> | <b>Entrata</b> | <b>Uscita</b> | <b>Modello</b>  | <b>Peso</b>   |
| <b>MISURA SIZE</b> | <b>3</b>  |  | <b>Ratio</b> | <b>In</b>      | <b>Out</b>    | <b>Model</b>    | <b>Weight</b> |
|                    |           |  |              |                |               |                 |               |
|                    |           |  | 1/1          | A              | B – C         | ZP 311 – 4P3V – | Kg 4.5        |
|                    |           |  | 1/2          | A              | B – C         | ZP 313 – 4P3V – |               |
|                    |           |  | 1/3          | A              | B – C         | ZP 315 – 4P3V – |               |





| MOD.           | ZP | Rapp. | Entrata | Uscita | Modello      | Peso   |
|----------------|----|-------|---------|--------|--------------|--------|
| MISURA<br>SIZE | 4  | Ratio | In      | Out    | Model        | Weight |
|                |    | 1/1   | A       | B      | ZP 40S-4PAB- | Kg 4.5 |
|                |    | 1/1   | A       | C      | ZP 40FS4PAC- |        |
|                |    | 1/2   | A       | B      | ZP 42S-4PAB- |        |
|                |    | 1/2   | A       | C      | ZP 42FS4PAC- |        |
|                |    | 1/3   | A       | B      | ZP 44S-4PAB- |        |
|                |    | 1/3   | A       | C      | ZP 44FS4PAC- |        |
|                |    | 1/1   | A       | B - C  | ZP 41--4PABC |        |
|                |    | 1/2   | A       | B - C  | ZP 43--4PABC |        |
|                |    | 1/3   | A       | B - C  | ZP 45--4PABC |        |





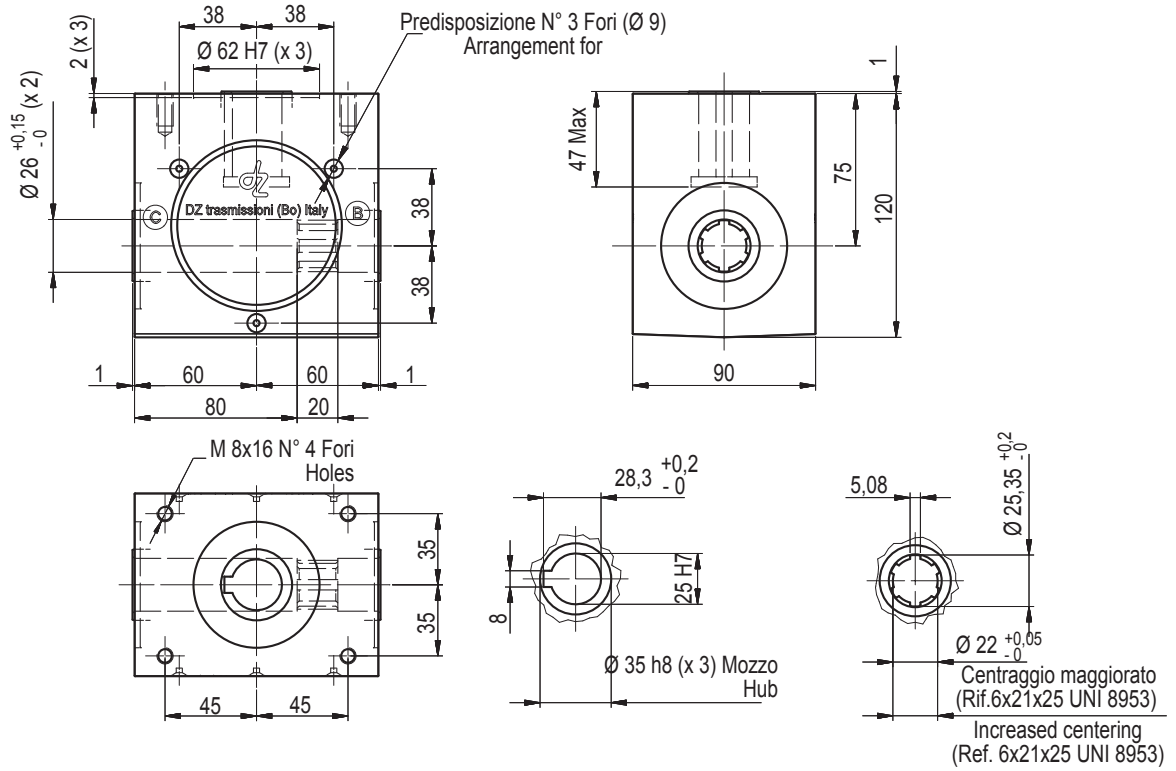
# **trasmissioni**



**Serie / Series  
Speciale / Special**

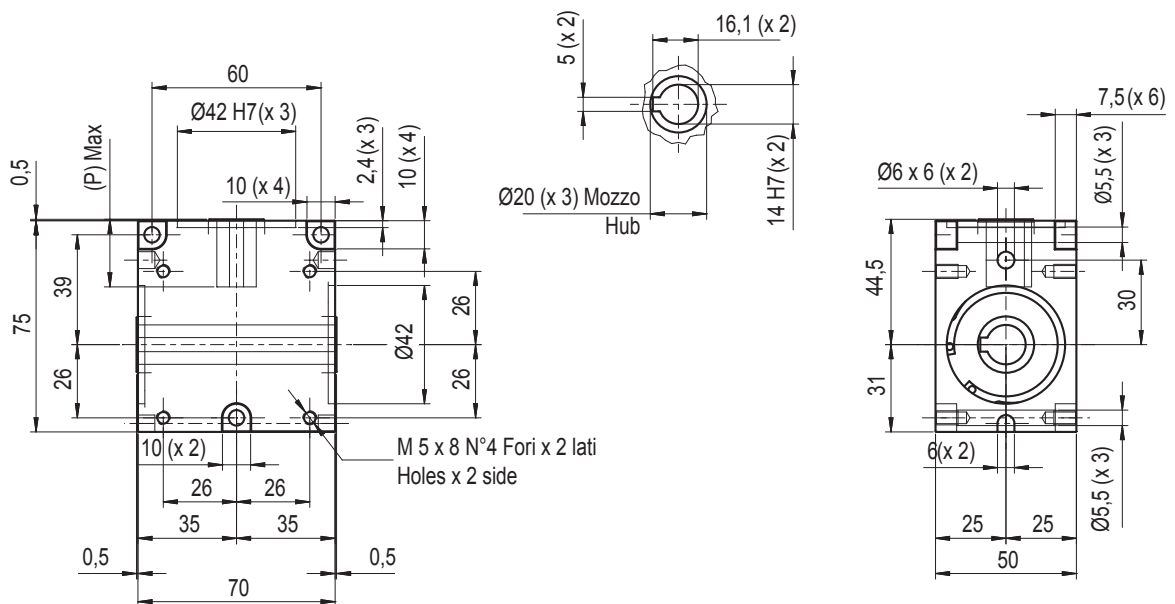


|                  |    |  |       |         |        |             |        |  |
|------------------|----|--|-------|---------|--------|-------------|--------|--|
| MOD.             | DZ |  | Rapp. | Entrata | Uscita | Modello     | Peso   |  |
|                  |    |  | Ratio | In      | Out    | Model       | Weight |  |
| SPECIALE SPECIAL |    |  | 1/1   | A       | B - C  | DZ 512 - 31 | Kg 4.1 |  |
|                  |    |  |       |         |        |             |        |  |
|                  |    |  |       |         |        |             |        |  |
|                  |    |  |       |         |        |             |        |  |
|                  |    |  |       |         |        |             |        |  |

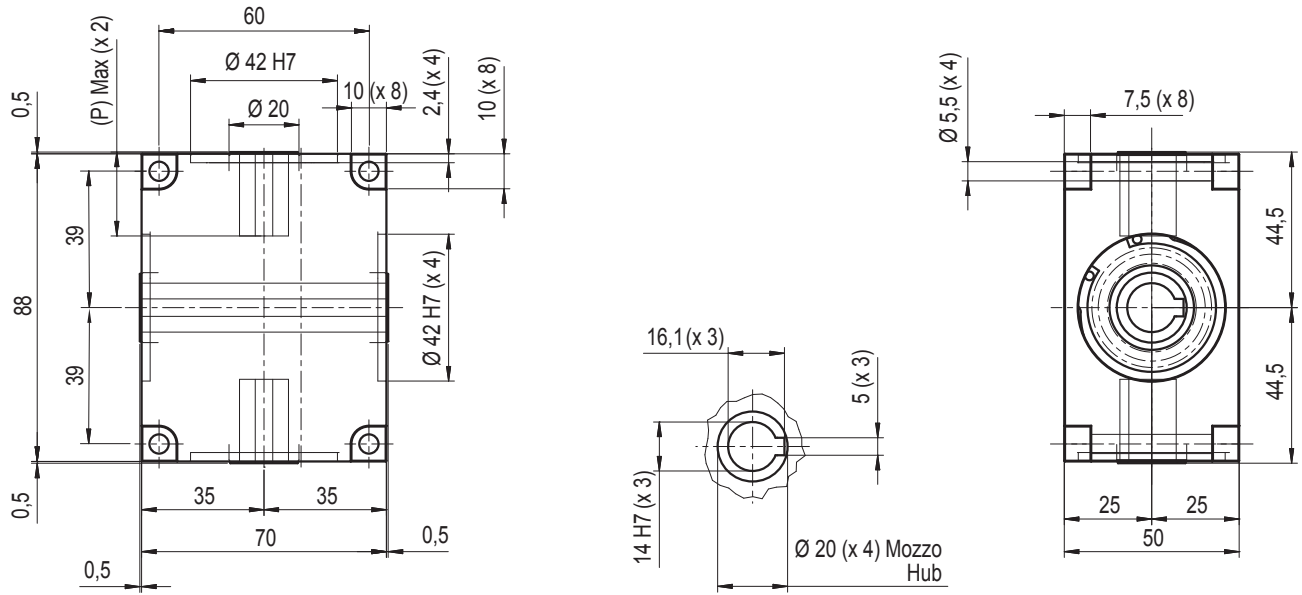


|                  |    |  |       |         |        |    |              |        |  |
|------------------|----|--|-------|---------|--------|----|--------------|--------|--|
| MOD.             | DZ |  | Rapp. | Entrata | Uscita | P  | Modello      | Peso   |  |
|                  |    |  | Ratio | In      | Out    |    | Model        | Weight |  |
| SPECIALE SPECIAL |    |  | 1/1   | A       | B - C  | 24 | DZ 505 - 60  | Kg 0.7 |  |
|                  |    |  | 1/1,5 | A       | B - C  | 16 | DZ 505 - 51* |        |  |
|                  |    |  |       |         |        |    |              |        |  |
|                  |    |  |       |         |        |    |              |        |  |
|                  |    |  |       |         |        |    |              |        |  |

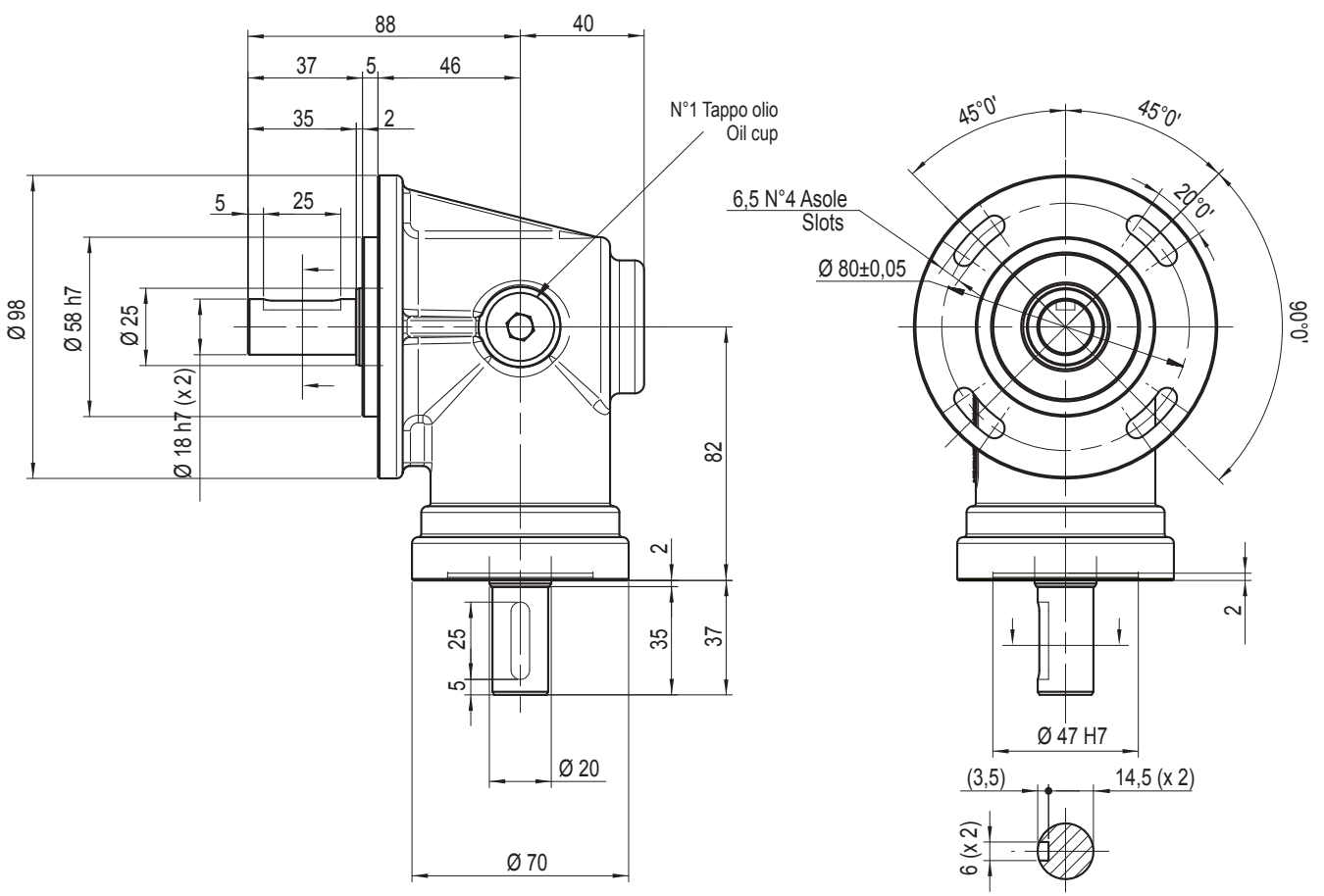
\* Modello su ordinazione / Model to order



| MOD.                                      | DZ |  | Rapp. | Entrata | Uscita    | P  | Modello      | Peso   |
|---|----|--|-------|---------|-----------|----|--------------|--------|
|   |    |  | Ratio | In      | Out       |    | Model        | Weight |
| SPECIALE<br>SPECIAL                       |    |  | 1/1   | A       | B - C - D | 24 | DZ 505 - 70  | Kg 1   |
|   |    |  | 1/1,5 | A       | B - C - D | 16 | DZ 505 - 71* |        |
|   |    |  |       |         |           |    |              |        |
| * Modello su ordinazione / Model to order |    |  |       |         |           |    |              |        |

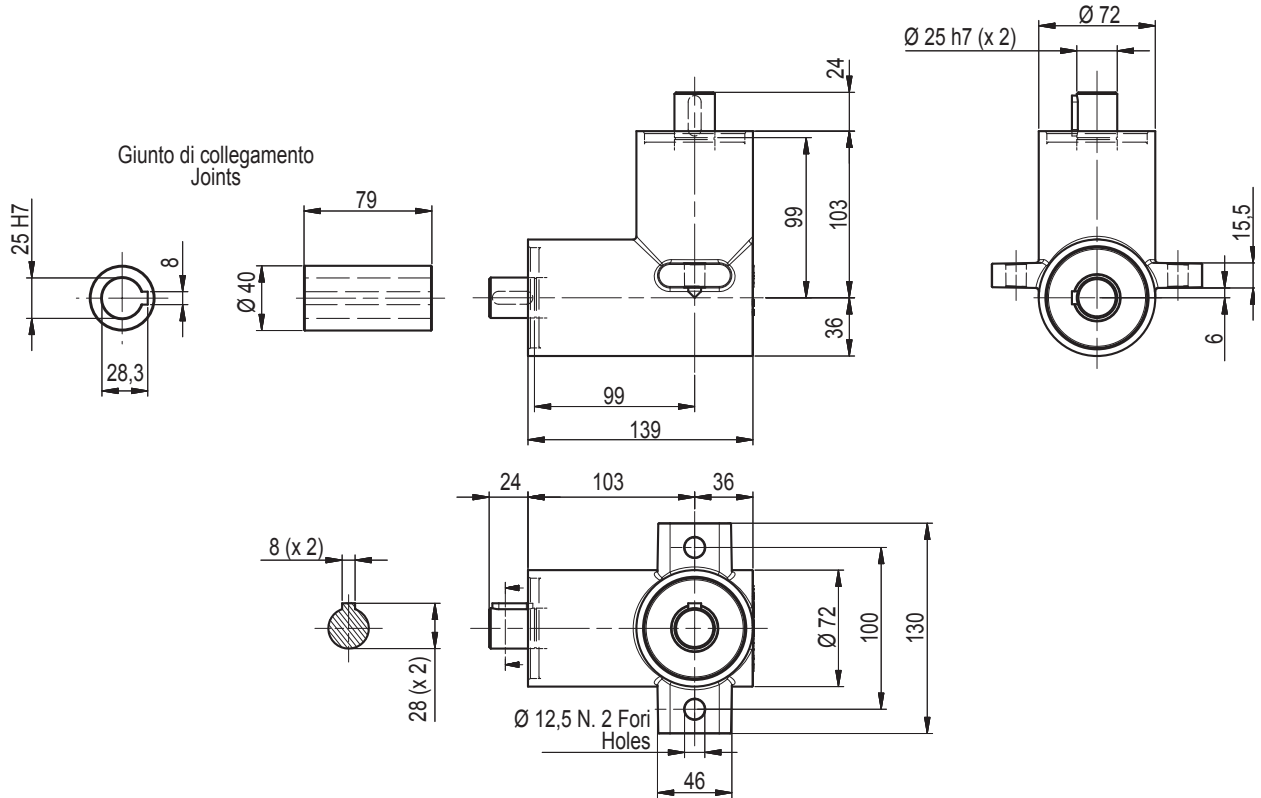


| MOD.                | DZ |  | Rapp. | Entrata | Uscita | Modello     | Peso   |
|---------------------|----|--|-------|---------|--------|-------------|--------|
|                     |    |  | Ratio | In      | Out    | Model       | Weight |
| SPECIALE<br>SPECIAL |    |  | 1/1   | A       | B      | DZ 604 - 50 | 1,7    |
|                     |    |  |       |         |        |             |        |
|                     |    |  |       |         |        |             |        |

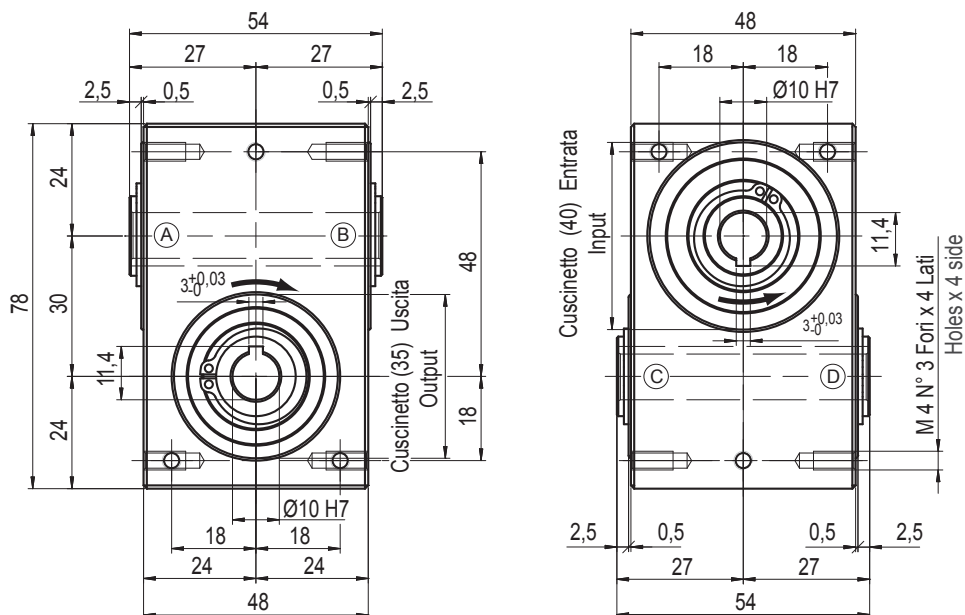
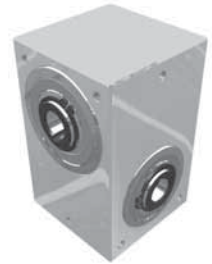




|                     |    |  |       |         |        |             |        |
|---------------------|----|--|-------|---------|--------|-------------|--------|
| MOD.                | DZ |  | Rapp. | Entrata | Uscita | Modello     | Peso   |
|                     |    |  | Ratio | In      | Out    | Model       | Weight |
| SPECIALE<br>SPECIAL |    |  | 1/1   | A       | B      | DZ 512 - 21 | Kg 4.2 |
|                     |    |  |       |         |        |             |        |
|                     |    |  |       |         |        |             |        |
|                     |    |  |       |         |        |             |        |

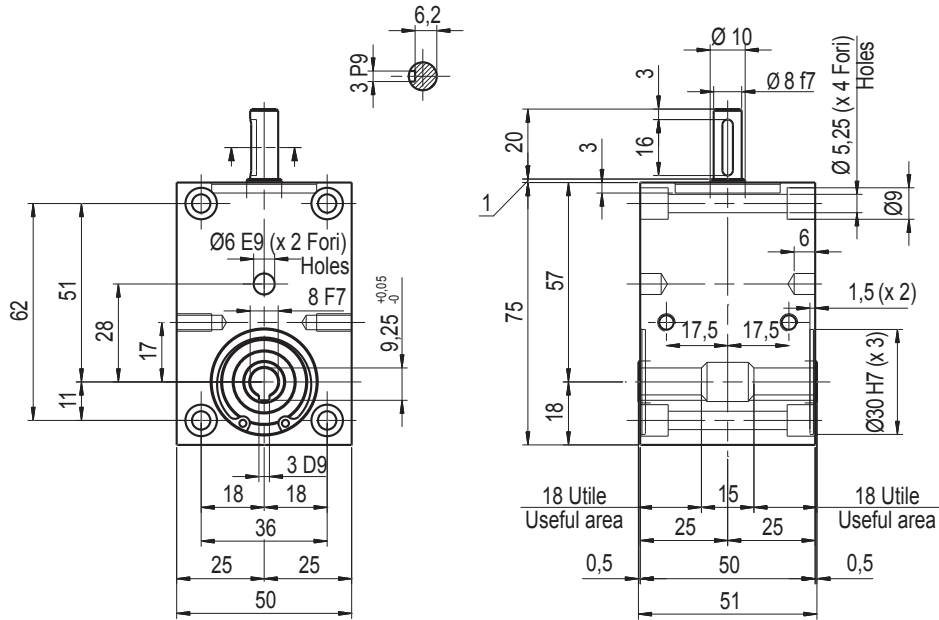


| RINVIO ORTOGONALE A INGRANAGGI CILINDRICI - ANGULAR IDLER WITH CYLINDRICAL GEARS |    |  |       |         |        |             |        |
|--|----|--|-------|---------|--------|-------------|--------|
| MOD.   | DZ |  | Rapp. | Entrata | Uscita | Modello     | Peso   |
|  |    |  | Ratio | In      | Out    | Model       | Weight |
| SPECIALE<br>SPECIAL  |    |  | 1/1   | A - B   | C - D  | DZ 150 - 01 | Kg 0,7 |
|  |    |  |       |         |        |             |        |
|  |    |  |       |         |        |             |        |





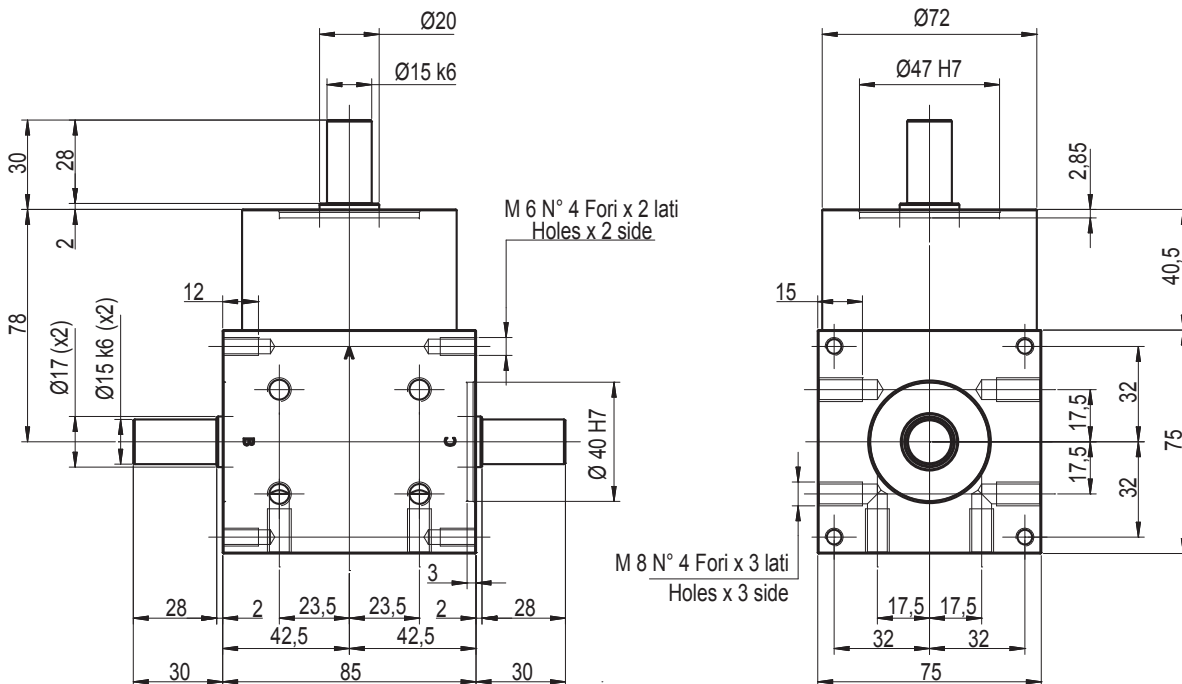
|                  |    |  |       |         |        |             |        |
|------------------|----|--|-------|---------|--------|-------------|--------|
| MOD.             | DZ |  | Rapp. | Entrata | Uscita | Modello     | Peso   |
|                  |    |  | Ratio | In      | Out    | Model       | Weight |
| SPECIALE SPECIAL |    |  | 1/1   | A       | B - C  | DZ 600 - 61 | Kg 1   |
|                  |    |  |       |         |        |             |        |
|                  |    |  |       |         |        |             |        |
|                  |    |  |       |         |        |             |        |
|                  |    |  |       |         |        |             |        |



|                  |    |  |   |          |    |       |        |        |
|------------------|----|--|---|----------|----|-------|--------|--------|
| MOD.             | DZ |  | Modello                                 | Versione |    | Rapp. | Peso   |        |
|                  |    |  | Model                                   | Version  |    | Ratio | Weight |        |
| SPECIALE SPECIAL |    |  | DZ 201 - 01                             | AB       | AC | ABC   | 1/1    | Kg 2,4 |
|                  |    |  |   |          |    |       |        |        |
|                  |    |  | Altri rapporti su richiesta             |          |    |       |        |        |
|                  |    |  | Other ratios are available upon request |          |    |       |        |        |

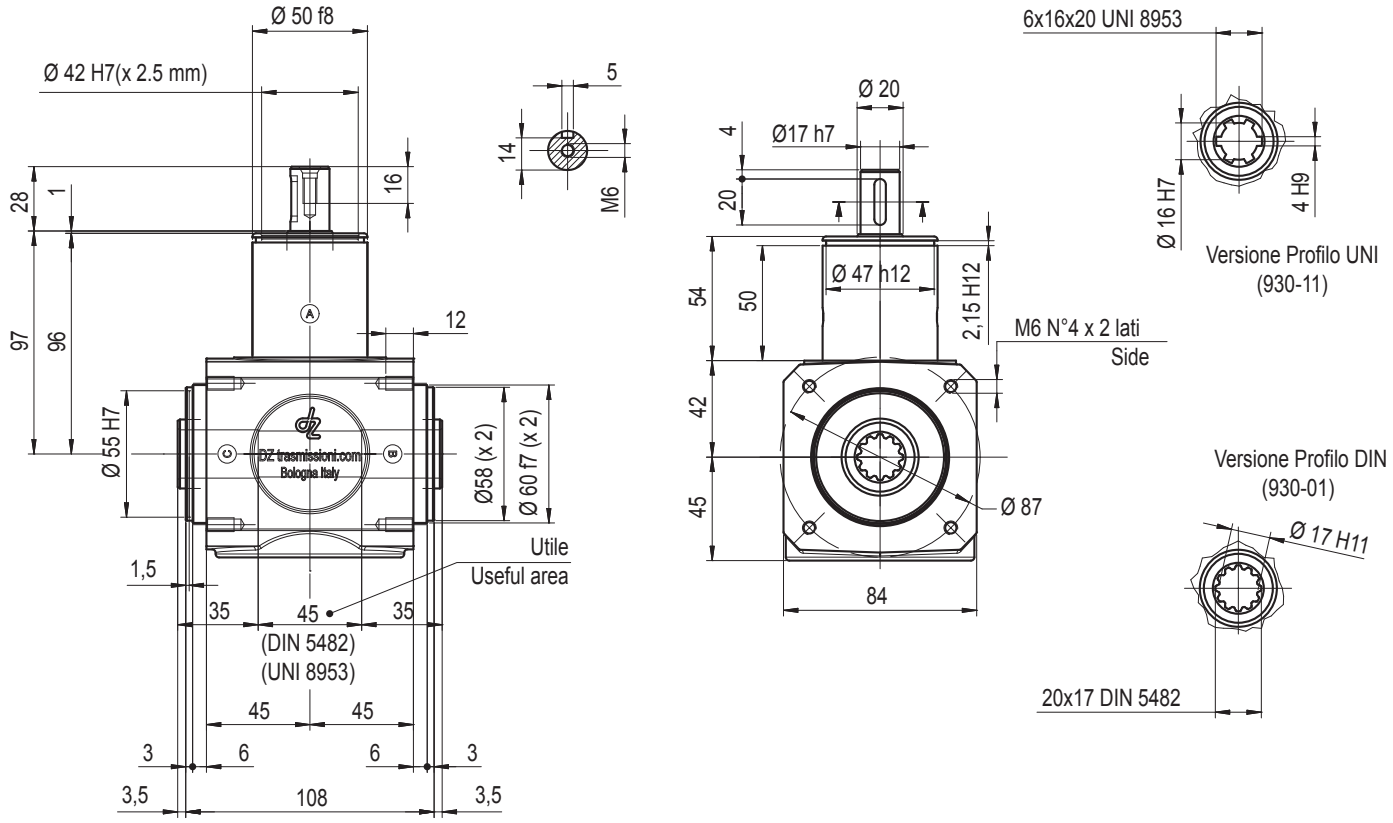


Per ordinativi indicare: modello - versione (alberi presenti) - rapporto / In case of order please state: model - version (shafts) - ratio





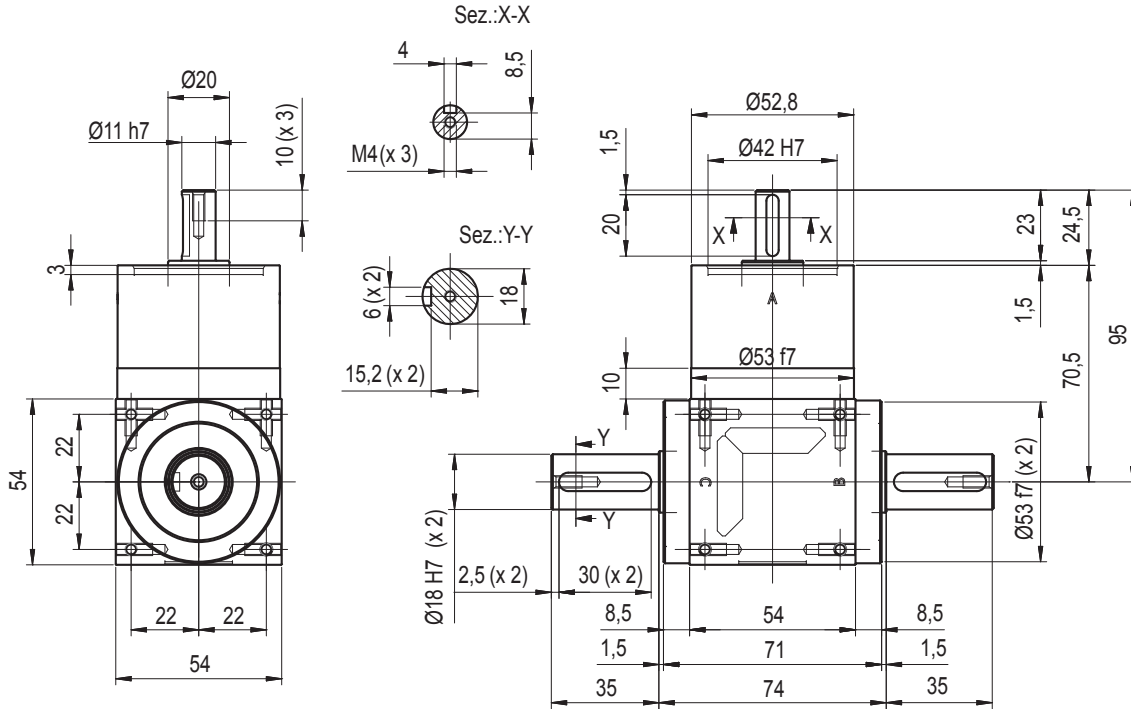
| MOD.                | DZ |  | Rapp. | Entrata | Uscita | Modello           | Peso   |
|---------------------|----|--|-------|---------|--------|-------------------|--------|
|                     |    |  | Ratio | In      | Out    | Model             | Weight |
| SPECIALE<br>SPECIAL |    |  | 1/1   | A       | B - C  | DZ 930 - 01 (DIN) | Kg 4.2 |
|                     |    |  | 1/1   | A       | B - C  | DZ 930 - 11 (UNI) |        |
|                     |    |  |       |         |        |                   |        |
|                     |    |  |       |         |        |                   |        |





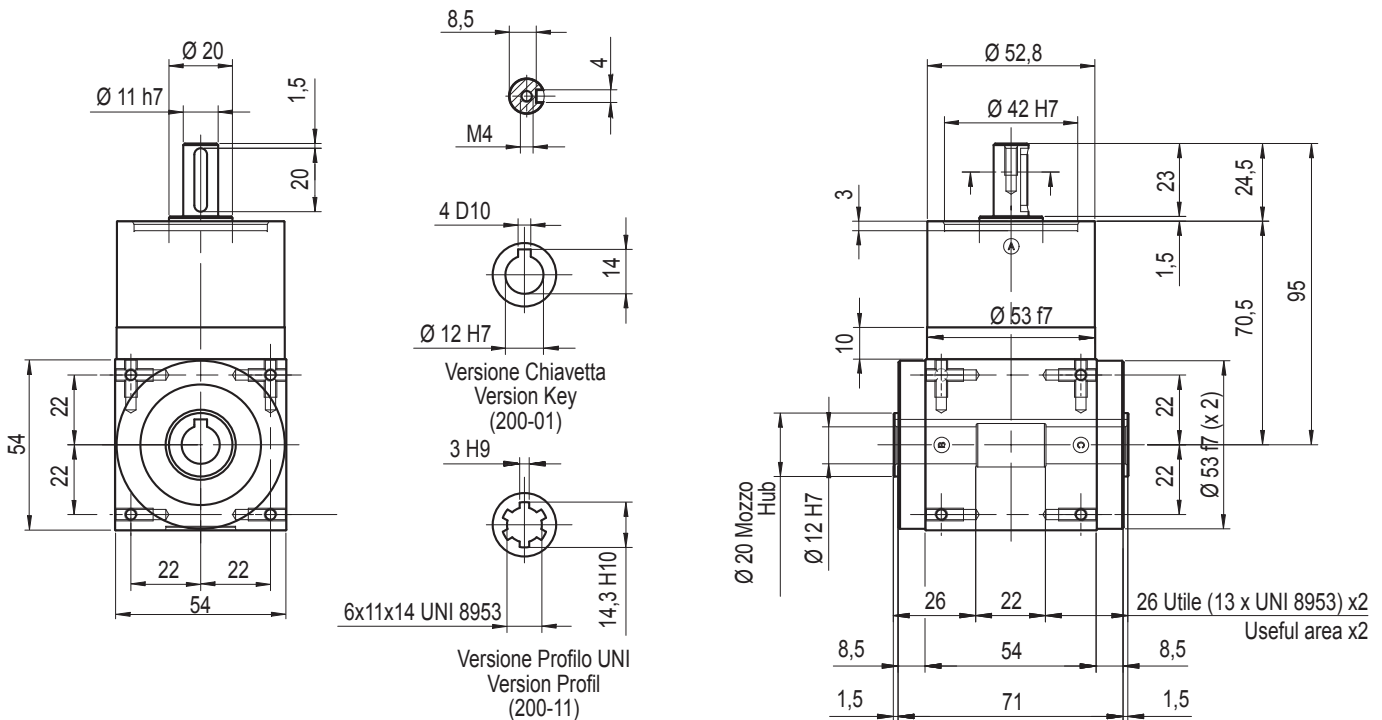
|                     |    |  |                             |    |    |   |        |        |
|---------------------|----|--|-----------------------------|----|----|---|--------|--------|
| MOD.                | DZ |  | Modello                     |    |    | Rapp.                                   | Peso   |        |
|                     |    |  | Model                       |    |    | Ratio                                   | Weight |        |
| SPECIALE<br>SPECIAL |    |  | DZ 200 – 21                 | AB | AC | ABC                                     | 1/1    | Kg 1,1 |
|                     |    |  | Altri rapporti su richiesta |    |    | Other ratios are available upon request |        |        |
|                     |    |  |                             |    |    |   |        |        |

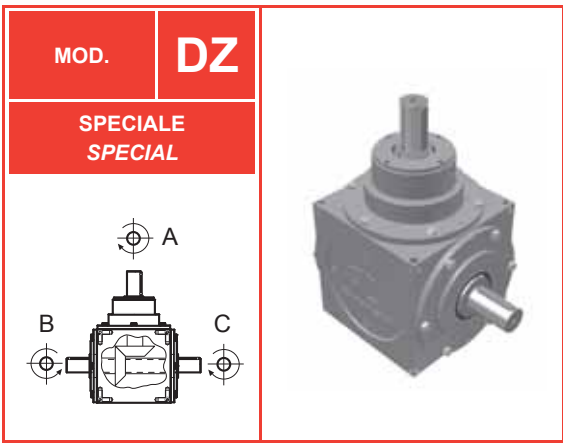
Per ordinativi indicare: modello - versione (alberi presenti) - rapporto / In case of order please state: model - version (shafts) - ratio



|                     |    |  |                               |   |       |   |      |
|---------------------|----|--|-------------------------------|---|-------|---|------|
| MOD.                | DZ |  | Modello                       |   | Rapp. | Peso                                    |      |
|                     |    |  | Model                         |   | Ratio | Weight                                  |      |
| SPECIALE<br>SPECIAL |    |  | DZ 200 – 01 (chiavetta / key) | A | B - C | 1/1                                     | Kg 1 |
|                     |    |  | DZ 200 – 11 (UNI)             | A | B - C | 1/1                                     |      |
|                     |    |  | Altri rapporti su richiesta   |   |       | Other ratios are available upon request |      |
|                     |    |  |                               |   |       |   |      |

Per ordinativi indicare: modello - versione (alberi presenti) - rapporto / In case of order please state: model - version (shafts) - ratio

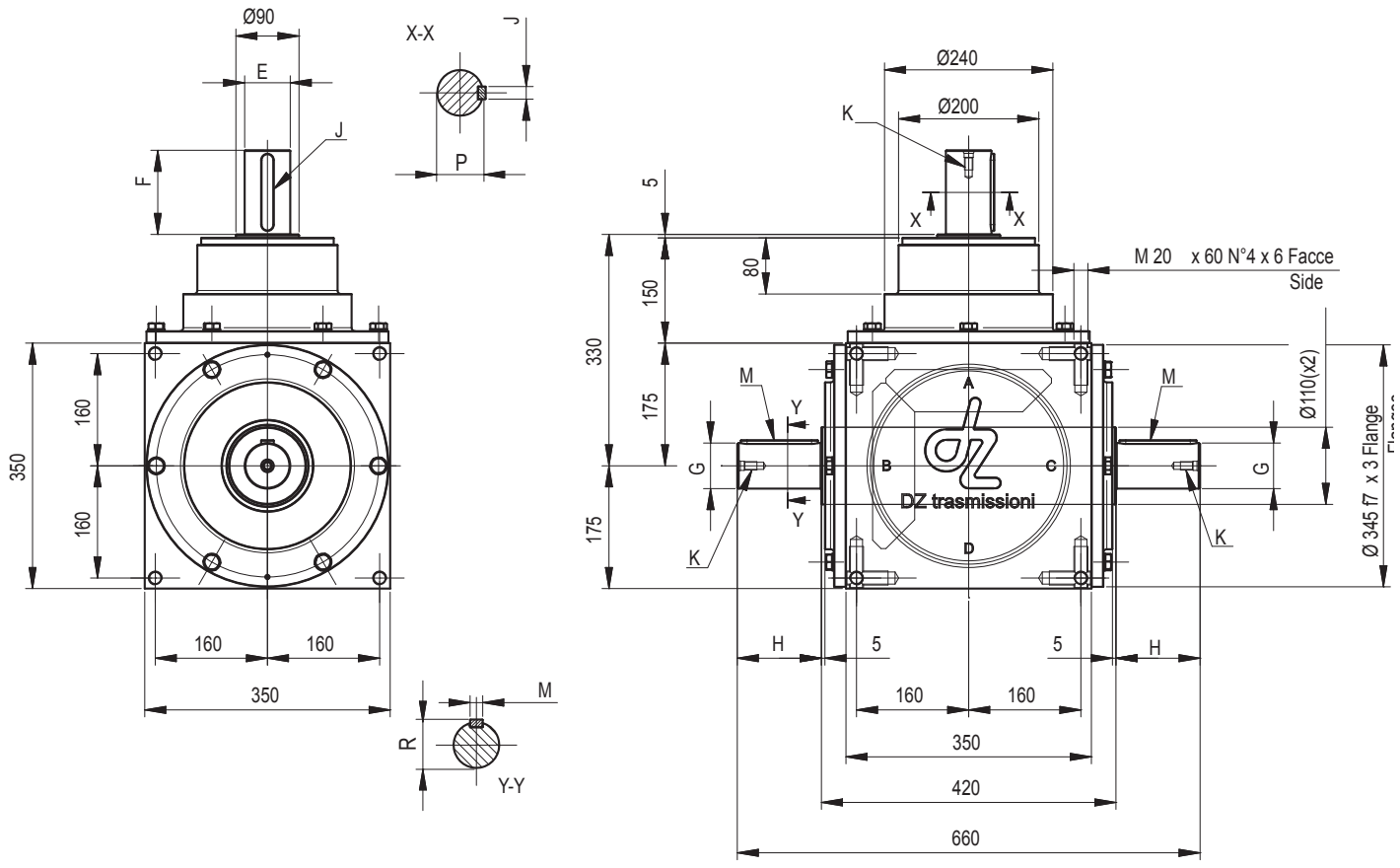




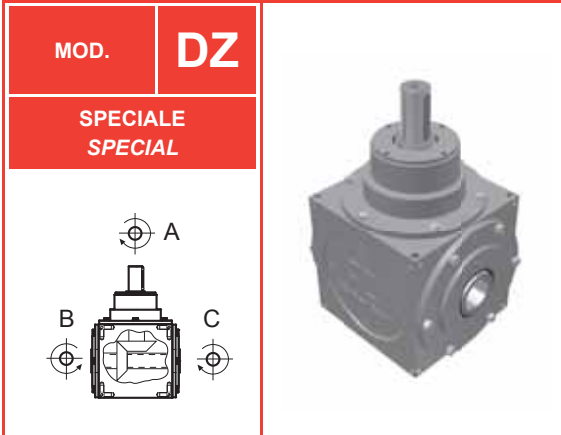
| Modello     | Versioni |     |       | Rapp. | E  | F   | G  | H   | J         | M         | K      | P  | R  | Peso          |
|-------------|----------|-----|-------|-------|----|-----|----|-----|-----------|-----------|--------|----|----|---------------|
| Model       | Version  |     |       | Ratio |    |     |    |     |           |           |        |    |    | Weight        |
| DZ 270 - 51 | A-B      | A-C | A-B-C | 1/1   | 65 | 120 | 65 | 120 | 18x11x110 | 18x11x110 | M12x25 | 69 | 69 | Kg<br>212-221 |
| DZ 270 - 61 | A-B      | A-C | A-B-C | 1/1   | 65 | 120 | 85 | 170 | 18x11x110 | 22x14x160 | M12x25 | 69 | 90 |               |
| DZ 270 - 71 | A-B      | A-C | A-B-C | 1/1   | 85 | 170 | 85 | 170 | 22x14x160 | 22x14x160 | M12x25 | 90 | 90 |               |

**Altri rapporti su richiesta / Other ratios are available upon request**

Per ordinativi indicare: modello - versione (alberi presenti) - rapporto / In case of order please state: model - version (shafts) - ratio

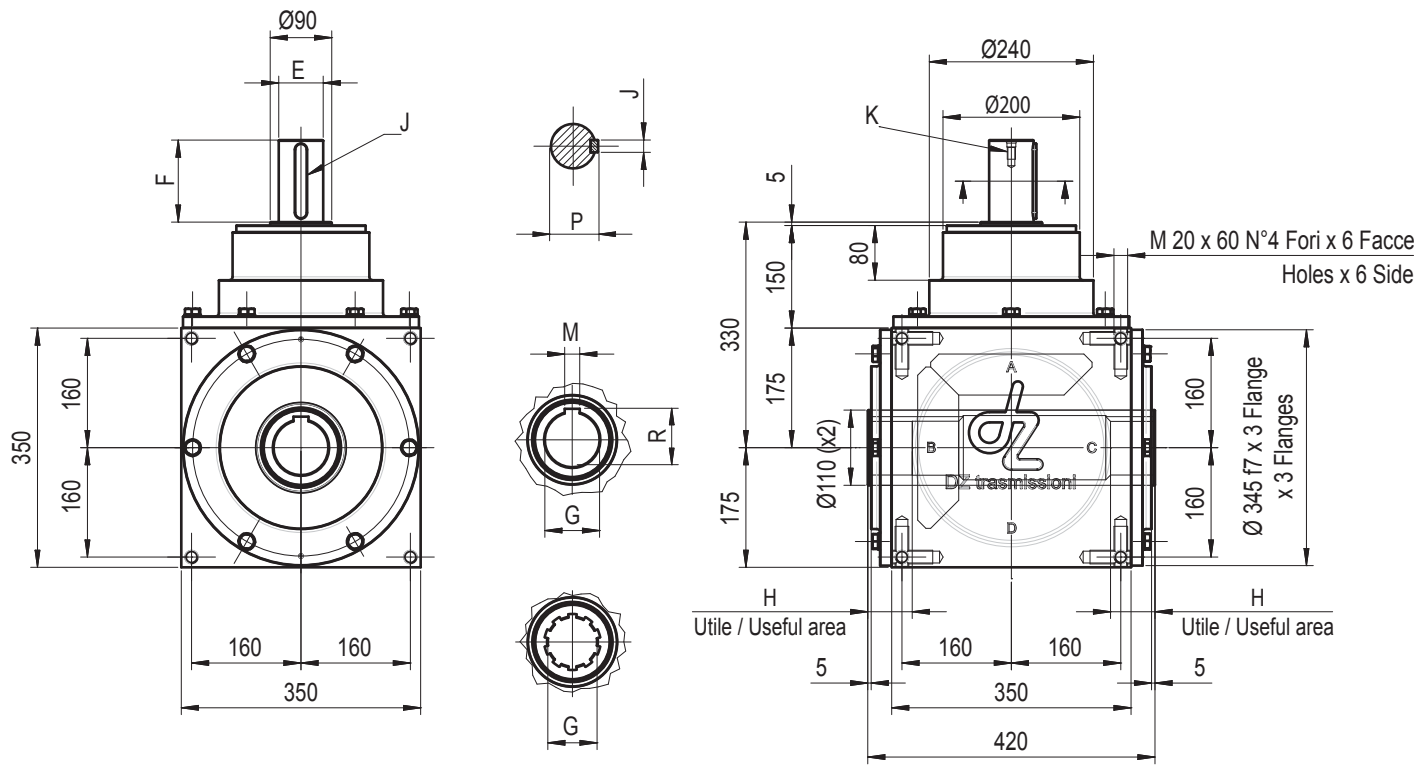






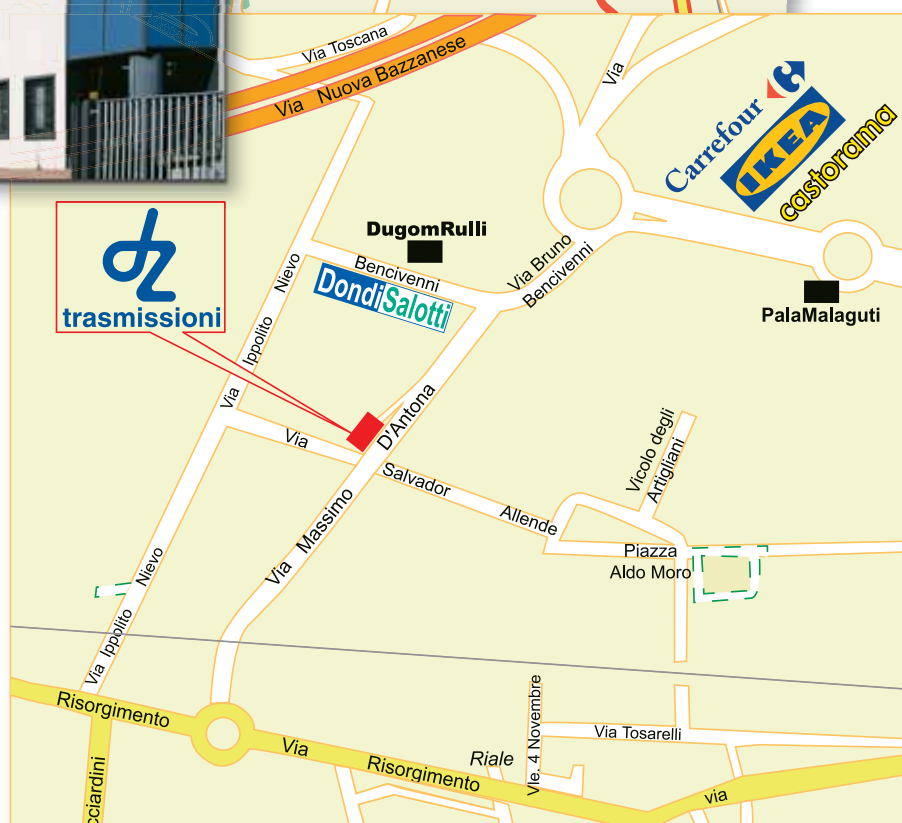
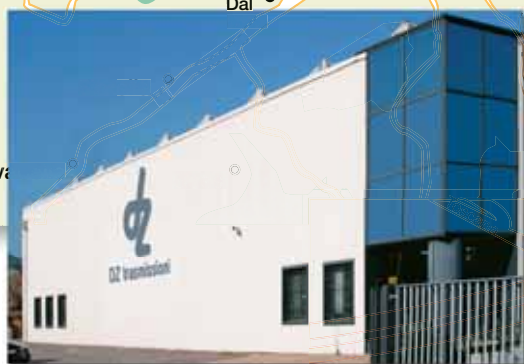
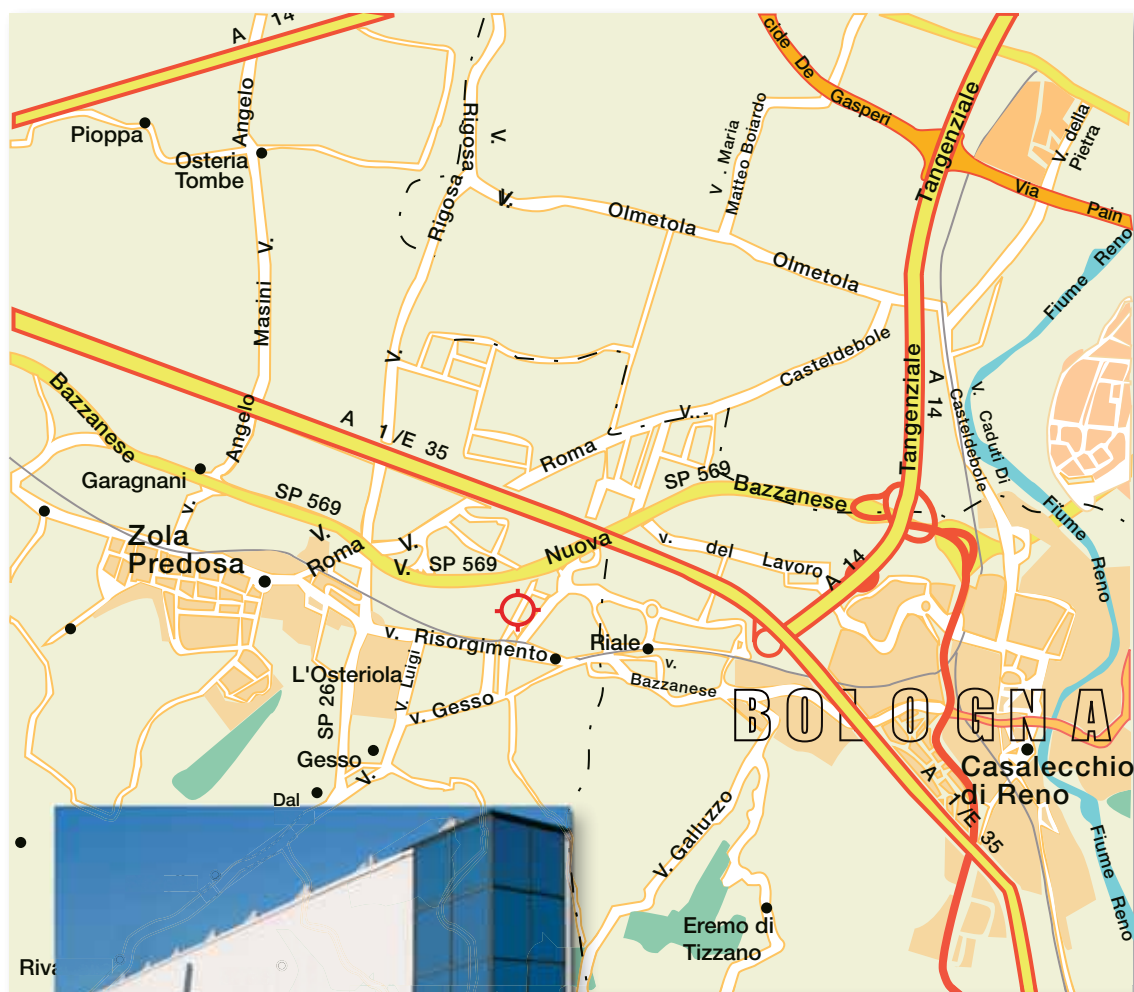
| Modello  | Rapp. | E  | F   | G                        | H  | J             | M  | K        | P  | R    | Peso          |
|--|-------|----|-----|--------------------------|----|---------------|----|----------|----|------|---------------|
| Model  | Ratio |    |     |                          |    |               |    |          |    |      | Weight        |
| DZ 270 - 01  | 1/1   | 65 | 120 | 80                       | 65 | 18 x 11 x 110 | 22 | M12 x 25 | 65 | 85,5 | Kg<br>204-207 |
| DZ 270 - 21  | 1/1   | 85 | 170 | 80                       | 65 | 22 x 14 x 160 | 22 | M12 x 25 | 90 | 85,5 |               |
| DZ 270 - 31  | 1/1   | 65 | 120 | UNI 8953<br>10 x 72 x 82 | 50 | 18 x 11 x 110 | -  | M12 x 25 | 65 |      |               |
| <b>Altri rapporti su richiesta / Other ratios are available upon request</b> |       |    |     |                          |    |               |    |          |    |      |               |

Per ordinativi indicare: modello - versione (alberi presenti) - rapporto / In case of order please state: model - version (shafts) - ratio





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## Myynti

|   |   |   |  |
|---|---|---|--|
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|---|---|---|--|

## Huolto ja kokoonpano

|   |   |  |
|---|---|--|
| Vantaa<br>Pyymosantie 4<br>01720 Vantaa | Turku<br>Polttolaitoksenkatu 5<br>20380 Turku | Puh. 010 8345 500<br>power.hydraulics@masino.fi<br>www.masino.fi/masino-konaflex |
|---|---|--|

Masino Group on yritysryhmä, joka tarjoaa voimansiirtoratkaisuja, hydraulikkaa ja suodatus-tekniikkaa, pumppuja, puhaltimia ja teollisuushuoltoa, putkistotuotteita, kiinnitystekniikkaa, hitsaustekniikkaa, juotostekniikkaa, kallionlujitustuotteita, betonikuituja sekä talotekniikan kiinnitys- ja asennustarvikkeita. Liikevaihtomme on noin 65 M€ ja henkilöstön määrä 160. Toimipisteemme sijaitsevat Vantaalla (2), Ylöjärvellä, Tampereella ja Turussa.