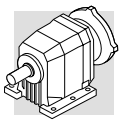
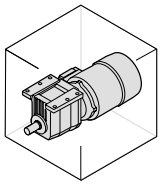


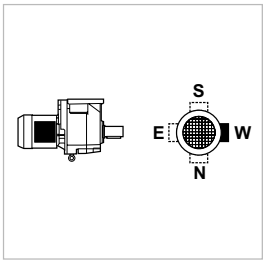
C_P

(B14)

_HS	_P (IEC)	_S

B8





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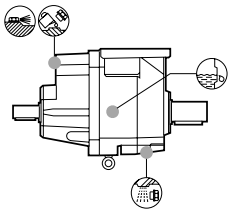
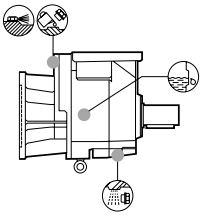
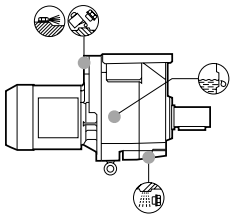
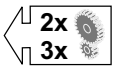
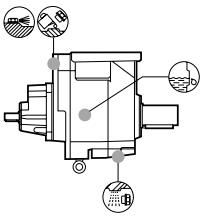
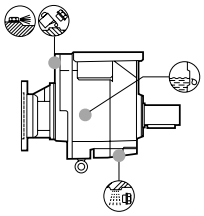
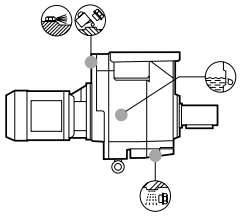
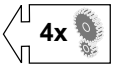
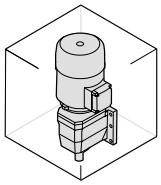
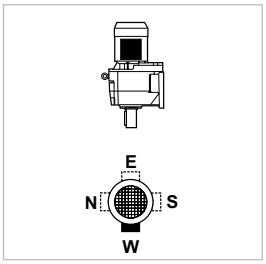





V5





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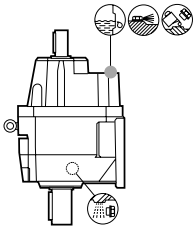
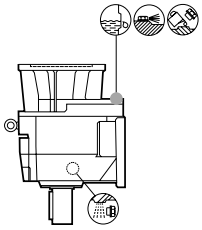
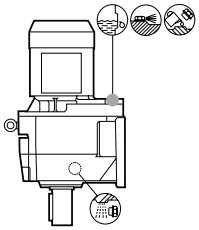


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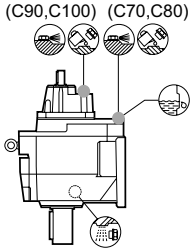
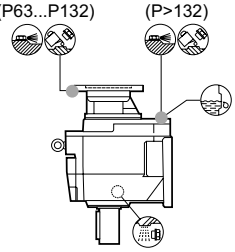
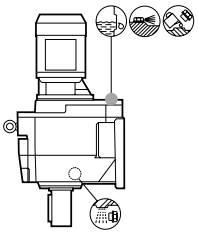
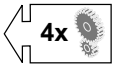
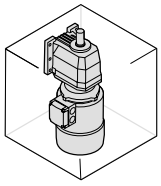
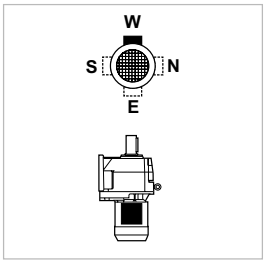


(P63...P132) (P>132)

V6





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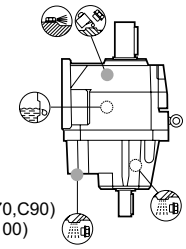
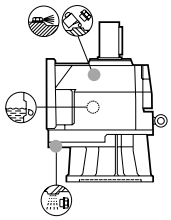
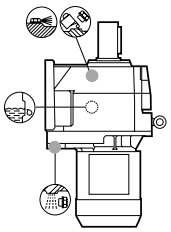
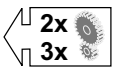
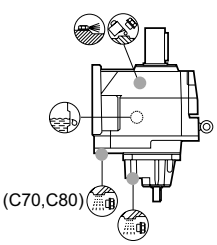
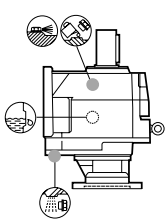
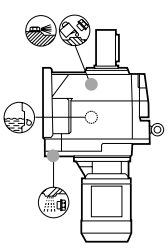
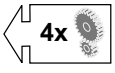




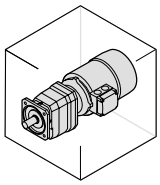




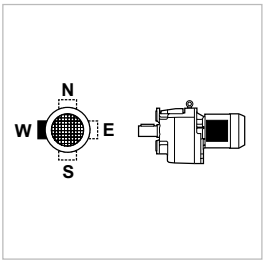
C_F

(B15)

_HS	_P (IEC)	_S

B5





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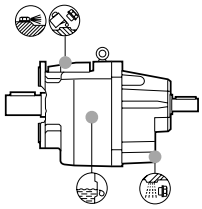
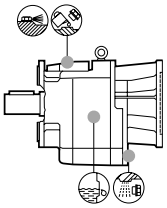
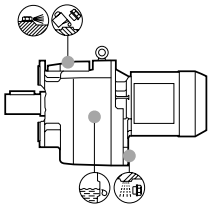
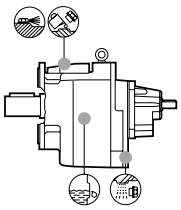
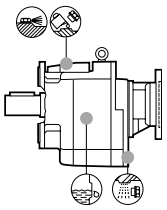
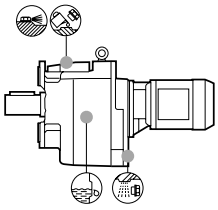
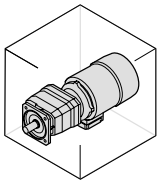
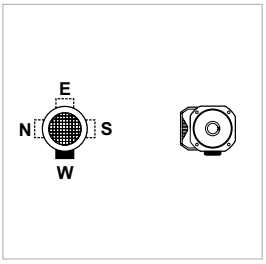




B51





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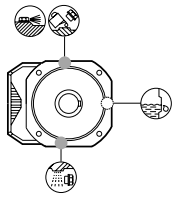
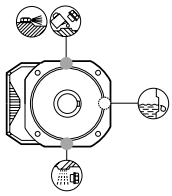
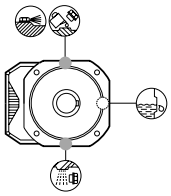

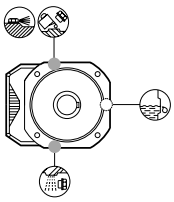
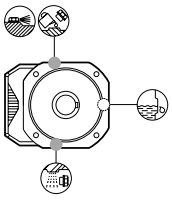
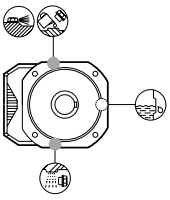

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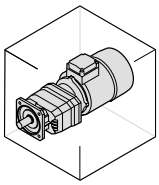

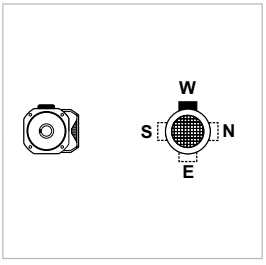

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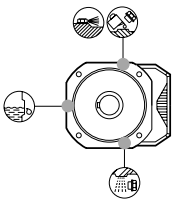
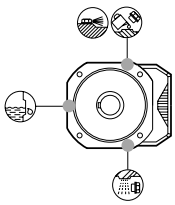
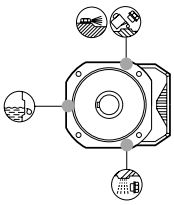
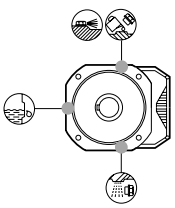
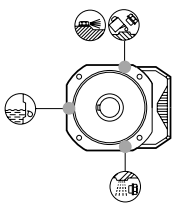
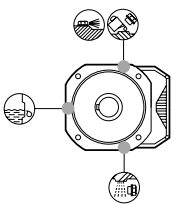
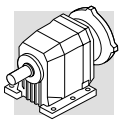




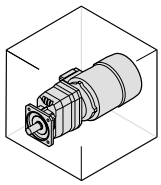


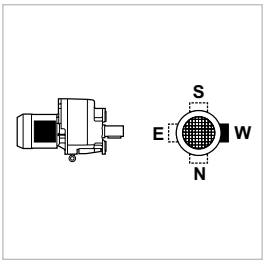
C_F

(B16)

_HS	_P (IEC)	_S

B52





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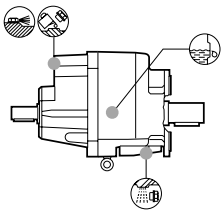
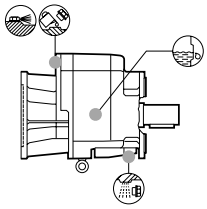
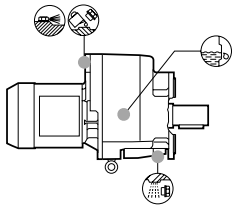

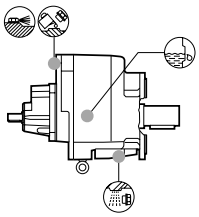
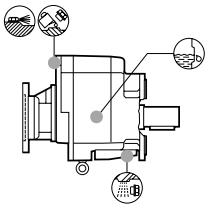
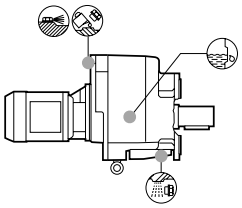

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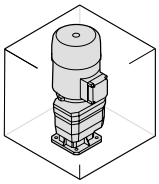

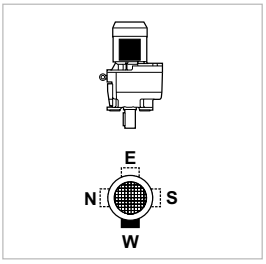

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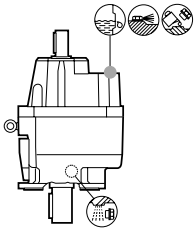
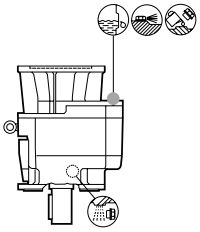
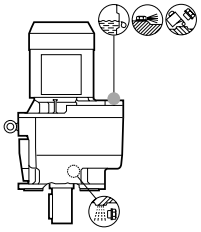
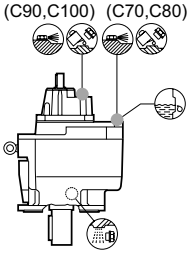
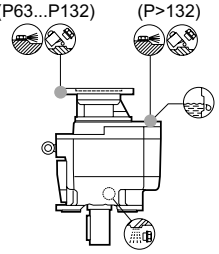
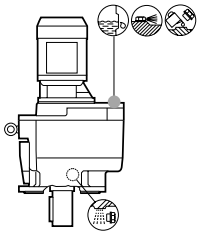




(C90,C100) (C70,C80)



(P63...P132) (P>132)

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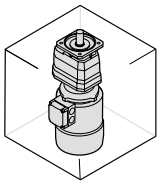

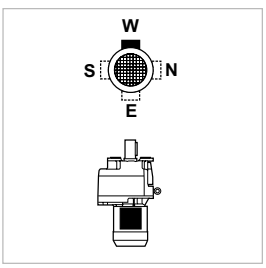

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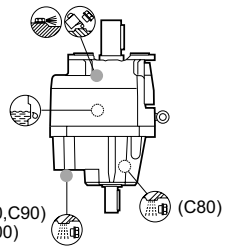
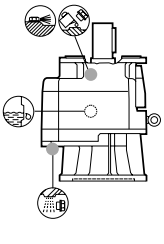
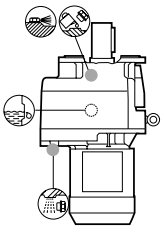
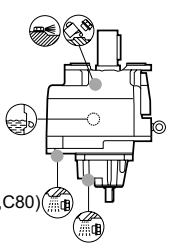
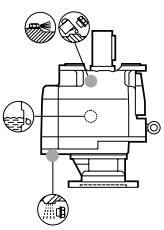
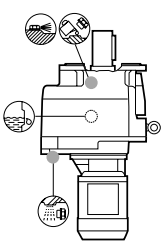
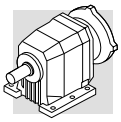






22 - CARICHI RADIALI

Organi di trasmissione calettati sugli alberi di ingresso e/o di uscita del riduttore generano forze la cui risultante agisce in senso radiale sull'albero stesso. L'entità di questi carichi deve essere compatibile con la capacità di sopportazione del sistema albero-cuscinetti del riduttore, in particolare il valore assoluto del carico applicato (R_{c1} per albero di ingresso, R_{c2} per albero di uscita) deve essere inferiore al valore nominale (R_{n1} per albero di ingresso, R_{n2} per albero di uscita) riportato nelle tabelle dati tecnici.
Nelle formule che seguono l'indice (1) si riferisce a grandezze relative all'albero veloce, l'indice (2) all'albero lento.
Il carico generato da una trasmissione esterna può essere calcolato, con buona approssimazione, tramite la formula seguente:

22 - OVERHUNG LOADS

External transmissions keyed onto input and/or output shaft generate loads that act radially onto same shaft.
Resulting shaft loading must be compatible with both the bearing and the shaft capacity. Namely shaft loading (R_{c1} for input shaft, R_{c2} for output shaft), must be equal or lower than admissible overhung load capacity for shaft under study (R_{n1} for input shaft, R_{n2} for output shaft). OHL capability listed in the rating chart section.
In the formulas given below, index (1) applies to parameters relating to input shaft, whereas index (2) refers to output shaft.
The load generated by an external transmission can be calculated with close approximation by the following equations:

22 - RADIALKRÄFTE

Die mit den Antriebs- und/oder Abtriebswellen des Getriebes verbundenen Antriebsorgane bilden Kräfte, die in radiale Richtung auf die Welle selbst wirken.
Das Ausmaß dieser Kräfte muß mit der Festigkeit des Systems aus Getriebewelle/-lager kompatibel sein, insbesondere muß der absolute Wert der angetragenen Belastung (R_{c1} für Antriebswelle und R_{c2} für Abtriebswelle) unter dem in den Tabellen der Technischen Daten angegebenen Nennwert (R_{n1} für Antriebswelle und R_{n2} für Abtriebswelle) liegen.
In den nachstehenden Formeln bezieht sich die Angabe (1) auf die Maße der Antriebswelle, die Angabe (2) auf die Abtriebswelle.
Die von einem externen Antrieb erzeugte Kraft kann, recht genau, anhand der nachstehenden Formel berechnet werden:

22 - CHARGES RADIALES

Les organes de transmission calés sur les arbres d'entrée et/ou de sortie du réducteur génèrent des forces dont la résultante agit sur l'arbre dans le sens radial.
L'entité de ces charges doit être compatible avec la capacité d'endurance du système arbre-roulements du réducteur. Plus particulièrement, la valeur absolue de la charge appliquée (R_{c1} pour l'arbre d'entrée, R_{c2} pour l'arbre de sortie) doit être inférieure à la valeur nominale (R_{n1} pour l'arbre d'entrée, R_{n2} pour l'arbre de sortie) indiquée dans les tableaux des données techniques.
Dans les formules qui suivent, l'indice (1) se réfère à des tailles relatives à l'arbre rapide, l'indice (2) concerne l'arbre lent.
La charge générée par une transmission extérieure peut être calculée, avec une bonne approximation, au moyen de la formule suivante:

$$R_{c1}[N] = \frac{2000 \cdot M_1[Nm] \cdot K_r}{d\,[mm]} \quad ; \quad R_{c2}[N] = \frac{2000 \cdot M_2[Nm] \cdot K_r}{d\,[mm]} \qquad (16)$$

dove:		*where:*		dabei:		*où:*	
$M_{1\text{-}2}$[Nm] =	coppia applicata all'albero	*$M_{1\text{-}2}$[Nm] =*	*torque applied to shaft*	$M_{1\text{-}2}$[Nm]=	Drehmoment an der Welle	*$M_{1\text{-}2}$[Nm] =*	*couple appliqué à l'arbre*
d [mm] =	diametro primitivo organo calettato	*d [mm] =*	*pitch diameter of part keyed on to shaft*	d [mm]=	Teilkreisdurchmes ser des aufgekeilten Organs	*d [mm] =*	*diamètre primitif organe calé*
K_r = 1	trasmissione con catena	*K_r = 1*	*chain transmission*	K_r = 1	Kettenantrieb	*K_r = 1*	*transmission avec chaîne*
K_r = 1,25	trasmissione ad ingranaggio	*K_r = 1,25*	*gear transmission*	K_r = 1,25	Zahnradantrieb	*K_r = 1,25*	*transmission à engrenage*
K_r = 1,5-2,0	trasmissione a cinghia	*K_r = 1,5-2,0*	*belt transmission*	K_r = 1,5-2,0	Antrieb über Keilriemen	*K_r = 1,5-2,0*	*transmission à courroie*

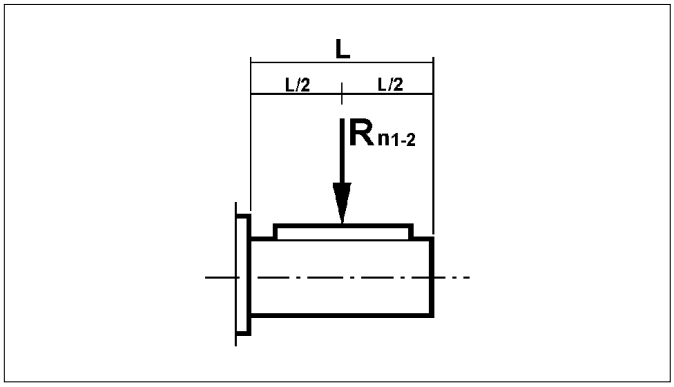
In base al punto di applicazione del carico sull'albero la verifica di compatibilità procederà in modi diversi e in particolare:

Verification of OHL capability varies depending on whether load applies at midpoint of shaft or it is shifted further out:

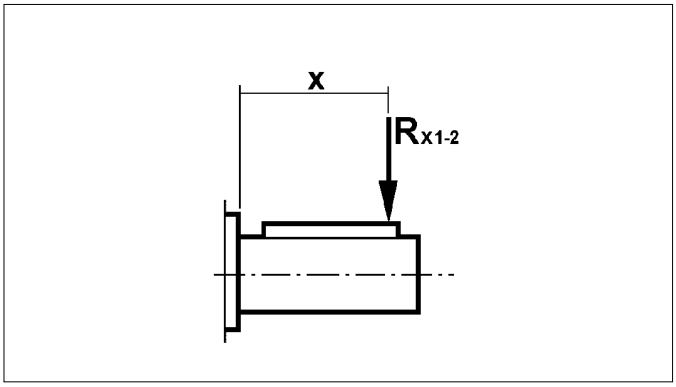
In Abhängigkeit zum Kraftanangriffspunkt an der Welle erfolgt die Kontrolle hinsichtlich der Kompatibilität in unterschiedlicher Weise und insbesondere:

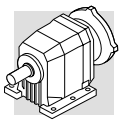
En fonction du point d'application de la charge sur l'arbre, la vérification de la compatibilité sera différente, plus particulièrement:

(B17)



(B18)





a) Applicazione in mezzeria, tab. (B17)

Il carico precedentemente calcolato si dovrà confrontare con il corrispondente valore nominale esposto a catalogo e dovrà verificarsi:

$R_{c1} \leq R_{n1}$ [albero veloce]

oppure

$R_{c2} \leq R_{n2}$ [albero lento]

a) Load applied at midpoint of shaft, tab.(B17)

A comparison of shaft loading with catalogue OHL ratings should verify the following condition:

$R_{c1} \leq R_{n1}$ *[input shaft]*

or

$R_{c2} \leq R_{n2}$ *[output shaft]*

a) Kraftangriffspunkt in der Mitte, Tab. (B17)

Der zuvor errechnete Wert muß mit dem im Katalog angegebenen Nennwert verglichen werden. Es muß sich folgendes ergeben:

$R_{c1} \leq R_{n1}$ [Antriebswelle]

oder

$R_{c2} \leq R_{n2}$ [Abtriebswelle]

a) Application au milieu, tab. (B17)

La charge précédemment calculée doit être comparée avec la valeur nominale correspondante indiquée dans le catalogue, on doit vérifier :

$R_{c1} \leq R_{n1}$ *[arbre rapide]*

ou

$R_{c2} \leq R_{n2}$ *[arbre lent]*

b) Applicazione spostata dalla mezzeria, tab. (B18)

L'applicazione del carico ad una distanza "x" dalla battuta dell'albero comporta il ricalcolo del valore ammissibile a detta distanza.
Il nuovo valore è individuato con i simboli R_{x1}(ingresso) e R_{x2} (uscita) e si ricava dai valori di catalogo, rispettivamente R_{n1} e R_{n2}, tramite l'elaborazione del fattore:

b) Load off the midpoint tab. (B18)

When load is shifted at an "x" distance from shaft shoulder, permissible load must be calculated for that distance.
Revised permissible overhung loads R_{x1} (input) and R_{x2} (output) are calculated respectively from original rated values R_{n1} and R_{n2} through factor:

b) Von der Mitte versetzter Kraftangriffspunkt Tab. (B18)

Der auf einer Distanz "x" vom Wellenansatz liegende Kraftangriffspunkt fordert eine erneute Berechnung des für diesen Abstand zulässigen Werts.
Der neue Wert wird mit den Symbolen R_{x1} (Antrieb) und R_{x2} (Abtrieb) gekennzeichnet und unter Anwendung der nachstehenden Faktorenberechnung aus den Katalog- werten R_{n1} und R_{n2}:

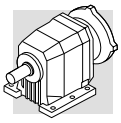
b) Application déplacée du milieu, tab. (B18)

L'application de la charge à une distance "x" de la butée de l'arbre implique un nouveau calcul de la valeur admissible à cette distance.
La nouvelle valeur est indiquée par les symboles R_{x1} (entrée) et R_{x2} (sortie) ou peut être calculée d'après les valeurs de catalogue, respectivement R_{n1} et R_{n2}, en élaborant le facteur :

$$\frac{a}{b+x} \qquad (17)$$

(B19)

	Costanti del riduttore / *Load location factors* / Getriebekonstanten / *Constantes du réducteur*					
	Albero lento / *Output shaft* Abtriebswelle / *Arbre lent*			Albero veloce / *Input shaft* Antriebswelle / *Arbre rapide*		
	a	**b**	**c**	**a**	**b**	**c**
C 05 2	38	18	250	—	—	—
C 11 2	46	26	450	21	1	300
C 21 2	53	28	550	40	20	350
C 21 3	53	28	550	21	1	300
C 31 2	60.5	30.5	750	41.5	21.5	350
C 31 3	60.5	30.5	750	21	1	300
C 35 2 - C 35 3	69.5	34.5	800	51.5	26.5	450
C 35 4	69.5	34.5	800	21	1	300
C 41 2 - C 41 3	69.5	34.5	850	51.5	26.5	450
C 41 4	69.5	34.5	850	40	20	350
C 51 2 - C 51 3	76.5	36.5	900	51.5	26.5	450
C 51 4	76.5	36.5	900	41.5	21.5	350
C 61 2 - C 61 3	95.5	45.5	1000	57.5	27.5	450
C 61 4	95.5	45.5	1000	51.5	26.5	450
C 70 2 - C 70 3	114	54	1200	86	31	1000
C 70 4	114	54	1200	49.5	24.5	450
C 80 2 - C 80 3	131	61	1500	86	31	1000
C 80 4	131	61	1500	49.5	24.5	450
C 90 2 - C 90 3	161	76	2000	116	46	1400
C 90 4	161	76	2000	49.5	24.5	450
C 100 2 - C 100 3	163.5	58.5	2500	116	46	1400
C 100 4	163.5	58.5	2500	49.5	24.5	450



La procedura di verifica comporta passi successivi che sono qui descritti.

Verification procedure is described here after.

Das Kontrollverfahren zieht die nachstehend beschriebenen Schritte nach sich.

La procédure de vérification comporte les pas successifs indiqués ici.

ALBERO VELOCE | ***INPUT SHAFT*** | **ANTRIESBWELLE** | ***ARBRE RAPIDE***

1. Calcolo di: | *1. Calculate:* | 1. Berechnung von: | *1. Calcul de:*

$$R_{x1} = R_{n1} \cdot \frac{a}{b + x} \qquad (18)$$

N.B. A condizione che: | *N.B. Subject to condition:* | HINWEIS unter der Bedingung, daß: | *N.B. A condition que:*

$$\frac{L}{2} \leq x \leq c \qquad (19)$$

Infine si dovrà verificare che: | *Finally, the following condition must be verified:* | Dies als Voraussetzung, muß sich folgendes ergeben: | *Ensuite, vérifier que:*

$$R_{c1} \leq R_{x1} \qquad (20)$$

ALBERO LENTO | ***OUTPUT SHAFT*** | **ABTRIEBSWELLE** | ***ARBRE LENT***

1. Calcolo di: | *1. Calculate:* | 1. Berechnung von: | *1. Calcul de:*

$$R_{x2} = R_{n2} \cdot \frac{a}{b + x} \qquad (21)$$

N.B. A condizione che: | *N.B. Subject to condition:* | HINWEIS unter der Bedingung, daß: | *N.B. A condition que:*

$$\frac{L}{2} \leq x \leq c \qquad (22)$$

Infine si dovrà verificare che: | *Finally, the following condition must be verified:* | Dies als Voraussetzung, muß sich folgendes ergeben: | *Ensuite, vérifier que:*

$$R_{c2} \leq R_{x2} \qquad (23)$$