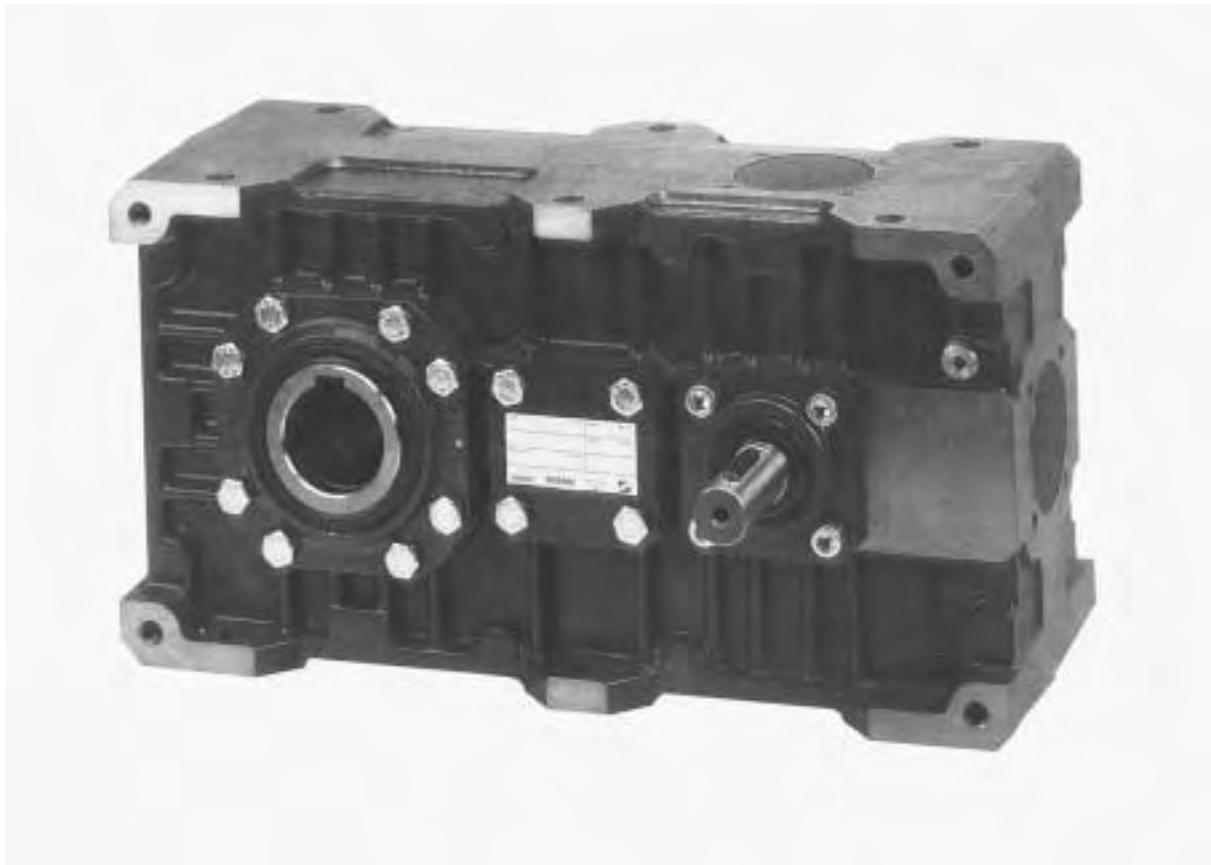


| 3.0 | REDUCTORES DE EJES PARALELOS | PARALLEL GEAR SHAFT UNIT | REDUCTEURS A ARBRES PARALLELES | |
|------------|-------------------------------------|---------------------------------|---------------------------------------|----|
| 3.1 | Características | <i>Characteristics</i> | Caractéristiques | 24 |
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3.1 Características

- Construidos en 6 tamaños con una reducción, 5 tamaños con doble reducción y en 5 tamaños con triple reducción.
- Disponibles en 2 tipos distintos de entrada: Con eje de entrada macho, con predisposición para acoplar motor (Campana + acoplamiento).
- Las carcasas de los reductores son de fundición maleable (71 - 180) o de fundición esferoidal (200 - 225) nervada interior y exteriormente con el fin de garantizar la rigidez y planos mecanizados en todas las caras a fin de facilitar el posicionamiento y montaje. La única cámara de lubricación garantiza una mayor disipación térmica y mejor lubricación de todos los componentes.
- Los engranajes cilíndricos helicoidales están contruidos en acero 16CrNi4 o 18NiCrMo5 UNI7846 y expuestos a tratamiento de cementación y templado. El primer estadio está rectificad.
- La utilización de rodamientos de rodillos cónicos de primeras marcas en todos los ejes permiten al reductor obtener una mayor duración y resistir unas elevadas cargas externas radiales y axiales.
- La utilización de rodamientos de rodillos cónicos de primeras marcas en todos los ejes (excepto en el casquillo de entrada de la predisposición compacta de ataque al motor, el cual es sostenido por rodamientos de bolas de contacto angular), permiten al reductor obtener una mayor duración y resistir unas elevadas cargas externas radiales y axiales.

3.1 Characteristics

- Built in 6 sizes with single reduction, in 5 unit sizes with double reduction and in 5 sizes with three reduction.
- Two input types are available : with projecting input shaft, with pre-engineered motor coupling (bell and joint).
- Gear unit body in engineering cast iron, (71-180) or spheroidal graphite cast iron (200-225) is ribbed internally and externally to guarantee rigidity and machined on all surfaces for easy positioning. The single lubrication chamber guarantees improved heat dissipation and better lubrication of all the internal components.
- The helical spur gears are built in 16CrNi4 or 18NiCrMo5 UNI7846 quench-hardened steel, case-hardened and ground.
- The use of high-quality taper bearings rollers on all shafts ensures extremely long gear unit life, even under very high radial and axial loads.
- The standard hollow steel output shaft (locking assembly available on request), as well as the option of mounting an output flange on the side opposite the input shaft and the pre-engineered backstop coupling make these gear units extremely versatile while facilitating installation.


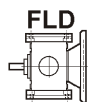

3.1 Caractéristiques

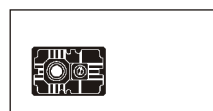
- Fabricados en 6 tallas con un train de réduction, en 5 tallas à deux trains de réduction et en 5 tallas à trois trains de réduction.
- Deux types d'entrée sont prévues : arbre d'entrée dépassant, prédisposition pour accouplement moteur (cloche et joint d'accouplement).
- Le corps du réducteur en fonte mécanique (71-180) ou en fonte à graphite sphéroïdale (200-225), équipé de nombreuses nervures à l'intérieur aussi bien qu'à l'extérieur pour en assurer la rigidité, est usiné sur toutes les faces pour permettre un positionnement plus aisé ; une seule chambre de graissage assure également une dissipation thermique supérieure ainsi qu'une meilleure lubrification de tous les organes internes.
- Les engrenages cylindriques à denture hélicoïdale sont fabriqués en acier 16CrNi4 ou 18NiCrMo5 UNI7846 cémentés et trempés. Le premier train est rectifié.
- L'utilisation de roulements à galets coniques haut de gamme sur tous les arbres assure au réducteur une longévité supérieure, mêmes en supportant des charges radiales et axiales extérieures très élevées.
- L'utilisation de roulements à galets coniques haut de gamme sur tous les arbres (à l'exception du manchon d'entrée dans la prédisposition compacte d'accouplement moteur, lequel est soutenu par des roulements à billes et contact oblique) assure au réducteur une longévité supérieure, mêmes en supportant des charges radiales et axiales extérieures très élevées.

3.2 Nomenclatura

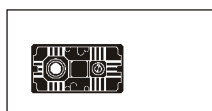
3.2 Designation

3.2 Désignation

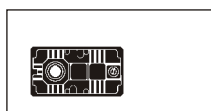
| Máquina Machine Machine | Tipo de entrada Input type Type d'entrée | Tamaño Size Taille | Reducciones Gearing Mécanisme de transmission | Relación Ratio Rapport réd. | Predis. Motor Motor mounting facility Prédispos. moteur | Posición de montaje Mounting position Position de montage | Brida de salida Output flange Bride de sortie | Antirretorno Back-stop device Dispositif antidévireur | Anillo de fijación Shrink disk Frette de serrage |
|---|--|--------------------------------------|--|-----------------------------------|---|--|---|---|--|
| Z | A | 112 | BO | 10/1 | P.A.M. | B3 | FLD | CW | C.S. |
| Reductor de ejes paralelos Parallel shaft gear unit Réducteur à arbres parallèles |  A | 71 90 112 140 180 225 | A 1 red. 1 red. 1 red. | in = .../1 4 ÷ 250 | 63 ÷ 200 | B3 V1 V3 VA VB |  | CW Rotación horaria clockwise rotation Rotation horaire | C.S. Anillo lado izquierdo Shrink disc left Frette de serrage gauche |
| |  F | 80 100 125 160 200 | B 2 red. 2 red. 2 red. | | | | | AW Rotación antihoraria anti-clockwise rotation Rotation anti-horaire | |



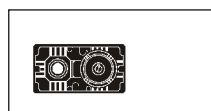
ZA..A



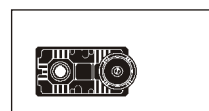
ZA..B



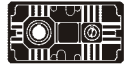
ZA..C



ZF..B



ZF..C



3.3 Datos técnicos

3.3 Technical data

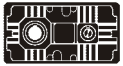
3.3 Données Techniques

| Z | n ₁ = 1400 | | | ZA | |
|------|-----------------------|------|--------------------|--------------------|------|
| | in | ir | n ₂ rpm | T _{2M} Nm | P kW |
| 71A | 5 | 5.09 | 275 | 190 | 5.6 |
| | 6.3 | 6.10 | 230 | 180 | 4.5 |
| | 8 | 7.88 | 177 | 170 | 3.3 |
| 90A | 5 | 5.09 | 275 | 380 | 11.3 |
| | 6.3 | 6.10 | 230 | 360 | 8.9 |
| | 8 | 7.88 | 177 | 340 | 6.5 |
| 112A | 5 | 5.09 | 275 | 760 | 22.6 |
| | 6.3 | 6.10 | 230 | 720 | 17.8 |
| | 8 | 7.88 | 177 | 680 | 13.0 |
| 140A | 5 | 5.09 | 275 | 1520 | 45.1 |
| | 6.3 | 6.10 | 230 | 1440 | 35.7 |
| | 8 | 7.88 | 177 | 1360 | 26.1 |
| 180A | 5 | 5.09 | 275 | 3040 | 90.2 |
| | 6.3 | 6.10 | 230 | 2880 | 71.4 |
| | 8 | 7.88 | 177 | 2720 | 52.1 |
| 225A | 4 | 3.92 | 357 | 6400 | 247 |
| | 5 | 4.82 | 291 | 6080 | 191 |
| | 6.3 | 5.90 | 237 | 5760 | 148 |

| Z | n ₁ = 1400 | | | ZF | | | | ZA | |
|------|-----------------------|--------|--------------------|-------------------|-------|-----|------------------------------|--------------------|------|
| | in | ir | n ₂ rpm | T ₂ Nm | P1 kW | FS' | IEC | T _{2M} Nm | P kW |
| 80B | 10 | 10.20 | 137 | 119 | 1.8 | 3.9 | 63 71 80 90 | 460 | 7.0 |
| | 12.5 | 12.98 | 108 | 151 | 1.8 | 3.2 | | 480 | 5.7 |
| | 16 | 15.56 | 90 | 181 | 1.8 | 2.8 | | 500 | 5.0 |
| | 20 | 20.36 | 69 | 238 | 1.8 | 2.2 | | 520 | 3.9 |
| | 25 | 24.40 | 57 | 285 | 1.8 | 1.9 | | 540 | 3.4 |
| | 31.5 | 31.05 | 45 | 362 | 1.8 | 1.5 | | 560 | 2.8 |
| | 40 | 37.21 | 38 | 434 | 1.8 | 1.2 | | 540 | 2.2 |
| | 50 | 48.12 | 29 | 468 | 1.5 | 1.1 | | 520 | 1.7 |
| | 63 | 62.23 | 22 | 444 | 1.1 | 1.1 | | 500 | 1.2 |
| 80C* | 50 | 52.71 | 27 | 502 | 1.5 | 1.2 | 63 71 80 90 | 580 | 1.7 |
| | 63 | 63.15 | 22 | 601 | 1.5 | 1.0 | | 600 | 1.5 |
| | 80 | 80.38 | 17 | 561 | 1.1 | 1.1 | | 620 | 1.2 |
| | 100 | 103.52 | 14 | 493 | 0.75 | 1.3 | | 640 | 1.0 |
| | 125 | 124.03 | 11 | 590 | 0.75 | 1.1 | | 660 | 0.8 |
| | 160 | 157.86 | 9 | 551 | 0.55 | 1.2 | | 680 | 0.7 |
| | 200 | 204.15 | 7 | 479 | 0.37 | 1.5 | | 700 | 0.5 |
| | 250 | 244.62 | 6 | 574 | 0.37 | 1.3 | | 720 | 0.5 |
| 100B | 10 | 10.20 | 137 | 264 | 4 | 3.5 | 71 80 90 100 112 | 920 | 13.9 |
| | 12.5 | 12.98 | 108 | 337 | 4 | 2.9 | | 960 | 11.4 |
| | 16 | 15.56 | 90 | 403 | 4 | 2.5 | | 1000 | 9.9 |
| | 20 | 20.36 | 69 | 528 | 4 | 2.0 | | 1040 | 7.9 |
| | 25 | 24.40 | 57 | 632 | 4 | 1.7 | | 1080 | 6.8 |
| | 31.5 | 31.05 | 45 | 805 | 4 | 1.4 | | 1120 | 5.6 |
| | 40 | 37.21 | 38 | 965 | 4 | 1.1 | | 1080 | 4.5 |
| | 50 | 48.12 | 29 | 936 | 3 | 1.1 | | 1040 | 3.3 |
| | 63 | 62.23 | 22 | 887 | 2.2 | 1.1 | | 1000 | 2.5 |
| 100C | 50 | 51.93 | 27 | 609 | 1.8 | 1.9 | 63 71 80 90 | 1160 | 3.5 |
| | 63 | 62.22 | 23 | 730 | 1.8 | 1.6 | | 1200 | 3.0 |
| | 80 | 79.19 | 18 | 929 | 1.8 | 1.3 | | 1240 | 2.5 |
| | 100 | 103.67 | 14 | 987 | 1.5 | 1.3 | | 1280 | 1.9 |
| | 125 | 124.22 | 11 | 1182 | 1.5 | 1.1 | | 1320 | 1.7 |
| | 160 | 158.10 | 9 | 1103 | 1.1 | 1.2 | | 1360 | 1.4 |
| | 200 | 204.46 | 7 | 1427 | 1.1 | 1.0 | | 1400 | 1.1 |
| | 250 | 244.99 | 6 | 1166 | 0.75 | 1.2 | | 1440 | 0.9 |

| Z | n ₁ = 1400 | | | ZF | | | | ZA | |
|------|-----------------------|--------|--------------------|-------------------|-------|------|--|--------------------|---------------------------------|
| | in | ir | n ₂ rpm | T ₂ Nm | P1 kW | FS | IEC | T _{2M} Nm | P kW |
| 125B | 10 | 10.20 | 137 | 595 | 9 | 3.1 | 80 90 100 112 132 | 1840 | 27.8 |
| | 12.5 | 12.98 | 108 | 757 | 9 | 2.5 | | 1920 | 22.8 |
| | 16 | 15.55 | 90 | 907 | 9 | 2.2 | | 2000 | 19.8 |
| | 20 | 20.36 | 69 | 1188 | 9 | 1.8 | | 2080 | 15.8 |
| | 25 | 24.40 | 57 | 1423 | 9 | 1.5 | | 2160 | 13.7 |
| | 31.5 | 31.05 | 45 | 1811 | 9 | 1.2 | | 2240 | 11.1 |
| | 40 | 37.21 | 38 | 1809 | 7.5 | 1.2 | | 2160 | 9.0 |
| | 50 | 48.12 | 29 | 1715 | 5.5 | 1.2 | | 2080 | 6.7 |
| | 63 | 62.23 | 22 | 1613 | 4 | 1.2 | | 2000 | 5.0 |
| 125C | 50 | 51.93 | 27 | 1812 | 4 | 1.8 | 71 80 90 100 112 | 2320 | 7.0 |
| | 63 | 62.22 | 23 | 2171 | 4 | 1.5 | | 2400 | 6.1 |
| | 80 | 79.19 | 18 | 2009 | 4 | 1.2 | | 2480 | 4.9 |
| | 100 | 103.67 | 14 | 1973 | 3 | 1.3 | | 2560 | 3.9 |
| | 125 | 124.22 | 11 | 2364 | 3 | 1.1 | | 2640 | 3.4 |
| | 160 | 158.10 | 9 | 2206 | 2.2 | 1.2 | | 2720 | 2.7 |
| | 200 | 204.46 | 7 | 2854 | 2.2 | 1.0 | | 2800 | 2.2 |
| | 250 | 244.99 | 6 | 2331 | 1.5 | 1.2 | | 2880 | 1.9 |
| | 160B | 10 | 10.20 | 137 | 1454 | 22 | | 2.5 | 100 112 132 160 180 |
| 12.5 | | 12.98 | 108 | 1851 | 22 | 2.1 | 3840 | 45.6 | |
| 16 | | 15.56 | 90 | 2218 | 22 | 1.8 | 4000 | 39.7 | |
| 20 | | 20.36 | 69 | 2903 | 22 | 1.4 | 4160 | 31.5 | |
| 25 | | 24.40 | 57 | 3479 | 22 | 1.2 | 4320 | 27.3 | |
| 31.5 | | 31.05 | 45 | 4427 | 22 | 1.0 | 4480 | 22.3 | |
| 40 | | 37.21 | 38 | 3617 | 15 | 1.2 | 4320 | 17.9 | |
| 50 | | 48.12 | 29 | 3430 | 11 | 1.2 | 4160 | 13.3 | |
| 63 | | 62.23 | 22 | 3630 | 9.0 | 1.1 | 4000 | 9.9 | |
| 160C | 50 | 51.93 | 27 | 3624 | 11.0 | 1.3 | 80 90 100 112 132 | 4640 | 14.1 |
| | 63 | 62.22 | 23 | 4342 | 11.0 | 1.1 | | 4800 | 12.2 |
| | 80 | 79.19 | 18 | 3768 | 7.5 | 1.3 | | 4960 | 9.9 |
| | 100 | 103.67 | 14 | 4933 | 7.5 | 1.0 | | 5120 | 7.8 |
| | 125 | 124.22 | 11 | 4334 | 5.5 | 1.2 | | 5280 | 6.7 |
| | 160 | 158.10 | 9 | 4012 | 4 | 1.4 | | 5440 | 5.4 |
| | 200 | 204.46 | 7 | 5188 | 4 | 1.1 | | 5600 | 4.3 |
| | 250 | 244.99 | 6 | 4663 | 3 | 1.2 | | 5760 | 3.7 |
| 200B | 8 | 8.33 | 168 | 1619 | 30 | 4.3 | 100 112 132 160 180 200 | 7040 | 130.4 |
| | 10 | 10.00 | 140 | 1945 | 30 | 3.8 | | 7360 | 113.5 |
| | 12.5 | 12.29 | 114 | 2389 | 30 | 3.2 | | 7680 | 96.5 |
| | 16 | 16.63 | 84 | 3233 | 30 | 2.5 | | 8000 | 74.2 |
| | 20 | 19.97 | 70 | 3883 | 30 | 2.1 | | 8320 | 64.3 |
| | 25 | 24.53 | 57 | 4769 | 30 | 1.8 | | 8640 | 54.4 |
| 31.5 | 30.04 | 47 | 5839 | 30 | 1.5 | 8960 | 46.0 | | |
| 200C | 40 | 42.41 | 33 | 8071 | 30 | 1.1 | 100 112 132 160 180 | 9120 | 33.9 |
| | 50 | 50.93 | 27 | 7108 | 22 | 1.3 | | 9280 | 28.7 |
| | 63 | 62.55 | 22 | 8730 | 22 | 1.1 | | 9600 | 24.2 |
| | 80 | 76.59 | 18 | 8989 | 18.5 | 1.1 | | 9920 | 20.4 |
| | 100 | 101.68 | 14 | 9675 | 15 | 1.1 | | 10240 | 15.9 |
| | 125 | 124.87 | 11 | 8714 | 11 | 1.2 | | 10560 | 13.3 |
| | 160 | 152.91 | 9 | 10671 | 11 | 1.0 | | 10880 | 11.2 |

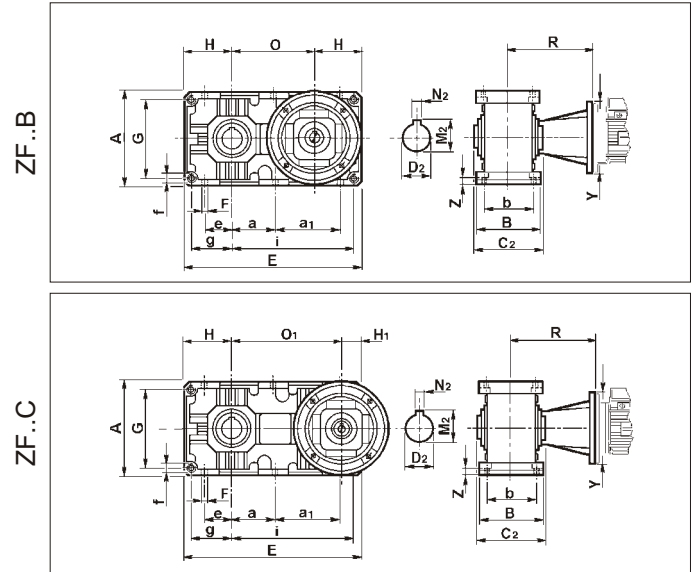
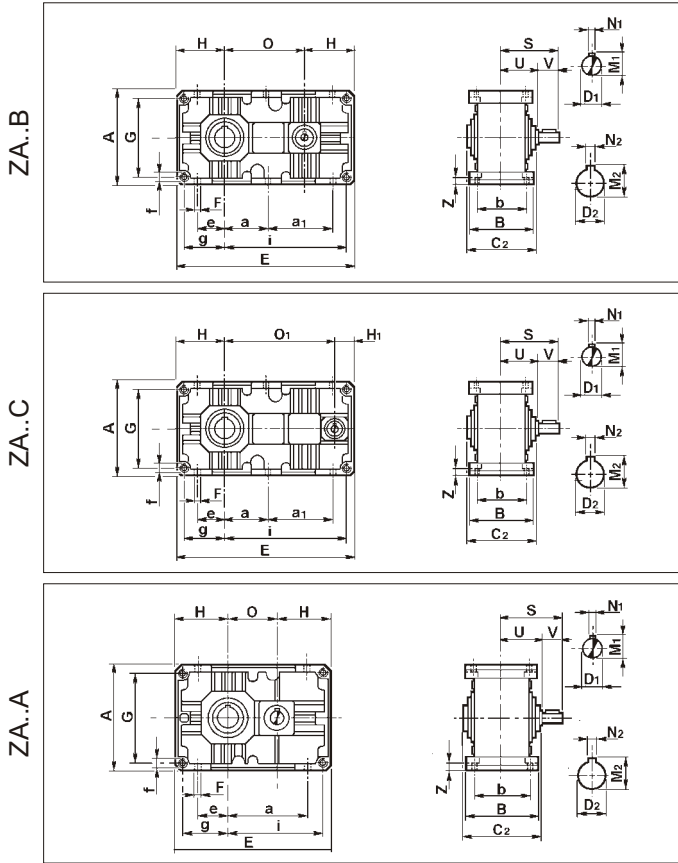
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3.4 Dimensiones

3.4 Dimensions

3.4 Dimensions



| | ZA...A | | | | | | | | | | | | ZA...B - ZF...B - ZA...C - ZF...C | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|--------|------|--|-------|------|------|------|------|------|------|------|--|-----------------------------------|------|-------|------|------|------|-------|------|------|------|------|------|------|-------|------|-------|------|------|-------|------|------|------|------|------|-------|--|--|
| | 71 | | | 90 | | | 112 | | | 140 | | | 180 | | | 225 | | | 80 | | | 100 | | | 125 | | | 160 | | | 200 | | | | | | | | |
| A | 142 | | | 180 | | | 224 | | | 280 | | | 360 | | | 450 | | | 160 | | | 200 | | | 250 | | | 320 | | | 400 | | | | | | | | |
| a | 102 | | | 134 | | | 166 | | | 209 | | | 272.5 | | | 344 | | | 82 | | | 102 | | | 127 | | | 162.5 | | | 204 | | | | | | | | |
| a1 | | | | | | | | | | | | | | | | | | | 106 | | | 134 | | | 169 | | | 217 | | | 277.5 | | | | | | | | |
| B | 112 | | | 127 | | | 150 | | | 175 | | | 215 | | | 290 | | | 127 | | | 150 | | | 175 | | | 215 | | | 290 | | | | | | | | |
| b | 90 | | | 104 | | | 125 | | | 145 | | | 180 | | | 240 | | | 104 | | | 125 | | | 145 | | | 180 | | | 240 | | | | | | | | |
| C2 | 115 | | | 130 | | | 155 | | | 180 | | | 220 | | | 300 | | | 130 | | | 155 | | | 180 | | | 220 | | | 300 | | | | | | | | |
| D2 | 24 | 28 | | 32 | 30 | 35 | 42 | 40 | 45 | 55 | 50 | | 70 | 60 | 100 | 32 | 30 | 35 | 42 | 40 | 45 | 55 | 50 | 70 | 60 | 100 | 32 | 30 | 35 | 42 | 40 | 45 | 55 | 50 | 70 | 60 | 100 | | |
| E | 206 | | | 262 | | | 326 | | | 407 | | | 522.5 | | | 654 | | | 306 | | | 384 | | | 479 | | | 609.5 | | | 766.5 | | | | | | | | |
| e | 38 | | | 52 | | | 64 | | | 82 | | | 110 | | | 140 | | | 42 | | | 52 | | | 67 | | | 90 | | | 115 | | | | | | | | |
| F | 9 | | | 11 | | | 13 | | | 15 | | | 17 | | | 21 | | | 11 | | | 13 | | | 15 | | | 17 | | | 21 | | | | | | | | |
| f | M8 | | | M10 | | | M12 | | | M14 | | | M16 | | | M18 | | | M10 | | | M12 | | | M14 | | | M16 | | | M18 | | | | | | | | |
| G | 122 | | | 155 | | | 194 | | | 244 | | | 320 | | | 400 | | | 135 | | | 170 | | | 214 | | | 280 | | | 350 | | | | | | | | |
| g | 61 | | | 77.5 | | | 97 | | | 122 | | | 160 | | | 200 | | | 67.5 | | | 85 | | | 107 | | | 140 | | | 175 | | | | | | | | |
| H | 71 | | | 90 | | | 112 | | | 140 | | | 180 | | | 225 | | | 80 | | | 100 | | | 125 | | | 160 | | | 200 | | | | | | | | |
| H1 | | | | | | | | | | | | | | | | | | | 32 | | | 36 | | | 43 | | | 58 | | | 73 | | | | | | | | |
| i | 125 | | | 159.5 | | | 199 | | | 249 | | | 322.5 | | | 404 | | | 213.5 | | | 269 | | | 336 | | | 429.5 | | | 541.5 | | | | | | | | |
| M2 | 27.3 | 31.3 | | 35.3 | 33.3 | 38.3 | 45.3 | 43.3 | 48.8 | 59.3 | 53.8 | | 74.9 | 64.4 | 106.4 | 35.3 | 33.3 | 38.3 | 45.3 | 43.3 | 48.8 | 59.3 | 53.8 | 74.9 | 64.4 | 106.4 | 35.3 | 33.3 | 38.3 | 45.3 | 43.3 | 48.8 | 59.3 | 53.8 | 74.9 | 64.4 | 106.4 | | |
| N2 | 8 | | | 8 | | | 10 | | | 8 | | | 10 | | | 12 | | | 10 | | | 8 | | | 10 | | | 12 | | | 10 | | | 8 | | | 10 | | |
| O | 64 | | | 82 | | | 102 | | | 127 | | | 162.5 | | | 204 | | | 146 | | | 184 | | | 229 | | | 289.5 | | | 366.5 | | | | | | | | |
| O1 | | | | | | | | | | | | | | | | | | | 194 | | | 248 | | | 311 | | | 391.5 | | | 493.5 | | | | | | | | |
| Z | 9 | | | 11 | | | 13 | | | 15 | | | 17 | | | 25 | | | 11 | | | 13 | | | 15 | | | 17 | | | 25 | | | | | | | | |

| | ZA...A | | | | | | ZA...B | | | | | | ZA...C | | | | | |
|----|--------|-------|------|-----|------|-----|--------|-------|-----|-----|------|----|--------|-----|-----|-----|--|--|
| | 71 | 90 | 112 | 140 | 180 | 225 | 80 | 100 | 125 | 160 | 200 | 80 | 100 | 125 | 160 | 200 | | |
| D1 | 19 | 24 | 28 | 38 | 48 | 60 | 19 | 24 | 28 | 38 | 48 | 14 | 19 | 24 | 28 | 38 | | |
| M1 | 21.5 | 27 | 31 | 41 | 51.5 | 64 | 21.5 | 27 | 31 | 41 | 51.5 | 16 | 21.5 | 27 | 31 | 41 | | |
| N1 | 6 | 8 | 8 | 10 | 14 | 18 | 6 | 8 | 8 | 10 | 14 | 5 | 6 | 8 | 8 | 10 | | |
| S | 105 | 127.5 | 150 | 190 | 230 | 260 | 105 | 127.5 | 150 | 190 | 230 | 95 | 117.5 | 140 | 170 | 230 | | |
| U | 65 | 77.5 | 90 | 110 | 150 | 150 | 65 | 77.5 | 90 | 110 | 150 | 65 | 77.5 | 90 | 110 | 150 | | |
| V | 40 | 50 | 60 | 80 | 80 | 110 | 40 | 50 | 60 | 80 | 80 | 30 | 40 | 50 | 60 | 80 | | |
| Kg | 11.5 | 18 | 30.5 | 52 | 104 | 210 | 18 | 34 | 62 | 114 | 250 | 20 | 38 | 68 | 125 | 275 | | |

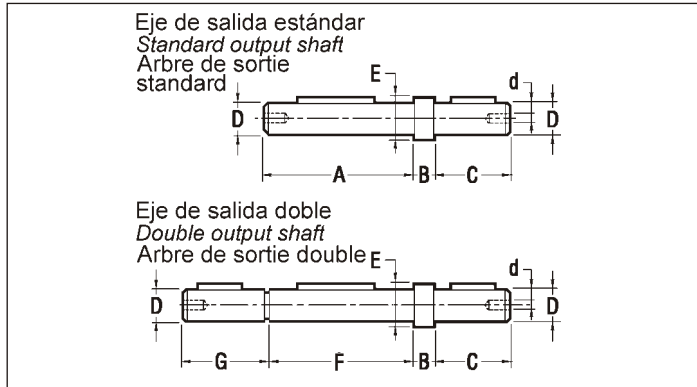
| | ZF...B | | | | | | | | | | | | ZF...C | | | | | | | | | | | | | | | | | | | | | | |
|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 80 | | | 100 | | | 125 | | | 160 | | | 200 | | | 80 | | | 100 | | | 125 | | | 160 | | | 200 | | | | | | | |
| IEC | 63 | 71 | 80 | 71 | 80 | 100 | 80 | 100 | 100 | 112 | 132 | 100 | 112 | 132 | 160 | 100 | 112 | 132 | 160 | 100 | 112 | 132 | 160 | 100 | 112 | 132 | 160 | 100 | 112 | 132 | 160 | 100 | 112 | 132 | 160 |
| Y | 140 | 160 | 200 | 160 | 200 | 250 | 200 | 250 | 300 | 250 | 300 | 350 | 250 | 300 | 350 | 400 | 140 | 160 | 200 | 140 | 160 | 200 | 160 | 200 | 250 | 200 | 250 | 300 | 250 | 300 | 350 | 250 | 300 | 350 | |
| R | 144 | 151 | 172 | 162 | 182 | 192 | 205 | 215 | 236 | 255 | 276 | 306 | 296 | 316 | 346 | 348 | 132 | 139 | 160 | 145 | 152 | 173 | 176 | 197 | 207 | 230 | 240 | 261 | 295 | 316 | 348 | 230 | 240 | 261 | |
| Kg | 21 | | | 39 | | | 72 | | | 131 | | | 280 | | | 23 | | | 43 | | | 78 | | | 142 | | | 305 | | | | | | | |

3.5 **Accesorios**

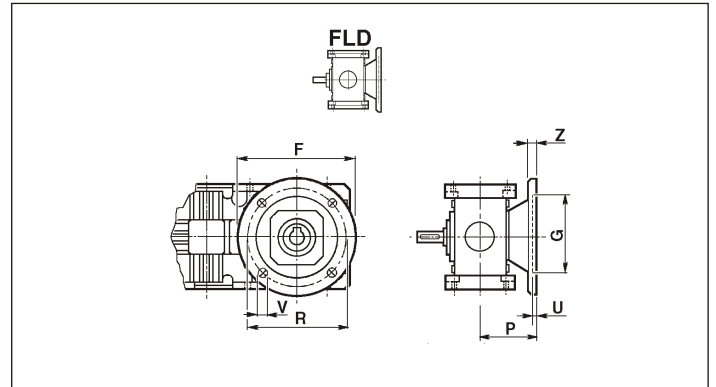
3.5 **Accessories**

3.5 **Accessoires**

Eje de salida / Output shaft / Arbre de sortie



Brida de salida / Output flange / Bride de sortie



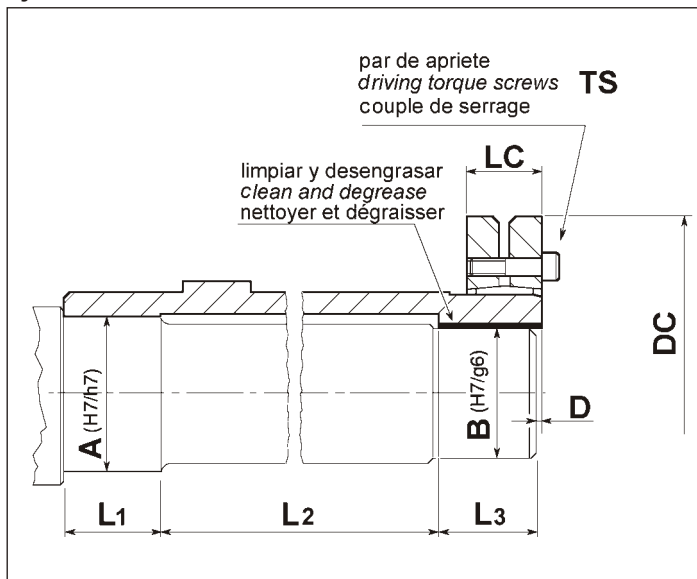
| | Z... | | | | | |
|-----------------------|------|-------------------|----------------------|----------------------|----------------------|----------------------|
| | 71A | 90A 80B 80C | 112A 100B 100C | 140A 125B 125C | 180A 160B 160C | 225A 200B 200C |
| A | 114 | 129 | 154 | 179 | 219 | 298 |
| B | 5 | 6 | 8 | 10 | 12 | 15 |
| C | 50 | 60 | 80 | 100 | 125 | 180 |
| D_{h6} | 24 | 32 | 42 | 55 | 70 | 100 |
| d | M8 | M8 | M10 | M10 | M12 | M18 |
| E | 30 | 40 | 50 | 65 | 80 | 118 |
| F | 115 | 130 | 155 | 180 | 220 | 300 |
| G | 49 | 59 | 79 | 99 | 124 | 178 |

| | Z... | | | | |
|-----------|------|-------------------|----------------------|----------------------|----------------------|
| | 71A | 90A 80B 80C | 112A 100B 100C | 140A 125B 125C | 180A 160B 160C |
| F | 160 | 200 | 250 | 300 | 350 |
| G | 110 | 130 | 180 | 230 | 250 |
| R | 130 | 165 | 215 | 265 | 300 |
| P | 87 | 100 | 125 | 150 | 180 |
| U | 4 | 4.5 | 5 | 5 | 6 |
| V | 9 | 11 | 13 | 15 | 17 |
| Z | 10 | 12 | 16 | 20 | 25 |
| Kg | 2 | 3.2 | 5 | 8 | 12.5 |

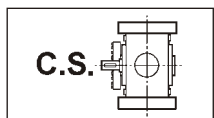
Eje de salida hueco con anillo de fijación

Hollow output shaft with shrink disc

Arbre creux de sortie avec frette de serrage



| | Z | | | | | |
|----------------------|-----|-------------------|----------------------|----------------------|----------------------|----------------------|
| | 71A | 90A 80B 80C | 112A 100B 100C | 140A 125B 125C | 180A 160B 160C | 225A 200B 200C |
| A | 27 | 37 | 47 | 57 | 72 | 102 |
| B | 25 | 35 | 45 | 55 | 70 | 100 |
| D | 2 | 2 | 2 | 2 | 2 | 3 |
| DC | 60 | 80 | 100 | 115 | 155 | 215 |
| LC | 22 | 26 | 31 | 31 | 39 | 54 |
| L₁ | 36 | 39 | 45 | 50 | 60 | 80 |
| L₂ | 68 | 82 | 100 | 115 | 135 | 200 |
| L₃ | 36 | 39 | 45 | 50 | 60 | 80 |
| TS (Nm) | 8 | 12 | 12 | 12 | 36 | 72 |

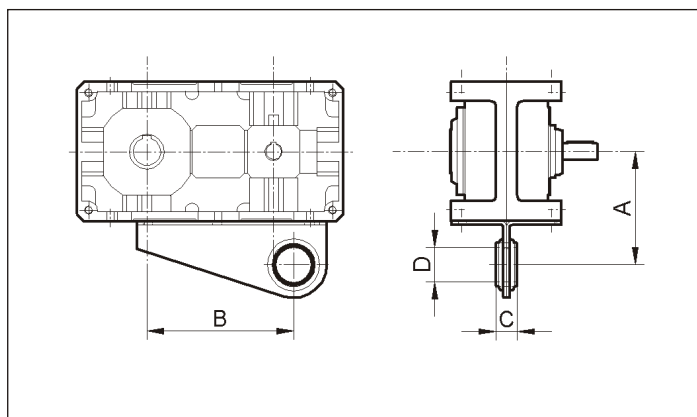
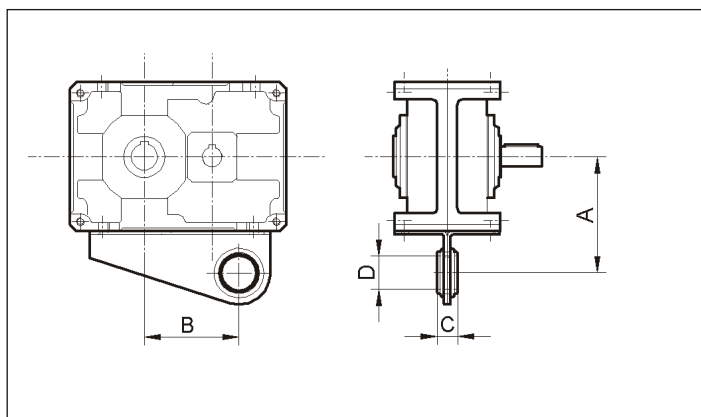




Brazo de reacción

Torque arm

Bras de réaction



| | Z...A | | | | | |
|---|-------|-----|------|------|-------|------|
| | 71A | 90A | 112A | 140A | 180A | 225A |
| A | 123 | 140 | 172 | 205 | 260 | 325 |
| B | 84 | 116 | 144 | 189 | 247.5 | 319 |
| C | 25 | 25 | 30 | 30 | 35 | 45 |
| D | 20 | 20 | 25 | 25 | 35 | 40 |

| | Z...B - Z...C | | | | |
|---|---------------|--------------|--------------|--------------|--------------|
| | 80B 80C | 100B 100C | 125B 125C | 160B 160C | 200B 200C |
| A | 130 | 160 | 190 | 240 | 300 |
| B | 170 | 214 | 276 | 354.5 | 456.5 |
| C | 25 | 30 | 30 | 35 | 45 |
| D | 20 | 25 | 25 | 35 | 40 |

Dispositivo antirretorno

Backstop device

Dispositif antidéviureur

Es posible suministrar el reductor con un dispositivo antirretorno con el fin de asegurar que el eje de salida gire solamente en la dirección deseada.

The gear unit can be supplied with backstop device; this ensures that the output shaft only turns in the permitted direction.

Sur demande on peut livrer le réducteur équipé de dispositif antidéviureur permettant la rotation de l'arbre de sortie uniquement dans le sens désiré.

Es necesario indicar en el pedido el sentido de rotación requerido (horario o antihorario).

Specify the rotation direction required (clockwise or anti-clockwise) when ordering.

Lors de la commande il faut préciser le sens de rotation désiré (horaire ou anti-horaire).

El dispositivo antirretorno se encuentra disponible solo en las versiones con 2 y 3 estadios de reducción.

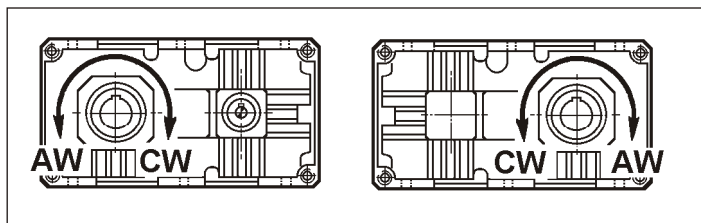
The Backstop device is available only for versions with 2 or 3 reduction stages.

Le dispositif antidéviureur est disponible uniquement en cas de 2 ou 3 trains de réduction.

Con dispositivo antirretorno el reductor se suministra con aceite lubricante sintético con viscosidad ISO 150.

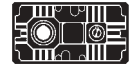
The gearboxes with back stop device are supplied with a synthetic lubricant featuring an ISO 150 viscosity class.

Le réducteur équipé de ce dispositif est livré rempli d'huile synthétique ayant degré de viscosité ISO 150.



CW
Rotación horaria
Clockwise rotation
Rotation horaire

AW
Rotación antihoraria
Anti-clockwise rotation
Rotation anti-horaire



3.6 Lubricación

Los reductores de ejes paralelos se suministran SIN ACEITE y con los correspondientes tapones de llenado, de nivel y de respiradero.

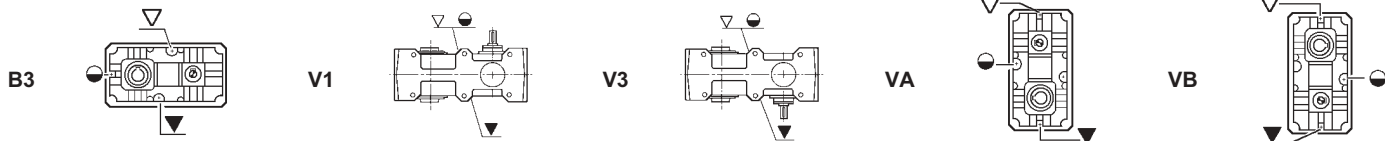
Recomendamos indicar la posición de montaje en el pedido.

BOMBA DE LUBRICACIÓN

Los reductores se pueden suministrar bajo pedido con una bomba de lubricación forzada para los rodamientos superiores en los tamaños 125, 140, 160, 180, 200 y 225 en la posición de montaje VA.

Posiciones de montaje y cantidad de aceite (Lt.)

En la posición de montaje V1 - V3 el tapón respiradero lleva incorporada una varilla de nivel.



| | Z | | | | | | | | | | |
|-----------|------|------------|-----|--------------|------|--------------|------|--------------|------|--------------|------|
| | 71A | 80B 80C | 90A | 100B 100C | 112A | 125B 125C | 140A | 160B 160C | 180A | 200B 200C | 225A |
| B3 | 0.6 | 1.2 | 1.2 | 2 | 2 | 3.7 | 3.7 | 7.1 | 7.1 | 13.5 | 13.5 |
| V1 | 0.75 | 1.5 | 1.5 | 2.6 | 2.6 | 4.8 | 4.8 | 9.2 | 9.2 | 17.5 | 17.5 |
| V3 | 0.75 | 1.5 | 1.5 | 2.6 | 2.6 | 4.8 | 4.8 | 9.2 | 9.2 | 17.5 | 17.5 |
| VA | 0.6 | 1.2 | 1.2 | 2 | 2 | 3.7 | 3.7 | 7.1 | 7.1 | 13.5 | 13.5 |
| VB | 0.7 | 1.3 | 1.3 | 2.2 | 2.2 | 4 | 4 | 7.8 | 7.8 | 14.8 | 14.8 |

3.7 Cargas radiales y axiales (N)

Las transmisiones realizadas mediante piñones de cadena, engranajes de módulo o poleas, generan una serie de fuerzas radiales (F_R) sobre el eje del reductor. Tal fuerza puede calcularse mediante la siguiente fórmula.

$$F_R = \frac{K_R \cdot T}{d} \text{ (N)}$$

- donde:
- T = Par (Nm)
 - d = Diámetro del piñón o de la polea (mm)
 - K_R = 2000 para piñones de cadena
 - = 2500 para engranajes de módulo
 - = 3000 para poleas trapeciales

Los valores de las cargas radiales y axiales generados por la aplicación deben ser siempre menores que o iguales a los valores que se indican en las siguientes tablas.

3.6 Lubrication

The parallel shaft gear units are supplied with standard oil lubrication, and come equipped with filling plugs, level indicators and oil discharge.

It is extremely important that desired mounting position be specified in your order.

OIL PUMP.

A pump for forced lubrication of the upper bearings is supplied on request for sizes 125, 140, 160, 180 and 225 in the VA mounting position.

Mounting positions and lubricant quantity (litres)

In mounting position V1-V3 the vent / filler plug is fitted with dipstick.

3.6 Lubrification

Les réducteurs à axes parallèles sont adaptés au graissage par huile et équipés de bouchons de remplissage et vidange et de jauge de niveau. Veuillez toujours préciser la position de montage souhaitée en cours de commande.

POMPE A HUILE

Sur demande on peut fournir une pompe pour le graissage forcé des roulements supérieurs dans les tailles 125, 140, 160, 180, 200 et 225 pour la position de montage VA.

Position de montage et quantité de lubrifiant (litres)

Pour les positions de montage V1-V3 il est prévu un bouchon reniflard avec jauge de niveau.

3.7 Radial and axial loads (N)

Transmission implemented by means of chain pinions, gears or pulleys generate radial forces (F_R) on the gear unit shafts. The entity of these forces may be calculated using this formula:

$$F_R = \frac{K_R \cdot T}{d} \text{ (N)}$$

- where:
- T = torque (Nm)
 - d = pinion or pulley diameter (mm)
 - K_R = 2000 for chain pinion
 - = 2500 for gears
 - = 3000 for V-belt pulleys

The value of the radial and axial loads generated by the application must always be less than or equal to admissible values as indicated in the chart.

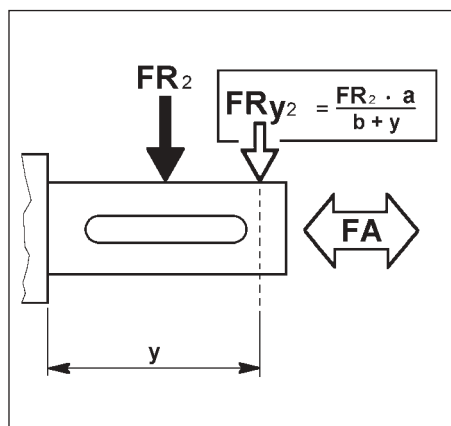
3.7 Charges radiales et axiales (N)

Les transmissions obtenues avec des pignons à chaîne, roues dentées ou poulies engendrent des forces radiales (F_R) agissant sur les arbres des réducteurs. L'intensité de ces efforts peut être calculée avec la formule :

$$F_R = \frac{K_R \cdot T}{d} \text{ (N)}$$

- Où :
- T = Couple (Nm)
 - D = Diamètre pignon ou poulie (mm)
 - K_R = 2000 pour pignon à chaîne
 - = 2500 pour roues dentées
 - = 3000 pour poulies avec courroies trapézoïdales

Les valeurs des charges radiales et axiales engendrées par l'application doivent être toujours inférieures ou égales à celles admissibles indiquées aux tableaux.





3.7 Cargas radiales y axiales (N)

3.7 Radial and axial loads (N)

3.7 Charges radiales et axiales (N)

| | Z 71A | | Z 90A | | Z 112A | | Z 140A | | Z 180A | | Z 225A | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| EJE DE ENTRADA / INPUT SHAFT / ARBRE D'ENTREE (n ₁ = 1400 rpm) | | | | | | | | | | | | |
| in | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} |
| Todas/ all / Tous | 630 | 130 | 1000 | 2000 | 1600 | 320 | 2500 | 500 | 4000 | 800 | 6400 | 1280 |
| EJE DE SALIDA / OUTPUT SHAFT / ARBRE DE SORTIE | | | | | | | | | | | | |
| | a=114.5 | b=84.5 | a=127.5 | b=95.5 | a=161.5 | b=113.5 | a=192 | b=132 | a=236.5 | b=162 | a=326 | b=221 |
| n ₂ (rpm) | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} |
| 600 | 2550 | 510 | 4000 | 800 | 6450 | 1290 | 10150 | 2030 | 16400 | 3280 | 32800 | 6560 |
| 475 | 2700 | 540 | 4250 | 850 | 6800 | 1360 | 10700 | 2140 | 17250 | 3450 | 34500 | 6900 |
| 375 | 2850 | 570 | 4500 | 900 | 7150 | 1430 | 11250 | 2250 | 18100 | 3620 | 36200 | 7240 |

| | Z 80B | | Z 100B | | Z 125B | | Z 160B | | Z 200B | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| EJE DE ENTRADA / INPUT SHAFT / ARBRE D'ENTREE (n ₁ = 1400 rpm) | | | | | | | | | | |
| in | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} |
| Todas/ all / Tous | 880 | 176 | 1450 | 290 | 2200 | 440 | 3450 | 690 | 4500 | 400 |
| EJE DE SALIDA / OUTPUT SHAFT / ARBRE DE SORTIE | | | | | | | | | | |
| | a=127.5 | b=95.5 | a=161.5 | b=113.5 | a=192 | b=132 | a=236.5 | b=162 | a=326 | b=221 |
| n ₂ (rpm) | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} |
| 300 | 4750 | 950 | 7500 | 1500 | 11800 | 2360 | 19000 | 3800 | 38000 | 7600 |
| 240 | 5000 | 1000 | 8000 | 1600 | 12500 | 2500 | 20000 | 4000 | 40000 | 8000 |
| 190 | 5300 | 1060 | 8500 | 1700 | 13200 | 2640 | 21200 | 4240 | 42400 | 8480 |
| 150 | 5600 | 1120 | 9000 | 1800 | 14000 | 2800 | 22400 | 4480 | 44800 | 8960 |
| 120 | 6000 | 1200 | 9500 | 1900 | 15000 | 3000 | 23600 | 4720 | 47200 | 9440 |
| 95 | 6300 | 1260 | 10000 | 2000 | 16000 | 3200 | 25000 | 5000 | 50000 | 10000 |
| 75 | 6700 | 1340 | 10600 | 2120 | 17000 | 3400 | 26500 | 5300 | 53000 | 10600 |
| 60 | 7100 | 1420 | 11200 | 2240 | 18000 | 3600 | 28000 | 5600 | | |
| ≤ 50 | 7500 | 1500 | 11800 | 2360 | 19000 | 3800 | 30000 | 6000 | | |

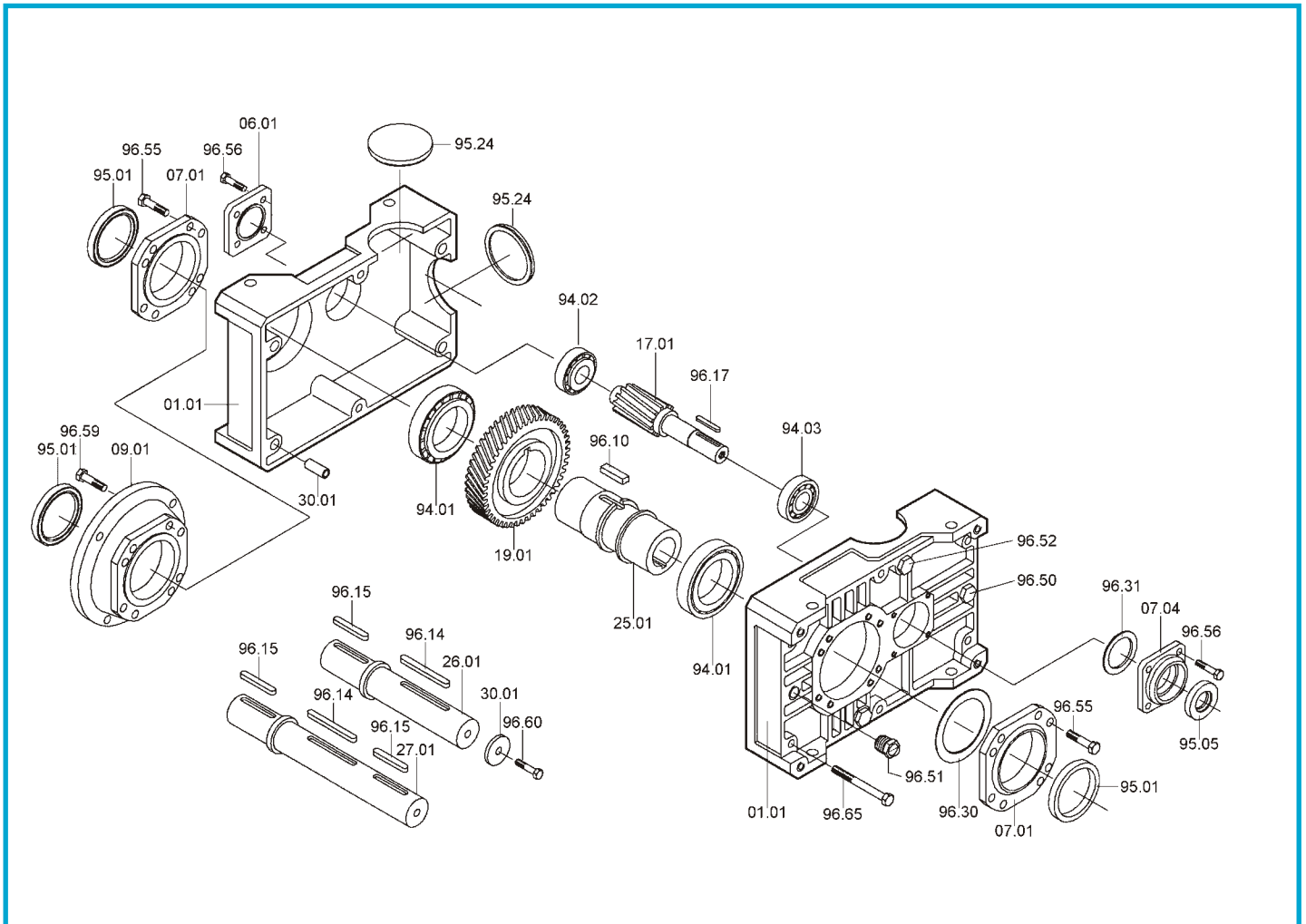
| | Z 80C | | Z 100C | | Z 125C | | Z 160C | | Z 200C | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| EJE DE ENTRADA / INPUT SHAFT / ARBRE D'ENTREE (n ₁ = 1400 rpm) | | | | | | | | | | |
| in | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} | F _{r1} | F _{a1} |
| Todas/ all / Tous | 500 | 100 | 630 | 130 | 1000 | 200 | 1600 | 320 | 2500 | 500 |
| EJE DE SALIDA / OUTPUT SHAFT / ARBRE DE SORTIE | | | | | | | | | | |
| | a=127.5 | b=95.5 | a=161.5 | b=113.5 | a=192 | b=132 | a=236.5 | b=162 | a=326 | b=221 |
| n ₂ (rpm) | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} | F _{r2} | F _{a2} |
| ≤ 60 | 7500 | 1500 | 11800 | 2360 | 19000 | 3800 | 30000 | 6000 | 53000 | 10600 |

Las cargas radiales indicadas en las tablas se han considerado aplicándolas en la mitad del eje en un reductor que opere con factor de servicio de 1.

The radial loads indicated in the chart are considered to be applied to the half-way point of the projection (a) of the shaft, and refer to gear units operating with service factor 1.

Les charges radiales indiquées aux tableaux s'entendent appliquées à mi-bout d'arbre et se réfèrent à des réducteurs en exercice avec facteur de service 1.

ZA..A



| ZA | Rodamientos / Bearings / Roulements | | | Retenes / Oilseals / Bagues d'étanchéité | |
|-------------|-------------------------------------|------------------------------|-----------------------------------|--|----------|
| | 94.01 | 94.02 | 94.03 | 95.01 | 95.05 |
| 71A | 32008 40/68/19 | 30302 15/42/14.25 | 32004 20/42/15 | 40/56/8 | 20/35/7 |
| 90A | 32010 50/80/20 | 30204 20/47/15.25 | 32005 25/47/15 | 50/65/8 | 25/47/7 |
| 112A | 32012 60/95/23 | 30305 25/62/18.25 | 30206 30/62/17.25 | 60/80/10 | 30/52/7 |
| 140A | 32015 75/115/25 | 32206 30/62/21.25 | 32008 40/68/19 | 75/95/10 | 40/56/8 |
| 180A | 32019 95/145/32 | 30307 35/80/22.75 | (32208)* (40/80/24.75)* | 95/125/12 | 50/65/8 |
| 225A | 32026 130/200/45 | 31310 50/110/29.25 | 33113 65/110/34 | 130/160/12 | 65/80/10 |

*Solo en la versión con antirretorno

*Only in the Backstop device

*Uniquement version avec antidévierneur

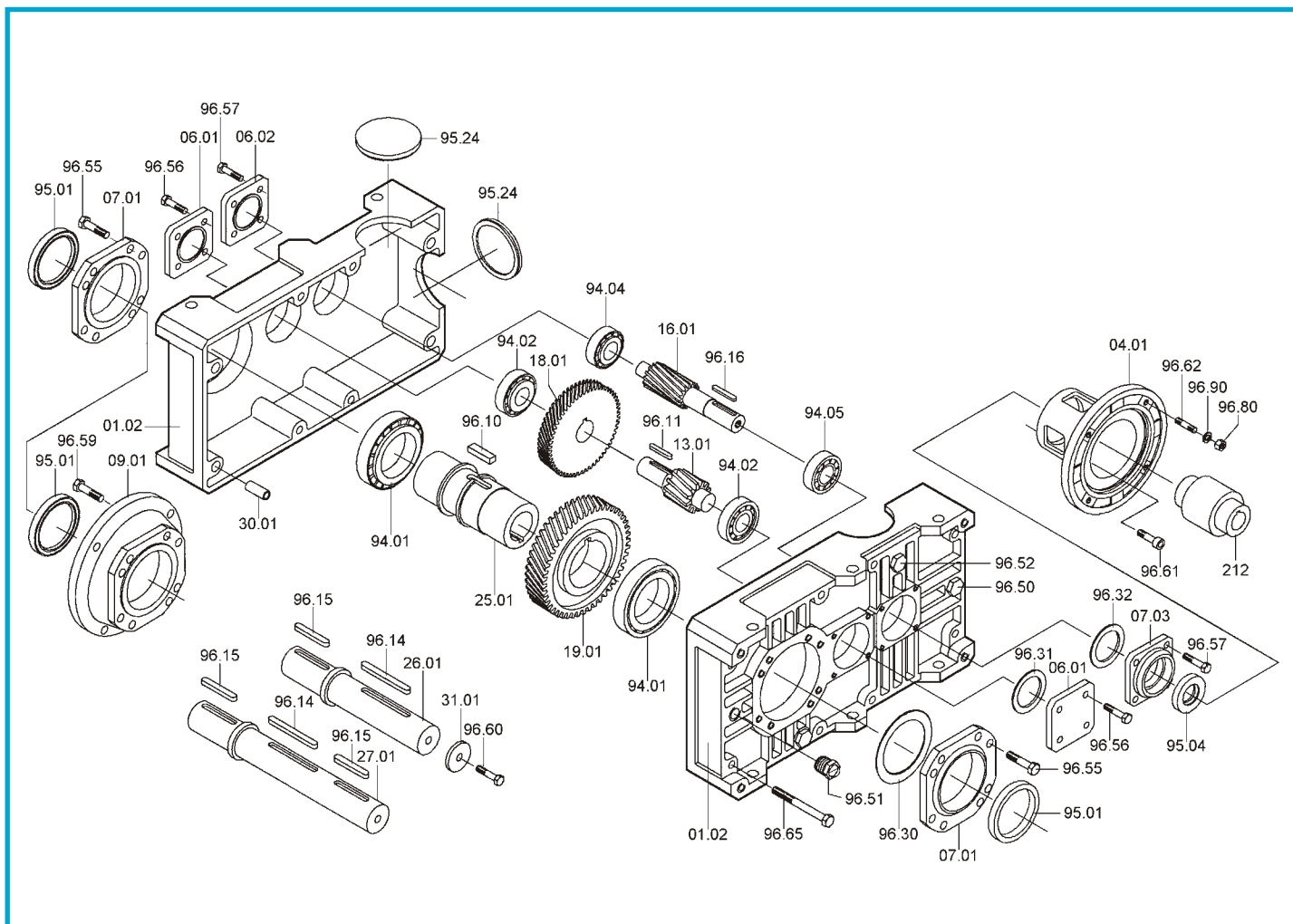


3.8 Lista de recambios

3.8 Spare part list

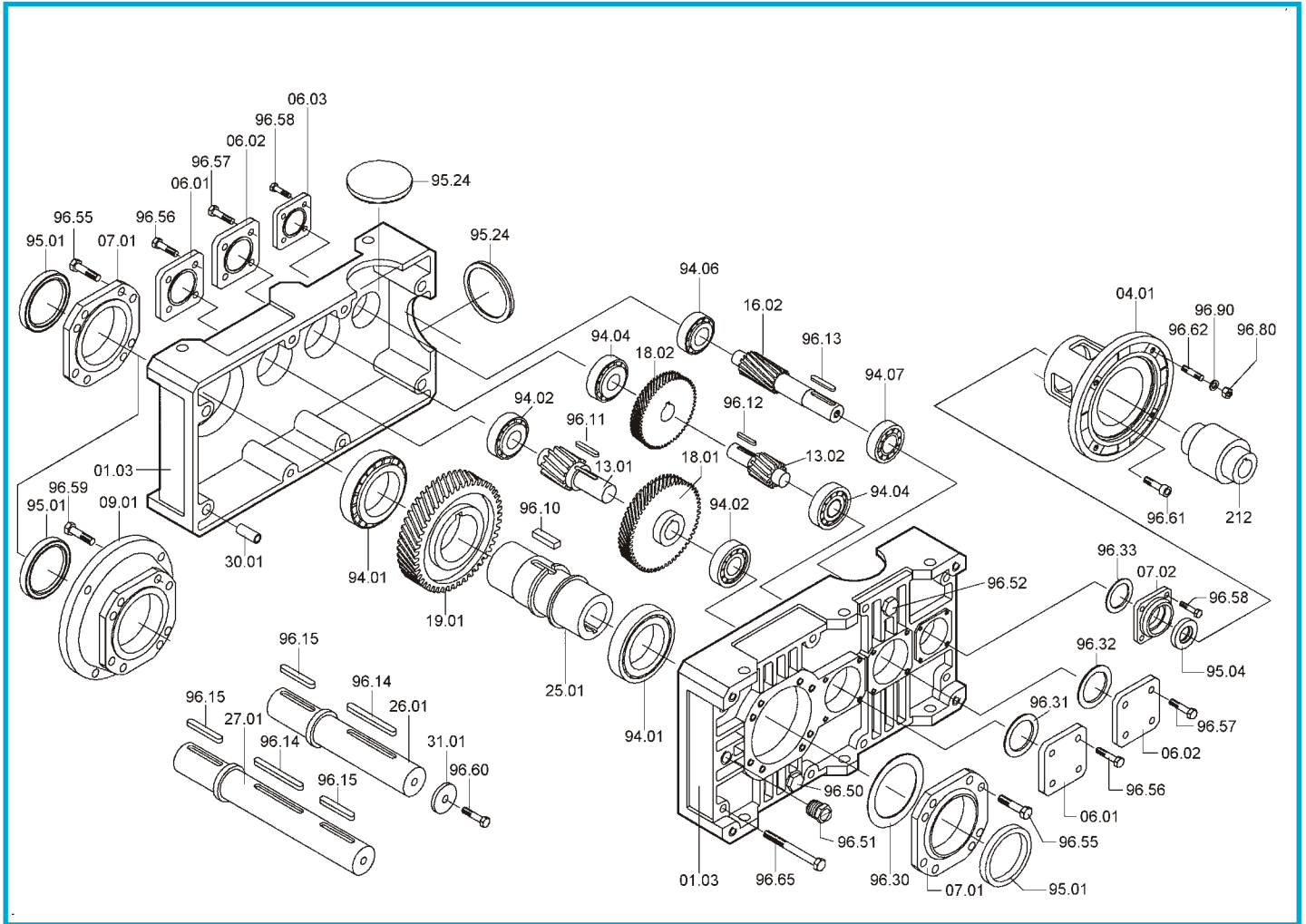
3.8 Liste des pièces détachées

ZA..B - ZF..B

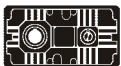


| ZA - ZF | Rodamientos / Bearings / Roulements | | | | Retenes / Oilseals / Bagues d'étanchéité | |
|-------------|-------------------------------------|------------------------------|-----------------------------|-----------------------------|--|---------|
| | 94.01 | 94.02 | 94.04 | 94.05 | 95.01 | 95.04 |
| 80B | 32010 50/80/20 | 30204 20/47/15.25 | 30302 15/42/14.25 | 32004 20/42/15 | 50/65/8 | 20/40/7 |
| 100B | 32012 60/95/23 | 30305 25/62/18.25 | 30204 20/47/15.25 | 32005 25/47/15 | 60/80/10 | 25/47/7 |
| 125B | 32015 75/115/25 | 32206 30/62/21.25 | 30305 25/62/18.25 | 30206 30/62/17.25 | 75/95/10 | 30/52/7 |
| 160B | 32019 95/145/32 | 32207 35/72/24.25 | 32206 30/62/21.25 | 32008 40/68/19 | 95/125/12 | 40/56/8 |
| 200B | 32026 130/200/45 | 31310 50/110/29.25 | 32208 40/80/24.75 | 32010 50/80/20 | 130/160/12 | 50/65/8 |

ZA..C - ZF..C

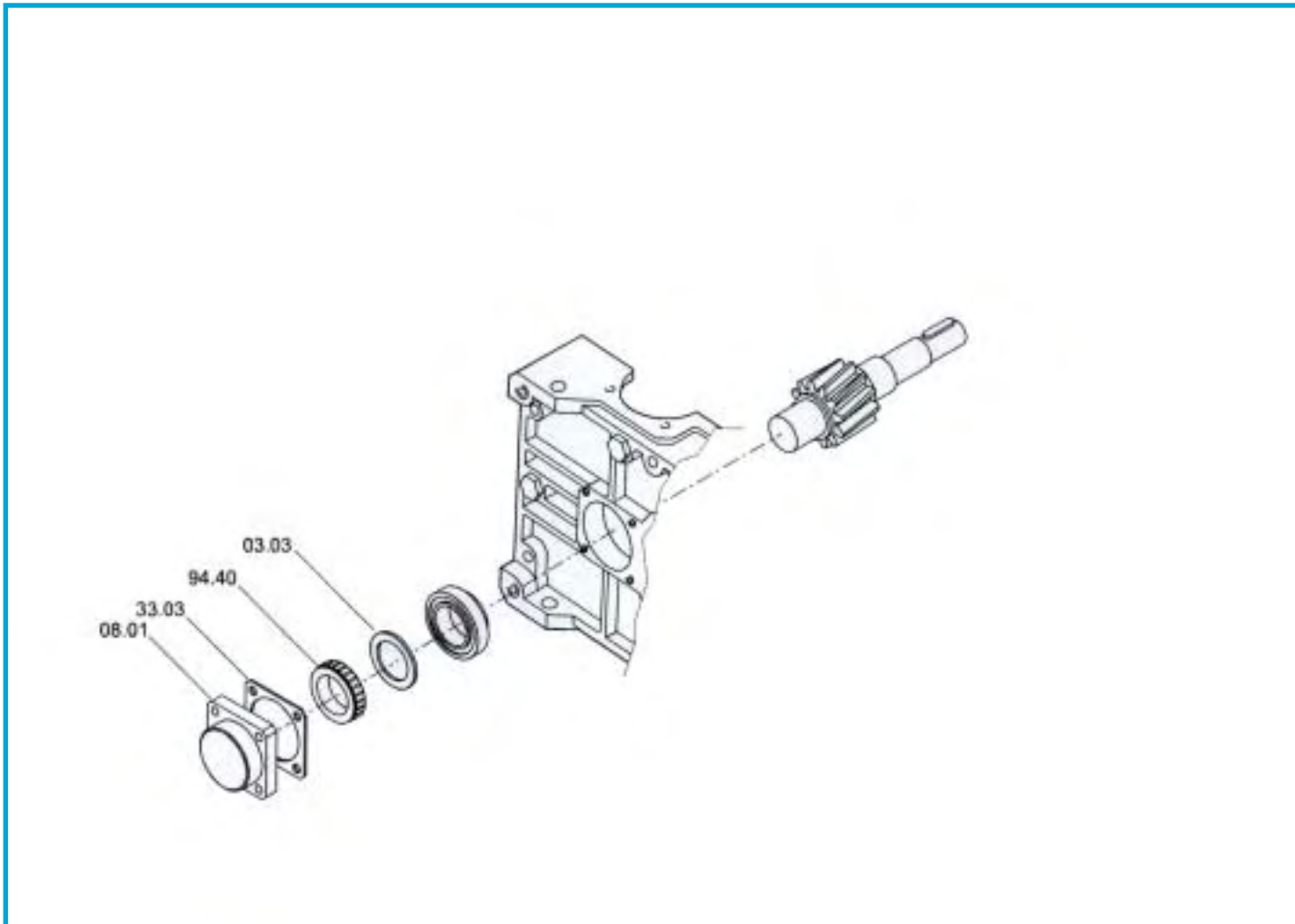


| ZA - ZF | Rodamientos / Bearings / Roulements | | | | | Retenes / Oilseals / Bagues d'étanchéité | |
|-------------|-------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--|---------|
| | 94.01 | 94.02 | 94.04 | 94.06 | 94.07 | 95.01 | 95.04 |
| 80C | 32010 50/80/20 | 30204 20/47/15.25 | 30302 15/42/14.25 | 3202 15/35/15.9 | 3202 15/35/15.9 | 50/65/8 | 15/30/7 |
| 100C | 32012 60/95/23 | 30305 25/62/18.25 | 30204 20/47/15.25 | 30302 15/42/14.25 | 32004 20/42/15 | 60/80/10 | 20/40/7 |
| 125C | 32015 75/115/25 | 32206 30/62/21.25 | 30305 25/62/18.25 | 30204 20/47/15.25 | 32005 25/47/15 | 75/95/10 | 25/47/7 |
| 160C | 32019 95/145/32 | 32207 35/72/24.25 | 32206 30/62/21.25 | 30305 25/62/18.25 | 30206 30/62/17.25 | 95/125/12 | 30/52/7 |
| 200C | 32026 130/200/45 | 31310 50/110/29.25 | 30307 35/80/22.75 | 32206 30/62/21.25 | 32008 40/68/19 | 130/160/12 | 40/56/8 |



ZA..B - ZF..B - ZA..C - ZF..C

Dispositivo antirretorno - Backstop device - Dispositif antidéviEUR



Con dispositivo antirretorno el reductor se suministra con aceite lubricante sintético con viscosidad ISO 150.

Gearboxes with back stop device are supplied with a synthetic lubricant featuring an ISO 150 viscosity class.

Si équipé de dispositif antidéviEUR le réducteur est livré rempli d'huile synthétique ayant degré de viscosité ISO 150.

En el momento de realizar el pedido de los recambios necesarios, es preciso indicar siempre el num. de cada pieza referenciado en el despiece, fecha (1), nº de código (2) y variable (3). Ver placa de características.

When you need to order a spare part, you must always specify the detail number (look at technical drawing), manufacture date (1), code number (2) and variable (3) (look at data plate).

Lors de la commande de pièces détachées, toujours rappeler le n° de la pièce (voir plan éclaté), la date (1), le n° du code (2) et le n° de la variante (3). (Voir plaque signalétique).

| TIPO | TYPE | RAP. | RATIO |
|-----------------------------|---------|---------------|-------|
| | | DATA 1 | DATE |
| CODICE N° 2 | CODE N° | 3 | |
| TRAMEC BOLOGNA ITALY | | | |

| TIPO | TYPE | RAP. | RATIO |
|-----------------------------|---------|---------------|-------|
| | | DATA 1 | DATE |
| CODICE N° 2 | CODE N° | 3 | |
| TRAMEC BOLOGNA ITALY | | | |

| TIPO | TYPE | RAP. | RATIO |
|-----------------------------|---------|---------------|-------|
| | | DATA 1 | DATE |
| CODICE N° 2 | CODE N° | 3 | |
| TRAMEC BOLOGNA ITALY | | | |