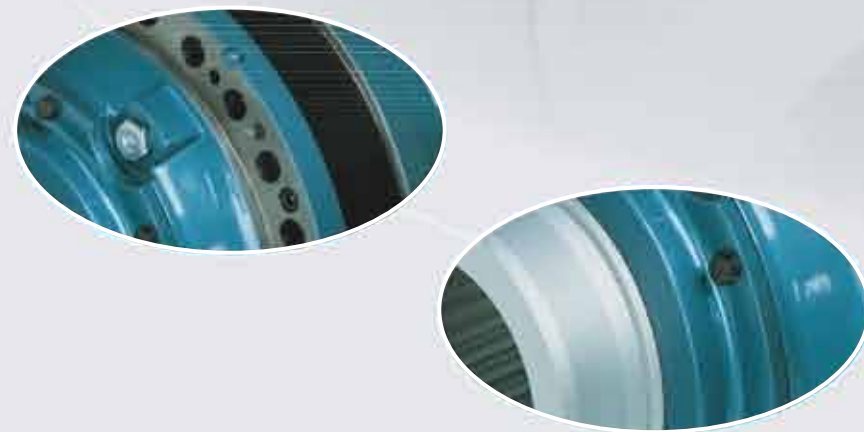


 **brevini**
power
transmission

S - SERIES



S - SERIES

I riduttori epicicloidali "Serie S" sono la proposta innovativa che la Brevini Riduttori offre al mercato, migliorando le prestazioni e le caratteristiche applicative che determinarono il grande successo della precedente "Serie PDL", in produzione da circa trenta anni.

La "Serie S" rappresenta la proposta ottimale per tutte le applicazioni in cui viene richiesta elevata coppia con minimi ingombri, sia su impianti fissi industriali che su macchine semoventi. La soluzione epicicloidale qui rappresentata si fa preferire alle soluzioni con riduttori tradizionali in quanto migliorativa del 40-60% in termini di spazio e di peso.

Nei riduttori della "Serie S", che si sviluppano armonicamente su 8 grandezze, sono ottimizzate le prestazioni in termini di durata e di silenziosità. Con le sue numerose versioni in uscita, con le svariate possibilità in ingresso e con tutti gli accessori a corredo, la "Serie S" estende la possibilità di applicazione dei riduttori epicicloidali Brevini in tutti i settori industriali:

- mescolatori per ogni tipo di materiale
- estrusori
- nastri trasportatori di ogni tipo
- sollevamenti industriali e portuali
- trituratori e molini
- macchine per la lavorazione della lamiera e del tondino
- grandi impianti siderurgici
- impianti per la produzione di zucchero e di olio alimentare
- impianti per cave e miniere
- impianti di depurazione.

Le principali caratteristiche di questa nuova gamma Brevini Riduttori sono:

- N°9 grandezze armonicamente sviluppate, da 34.000 Nm a 530.000 Nm di coppia nominale
- Esecuzione coassiale fino a 4 stadi di riduzione
- Esecuzione ortogonale fino a 4 stadi di riduzione
- Versioni in uscita: femmina flangiata, femmina pendolare, albero maschio cilindrico e scanalato
- Versioni in ingresso con albero veloce, predisposizioni per motori elettrici e oleodinamici, possibilità di freni a dischi multipli
- Una vasta proposta di accessori in ingresso, in uscita e a corredo
- Possibili soluzioni integrali con riduttori di altra tecnologia.

I grandi investimenti dedicati, la scelta di materiali e processi altamente affidabili, i positivi risultati dei test finali "sul campo" sono la testimonianza sia dell'impegno di Brevini Riduttori che della grande qualità dei riduttori "Serie S". Impegno aziendale e qualità di prodotto che posizionano sul mercato i riduttori Brevini con un sempre migliore rapporto tra costo e prestazioni.

"S Series" epicyclic gear units are the innovative proposal Brevini Riduttori offers the market, improving the performance and application characteristics that determined the big success of the previous "PDL Series", in production for about 30 years.

The "S Series" is the optimum proposal for all applications requiring high torque with minimum dimensions, on fixed industrial equipment and also self-propelled machines. This epicyclic solution is preferable to solutions with traditional gear units as it offers an improvement of 40-60% in terms of space and weight.

The performance of "S Series" gear units, harmonically developed in 8 sizes, is optimized in terms of life and quietness. With its many output versions, numerous input possibilities and all the accessories supplied, the "S Series" extends the application possibilities of Brevini epicyclic gear units to all industrial sectors:

- mixers for any type of material
- extruders
- all types of conveyors belts
- industrial and port lifting equipment
- grinders and mills
- machines for working sheet and rod
- large iron-making plants
- sugar and food oil production plants
- plants for quarries and mines
- purification plants.

The main characteristics of this new Brevini Riduttori range are:

- 9 harmonically developed sizes, from 34,000 Nm to 530,000 Nm nominal torque
- In line execution up to 4 reduction stages
- Right-angle execution up to 4 reduction stages.
- Output versions: female splined, hollow cylindrical for shaft-mounting, male cylindrical and male splined shaft
- Input versions with male input shaft, arrangements for electric and hydraulic motors, possibility of multidisc brakes
- A wide range of input and output accessories supplied with unit
- Possibility of integral solutions with gear units having a different technology.

The large dedicated investments, the choice of highly reliable procedures and materials, and the positive results of "on-site" final testing, are proof of Brevini Riduttori's commitment and the outstanding quality of "S Series" gear units. Company commitment and product quality enable Brevini gear units to offer the market ever better performance value for money.



Die Planetengetriebe der "Serie S" sind das innovative Angebot, das Brevini Riduttori auf dem Markt vorstellt, mit verbesserten Leistungen und Anwendungseigenschaften gegenüber der vorangehenden erfolgreichen "Serie PDL", die seit ca. dreißig Jahren gebaut wird.

Die "Serie S" ist die optimale Lösung für alle Anwendungen, die ein hohes Drehmoment bei geringen Abmessungen sowohl auf ortsfesten Industrieanlagen wie auch auf selbstfahrenden Maschinen erfordern. Die hier vorgestellte Lösung mit Planetengetriebe ist den konventionellen Getrieben vorzuziehen, da sie unter dem Gesichtspunkt von Platzbedarf und Gewicht eine Verbesserung von 40-60% bedeutet.

Die Getriebe der "Serie S" mit 8 aufeinander abgestimmten Größen weisen optimale Leistungen hinsichtlich Lebensdauer und Laufzeit auf. Die "Serie S" weitet mit ihren zahlreichen Abtriebsausführungen, mit den unterschiedlichsten Antriebsmöglichkeiten und dem reichhaltigen Zubehör den Anwendungsbereich der Planetengetriebe Brevini auf alle Industriesektoren aus:

- Mischer für alle Materialarten
- Strangpressen
- Förderbänder jeder Art
- Industrielle und Hafenhubwerke
- Schredderanlagen und Mühlen
- Maschinen zur Blech- und Rundeisenverarbeitung
- Eisenhüttenwerke
- Zuckerfabriken und Speiseölmühlen
- Anlagen für Gruben und Bergbau
- Aufbereitungsanlagen.

Die wesentlichen Merkmale der neuen Serie Brevini Riduttori sind:

- N°9 aufeinander abgestimmte Größen für Nenndrehmomente von 34.000 Nm bis 530.000 Nm
- Koaxiale Ausführung mit bis zu 4 Untersetzungsstufen
- Winkelantrieb mit bis zu 4 Untersetzungsstufen
- Abtriebsausführungen: abtriebseitige Hohlwelle oder Ausführung ohne Passfeder, zylindrischer Wellenstumpf und Keilwelle
- Antriebsseitig mit Schnellgangwelle, Vorrüstung für Elektro- und Ölhdraulikmotoren, Möglichkeit für Lamellenbremsen
- Ein breit gefächertes Sortiment an antriebs- und abtriebsseitigem Zubehör und als Ausstattung
- Möglichkeit für integrierte Lösungen mit anderen Techniken.

Die beträchtlichen spezifischen Investitionen, die Materialauswahl, die äußerst zuverlässigen Produktionsprozesse und die positiven Ergebnisse der Abnahmetests "vor Ort" legen Zeugnis ab für das Engagement der Firma Brevini Riduttori und die erstklassige Qualität der "Serie S". Das Firmenengagement und die Güte der Produkte machen die Brevini - Getriebe zu einem Spitzenprodukt auf dem Markt mit ständig verbessertem Preis-Leistungs-Verhältnis.

Les réducteurs épicycloïdaux "Série S" représentent la solution novatrice que Brevini Riduttori apportent sur le marché, en améliorant davantage encore les performances et la facilité de montage qui ont été à l'origine du grand succès de la "Série PDL" précédente, en production depuis presque trente ans.

La "Série S" est parfaitement adaptée aux applications exigeant un couple de sortie élevé pour un encombrement réduit, qu'il s'agisse d'installations fixes industrielles ou d'engins automoteurs. La solution épicycloïdale mise ici en oeuvre est préférable aux solutions techniques traditionnelles, du fait de son important gain de poids et d'encombrement que l'on peut évaluer à hauteur de 40 % à 60 %.

Les réducteurs de la "Série S", qui se déclinent harmonieusement en 8 grandeurs, se distinguent tout particulièrement par leur durée de vie élevée et leur fonctionnement silencieux. Avec des nombreuses versions en sortie, avec ses multiples solutions en entrée et avec tous les accessoires fournis, la "Série S" étend le champ d'application des réducteurs épicycloïdaux Brevini à tous les secteurs industriels :

- *mélangeurs tous types de matériaux*
- *extrudeuses*
- *bandes transporteuses de tous types*
- *levage pour installations industrielles et portuaires*
- *broyeurs et moulins*
- *laminoirs (à acier)*
- *grandes installations sidérurgiques*
- *installations pour la production de sucre et d'huile alimentaire*
- *installations pour carrières et mines*
- *installations d'épuration*

Les caractéristiques principales de cette nouvelle gamme Brevini Riduttori sont:

- *9 grandeurs judicieusement étagées, de 34 000 Nm à 530 000 Nm de couple nominal*
- *Exécution coaxiale à 4 étages de réduction*
- *Exécution orthogonale jusqu'à 4 étages de réduction*
- *Versions en sortie : femelle flasquée, femelle flottante, arbre mâle cylindrique cannelé*
- *Versions en entrée avec arbre rapide, prédispositions pour moteurs électriques et hydrauliques, avec possibilité de freins à disques multiples*
- *Une large gamme d'accessoires fournis, en entrée, en sortie.*
- *Combinaisons possibles avec des réducteurs d'une autre technologie.*

Les importants investissements ciblés, le choix de matériaux et de procédés hautement fiables, les résultats positifs des essais finals "sur le terrain" sont autant de priorités qui témoignent de la volonté de développement de Brevini riduttori et de recherche de la qualité. Le résultat : les réducteurs "Série S". Un effort important de mobilisation sur cet objectif et une qualité du produit qui situent sur le marché les réducteurs Brevini avec un rapport coût/performance inégalable.

Los reductores epicicloidales de la "Serie S" son una innovadora propuesta de Brevini Riduttori que por sus características y sus prestaciones se prepara a conquistar el mercado como lo hiciera hace casi treinta años la famosa "Serie PDL".

La "Serie S" es la solución ideal para aquellas aplicaciones fijas o móviles en las que se necesita un par elevado pero no se dispone de mucho espacio. Un reductor epicicloidal es entre 40 y 60% más ligero y compacto que uno tradicional.

En los 8 tamaños que componen la gama se han optimizado la duración y la silenciosidad. Con las diferentes versiones de salidas, las entradas prácticamente infinitas y los numerosos accesorios, la "Serie S" se aplica a cualquier sector industrial:

- mezcladores de todo tipo de materiales
- extrusores
- todo tipo de cintas transportadoras
- grúas de puertos, fábricas, etc.
- trituradoras y molinos
- líneas para fabricar chapas y varillas
- grandes plantas siderúrgicas
- plantas de fabricación de azúcares y aceites comestibles
- cavas y minas
- depuradores.

He aquí las principales características de la nueva gama de Brevini Riduttori:

- 9 tamaños, de 34.000 Nm a 530.000 Nm de par nominal
- Hasta cuatro estadios de reducción en la ejecución coaxial
- Hasta cuatro estadios de reducción en la ejecución ortogonal
- Versiones salida: hembra embridada o pendular, eje del macho cilíndrico o acanalado
- Versiones entrada: eje rápido, acople de motores eléctricos y oleodinámicos, frenos de discos múltiples
- La gama más amplia de accesorios para entradas y salidas
- Soluciones integradas con reductores de alta tecnología.

Las cuantiosas inversiones en I+D, la selección de materiales y procesos fiables y los resultados de los numerosos test sobre el terreno son una prueba de nuestro compromiso y de la calidad intrínseca de nuestros productos. Este compromiso con la calidad se refleja en una relación precio/prestaciones inmejorable.

Os redutores epicicloidais da "Série S" representam a proposta inovadora que a Brevini Riduttori oferece ao mercado, melhorando o desempenho e as características aplicativas que determinaram o grande sucesso da "Série PDL" anterior, em produção por aproximadamente trinta anos.

A "Série S" representa a proposta ideal para todas as aplicações nas quais é necessário um elevado torque com espaços reduzidos, seja em sistemas fixos industriais, seja em máquinas móveis. A solução epicicloidal aqui representada é preferível às soluções com redutores tradicionais, porque melhoram em 40 a 60% as características de espaço e de peso.

Nos redutores da "Série S", que se desenvolvem harmonicamente em 8 tamanhos, foi otimizado o desempenho em termos de duração e de silêncio. Com as suas numerosas versões de saída, com as várias possibilidades de entrada e com todos os acessórios fornecidos, a "Série S" aumenta a possibilidade de aplicação dos redutores epicicloidais Brevini em todos os setores industriais:

- *misturadores para qualquer tipo de material*
- *extrusores*
- *fitas transportadoras de qualquer tipo*
- *elevadores industriais e portuários*
- *trituradores e moinhos*
- *máquinas para a transformação de chapas e vergalhões*
- *grandes instalações siderúrgicas*
- *sistemas para a produção de açúcar e óleo alimentício*
- *sistemas para pedreiras e minas*
- *sistemas de depuração.*

As principais características dessa nova linha da Brevini Riduttori são:

- *N°9 tamanhos harmonicamente desenvolvidos, de 34.000 Nm a 530.000 Nm de torque nominal*
- *Execução coaxial até 4 estágios de redução*
- *Execução ortogonal até 4 estágios de redução*
- *Versões de saída: fêmea flangeada, fêmea pendular, eixo macho cilíndrico e ranhurado*
- *Versões de entrada com eixo rápido, preconfigurações para motores elétricos e oleodinâmicos, possibilidade de freios a discos múltiplos*
- *Uma ampla oferta de acessórios de entrada, de saída e kits*
- *Possibilidade de soluções integradas com redutores de outras tecnologias.*

Os grandes investimentos dedicados, a escolha de materiais e processos altamente confiáveis, os resultados positivos dos testes finais "no campo" são o testemunho do empenho da Brevini Riduttori e da grande qualidade dos redutores da "Série S". Dedicção empresarial e qualidade de produto que posicionam os redutores Brevini no mercado com uma relação custo/benefício cada vez melhor.



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SERIE S: investimenti dedicati e tecnologia produttiva

S series: dedicated investments and manufacturing technology

I riduttori "serie S" sono prodotti in uno stabilimento nuovo, progettato per garantirne la massima qualità possibile e i migliori tempi di consegna. La produzione di tutti i componenti del riduttore epicicloidale (satelliti, portasatelliti, solari, corone, pignoni), dalle lavorazioni meccaniche alla spedizione, è concentrata all'interno di questa unità.

Gear units of the "S series" are made in a new factory, designed to guarantee maximum obtainable quality and the shortest possible delivery dates. The production of all the components making up the planetary gear unit (planet gears, planet carriers, sun and ring gears, pinions), from machining through to despatch, is sourced internally of this manufacturing facility.



Il processo di lavorazione della "serie S", che prevede tornitura, alesatura, dentatura, trattamento termico e rettifica interna e ad evolvente è svolto integralmente all'interno degli stabilimenti Brevini. La tornitura di satelliti e solari è eseguita su macchine Emag, la dentatura su Liebherr, la rettifica dei denti su Oerlikon Sigma Opal, mentre quella del foro su Meccanica Nova.

The manufacturing process for "S series" units - which includes turning and boring, gear cutting, heat treatment, and grinding of internal and involute profiles - is carried out entirely on the Brevini premises. In the case of planet and sun gears, the blanks are turned on Emag machines and the teeth cut on Liebherr; grinding is done on machines made by Oerlikon Sigma Opal (gear teeth), and Meccanica Nova (bore).



Tornitura e foratura delle corone sono eseguite su centro di tornitura e alesatura Mazak Integrex, mentre la dentatura su dentatrice interna Lorenz.

Le lavorazioni dei portasatelliti sono effettuate su centro di tornitura e alesatura Mazak Integrex, che comporta una drastica riduzione del numero delle fasi di lavorazione. I portasatelliti, le flange e i supporti in entrata compiono su questa macchina l'intero processo di lavorazione, passando dal prodotto grezzo al prodotto finito.

Nuove procedure e metodi razionalizzano le operazioni di assemblaggio: l'inserimento dei perni sul portasatellite è effettuato attraverso un sistema di induzione ad alta frequenza. In aggiunta ai controlli standard, viene eseguito il rodaggio, per la verifica delle tenute rotanti, della silenziosità e del rapporto di trasmissione; in questa fase viene collegato al riduttore un impianto di flussaggio che permette di abbattere la contaminazione particellare interna.



Dopo le operazioni di montaggio, i riduttori finiti sono verniciati su un impianto automatizzato Saima che lavora con composti ecologici e idrosolubili: vernici all'acqua.



Ring gears blanks are turned and bored on a Mazak Integrex machining centre, and the teeth cut on an internal Lorenz machine.

Planet carriers are also turned and bored on a Mazak Integrex centre, which enables a significant reduction in the number of machining steps. Planet carriers, flanges and input shaft are processed entirely on this machine, from blank to finished article.

Assembly operations are rationalized by the adoption of new procedures and methods: planet shafts are fitted to the carrier using a high frequency induction system. In addition to standard tests and inspections, the units are operated for a running-in period that serves to verify the efficiency of rotary seals, the noise levels and the transmission ratio; at this stage of the procedure, the unit is connected up to a fluid circuit so that contaminants can be flushed from the gear case.



Following assembly, the finished reduction units are painted using an automated Saima system designed to operate with eco-friendly and water-soluble compounds, which are solvent-free.

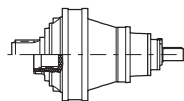
1. DESCRIZIONE RIDUTTORI

1. DESCRIPTION OF GEAR UNITS

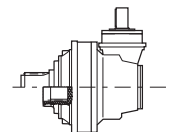
1. GETRIEBE- BESCHREIBUNG

SL

Versione
Version
Ausführung



SL



SC

3002

Grandezza
Size
Größe

3001, 3002, 3003, 3004
4001, 4002, 4003, 4004

3002, 3003, 3004
4002, 4003, 4004

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1 stadio stage Etappe
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2 stadi stages Etappen
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3 stadi stages Etappen
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4 stadi stages Etappen

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4 stadi stages Etappen

MP

Configurazione uscita
Output configuration
Abtriebsanordnung

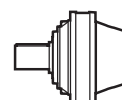
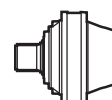
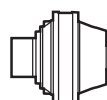
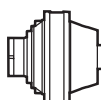
FE

FAR

FS

MP

MP1



15.96

Rapporto effettivo
Effective ratio
Effektives Übersetzungsverhältnis



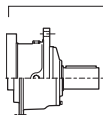
Vedere tabelle dati tecnici / See data sheet / Siehe Tabelle der technischen Daten (i_{eff})

i_{eff}	n_1 [rpm]									$T_{2\text{MAX}}$	P_1
	1500			1000			500				
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]		
SL3002											
15.96	94	21760	214	63	24574	161	31.3	30255	99	76000	38
17.86	84	22471	198	56	25378	149	28.0	31255	92	76000	38

S-65CR1

Configurazione entrata
Input configuration
Abtriebsanordnung

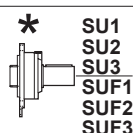
Supporti maschio in entrata
Cylindrical male input shaft
Antriebswellenstümpfe Daten



S-45CR1
S-46C1
S-65CR1
S-90CR1
ISL150
ISL250
ISL300
IS300
IS600
IS850

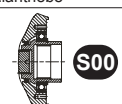


65.105
48.82
45.70



SU1
SU2
SU3
SUF1
SUF2
SUF3

Entrate universali
Universal inputs
Universalantriebe



Freni lamellari
Multidisc brakes
Lamellenbremsen



FL250
FL350
FL450
FL650
FL750
FL960



FL620.U
FL635.U

* Solo per entrata universale
Only for universal input
Nur für Universalantriebe

00

B3

Posizioni di montaggio
Mounting position
Einbaulage

B3 B3A V5B
V5 B3B V6B
V6 B3C
B3D

FR400

Accessori uscita
Output shaft accessories
Abtriebsseitiges Zubehör

Barra scanalata
Splined bar
Zugspindel

BS...



Rondella di fermo
Shaft cover
Gegenscheibe

RDF...



Flangia ruota
Driving flange
Radnabenflansch

FR...



Manicotto scanalato
Splined bush
Keilmuffe

MS...



Esempio di designazione
Model code example
Beispiel der Kennzeichnung

SL3002/MP/15.96/S-65CR1/B3/FR400

2. DESCRIZIONI TECNICHE

Rapporto di riduzione i_{eff}

Rappresenta la relazione fra la velocità in ingresso n_1 ed uscita del riduttore n_2 . La modularità della gamma proposta da Brevini Riduttori permette la disponibilità di altri rapporti oltre a quelli indicati: consultare Brevini Riduttori per la eventuale disponibilità di ulteriori rapporti.

Coppia in uscita T_2 [Nm]

Valore della coppia in uscita riduttore riferita ad una durata di 10.000 ore di funzionamento, calcolata secondo I.S.O. (D.P. 6336). Tale valore (fattore di applicazione uguale ad 1) è indicato sia per i riduttori con versione in linea che angolari in relazione alle diverse velocità in ingresso.

Coppia massima $T_{2\text{MAX}}$ [Nm]

Coppia massima d'uscita ammissibile, come punta o per brevi durate. Per azionamenti che comportano un elevato numero di avviamenti o inversioni, anche la coppia massima di impiego deve essere opportunamente limitata in relazione alla resistenza degli ingranaggi o degli alberi.

Coppia nominale T_N [Nm]

E' la coppia convenzionale che caratterizza la grandezza del riduttore. Trova corrispondenza nella coppia limite secondo I.S.O. (D.P. 6336) del rapporto più forte di ogni grandezza.

Potenza in uscita P_2 [kW]

Combinazione del valore di coppia relativo ad una durata di 10000 h alla relativa velocità in uscita riduttore. Per le versioni angolari i suddetti valori fanno riferimento ad una versione con ingresso universale. Nei casi in cui il valore della potenza nominale nell'applicazione considerata superi il valore della potenza termica del riduttore in oggetto, occorre prevedere un apposito circuito ausiliario di raffreddamento dell'olio.

Potenza termica P_T [kW]

Potenza che può essere trasmessa in continuo dal riduttore, in determinate condizioni di funzionamento, relativamente alle massime temperature ammissibili per il riduttore. Vedere il capitolo: Potenza termica.

Velocità in ingresso n_1 [rpm]

I valori di velocità in ingresso indicati nel catalogo sono tre per coprire la maggior parte delle applicazioni del settore industriale.

2. TECHNICAL DESCRIPTIONS

Reduction ratio i_{eff}

It represents the ratio between gear unit input and output speed. The modularity of the Brevini Riduttori range offers the availability of other ratios in addition to those given: consult Brevini Riduttori for the availability of further ratios.

Output torque T_2 [Nm]

Gear unit output torque referred to 10000 hours of operation, calculated according to I.S.O. (D.P. 6336).

This value (application factor equal to 1) is given for gear units with inline and right-angle versions according to the different input speeds.

Max. torque $T_{2\text{MAX}}$ [Nm]

Max. permissible output torque, as peak or for short periods.

For drives involving a high number of starts or reversals, also the max. operational torque must be opportunely limited according to the fatigue resistance of the gears or shafts.

Nominal torque T_N [Nm]

The conventional torque characterizing the size of the gear unit.

It corresponds to the limit torque according to I.S.O. (D.P. 6336) of the strongest ratio of each size.

Nominal power P_2 [kW]

A combination of the torque value relevant to a duration of 10000 h at the relative gear unit output speed.

For right-angle units the above values refer to a version with universal input. In those cases when the nominal power value in the application considered exceeds the relevant gear unit thermal rating, a special auxiliary oil cooling circuit must be provided.

Thermal rating P_T [kW]

The power that can be transmitted continuously by the gear unit, in given operating conditions, relevant to the max. permissible temperatures for the gear unit. See chapter: Thermal rating.

Input speed n_1 [rpm]

The catalogue gives three input speed values to cover the majority of applications in the industrial sector.

2. TECHNISCHE BESCHREIBUNGEN

Übersetzungsverhältnis i_{eff}

Stellt das Verhältnis zwischen Antriebsdrehzahl n_1 und Abtriebsdrehzahl n_2 dar. Das Baukastensystem der Brevini Riduttori Getriebe bietet neben den aufgeführten weitere Übersetzungsverhältnisse an: wenden Sie sich an Brevini Riduttori für Auskünfte über weitere verfügbare Übersetzungsverhältnisse.

Abtriebsdrehzahl T_2 [Nm]

Wert der Abtriebsdrehzahl des Getriebes bezogen auf eine Dauer von 10.000 Betriebsstunden, berechnet laut I.S.O. (D.P. 6336).

Dieser Wert (Anwendungsfaktor gleich 1) gilt sowohl für In-Line- wie auch für die Winkelgetriebe entsprechend den verschiedenen Antriebsdrehzahlen.

Maximales Drehmoment $T_{2\text{MAX}}$ [Nm]

Maximal zulässiges Abtriebsdrehmoment, sowohl als Spitze wie auch für kurze Dauer. Bei Antrieben mit einer hohen Anzahl von Starts oder Umsteuerungen muss auch das maximale Betriebsdrehmoment entsprechend der Ermüdungsbeständigkeit der Zahnräder oder Wellen begrenzt werden.

Nennndrehmoment T_N [Nm]

Das konventionelle Drehmoment, das die Getriebegröße bezeichnet. Es entspricht dem Grenzdrehmoment laut I.S.O. (D.P. 6336) des höchsten Drehmomentverhältnisses jeder Größe.

Abtriebsleistung P_2 [kW]

Kombination des Drehmomentwerts für eine Dauer von 10000 Stunden mit der Abtriebsdrehzahl des Getriebes. Bei Winkelgetrieben beziehen sich die Werte auf eine Ausführung mit Universalantrieb. Bei allen Fällen, in denen die Nennleistung bei der in Betracht gezogenen Anwendung den Wert der Wärmeleistung des Getriebes übertrifft, muss ein geeignetes zusätzliches Kühlsystem installiert werden.

Wärmeleistung P_T [kW]

Leistung, die kontinuierlich vom Getriebe unter bestimmten Betriebsbedingungen abgegeben werden kann in Bezug auf die für das Getriebe zulässigen Höchsttemperaturen. Siehe Kapitel: Wärmeleistung.

Antriebsdrehzahl n_1 [rpm]

Die drei im Katalog angegebenen Werte der Antriebsdrehzahlen decken den größten Teil der Anwendungen des Industriebereichs ab.

Fattore di applicazione K_A

Il fattore di applicazione viene definito dal tipo di motore primo e dal tipo di macchina azionata dal riduttore. Si tratta di un valore empirico stabilito dalle norme attraverso l'esperienza storica delle diverse applicazioni e tiene conto delle variazioni di carico, degli urti della trasmissione e della incertezza relative alla variazione dei parametri che concorrono alla trasmissione della potenza.

L'importanza della macchina azionata è fondamentale nella individuazione del fattore K_A in quanto i motori utilizzati in combinazione con i riduttori sono normalmente elettrici oppure idraulici e quindi classificati come motorizzazioni ad azionamento uniforme.

Deve essere moltiplicato per la coppia (o la potenza) nominale di funzionamento per ottenere la coppia (o la potenza) di riferimento da confrontare con il valore a catalogo.

Nel caso di motori primi diversi da quelli indicati o nel caso si debbano calcolare durate diverse dalle 10000 ore previste, preghiamo consultare il Servizio Tecnico Commerciale di Brevini Riduttori.

La tabella seguente riporta alcuni valori del fattore di applicazione.

Application factor K_A

The application factor is defined by the type of prime mover and the type of machine driven by the gear unit. This is an empirical value fixed by the standards through the historic experience of the various applications and takes into account the variations of load, transmission impacts and uncertainty relative to the variation of parameters involved in the transmission of power.

The importance of the machine driven is essential in identifying the K_A factor, since the motors used in combination with the gear units are normally electric or hydraulic and therefore classed as uniform drive motorizations.

It must be multiplied by the nominal operating torque (or power) in order to obtain the reference torque (or power) to be compared with the catalogue value.

With prime movers different from those indicated or in the event durations other than the foreseen 10000 hours are to be calculated, please consult the Brevini Riduttori technical commercial assistance service.

The following table gives several application factor values.

Anwendungsfaktor K_A

Der Anwendungsfaktor hängt vom Typ des Primärmotors und der Art der vom Getriebe angetriebenen Maschine ab. Es handelt sich um einen empirischen Wert, der auf den für die verschiedenen Anwendungen durch Erfahrung festgelegte Normen beruht und der die Laständerungen, die Übertragungswucht und die Ungewissheit der Parameteränderung bei der Leistungsübertragung einbezieht. Die angetriebene Maschine ist bei der Festlegung des Faktors K_A von grundlegender Bedeutung, da es sich bei den mit den Getrieben eingesetzten Motoren meist um Elektro- oder Hydraulikmotoren handelt, die als gleichförmige Antriebsmotoren klassifiziert sind.

Er muss mit dem Nennbetriebsdrehmoment (oder der Nennleistung) multipliziert werden, um das Bezugsdrehmoment (oder die Bezugsleistung) für den Vergleich mit dem Katalogwert zu erhalten. Bei anderen als den angegebenen Primärmotoren oder bei von 10000 Stunden abweichender Dauer bitten wir Sie, sich an den technischen Kundendienst von Brevini Riduttori zu wenden.

Die folgende Tabelle enthält einige Werte des Anwendungsfaktors.

MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K_A
Agitatori/Mescolatori Agitators/Mixer Rühr-/Mischwerke	
Sostanze liquide Pure liquids Flüssige Stoffe	1
Sostanze semi-liquide Liquid and solids Halbfüssige Stoffe	1.25
Liquido non omogeneo Liquid- variable density Nicht homogene Flüssigkeiten	1.25
Lavorazione pietra ed argilla Clay working machine Stein- und Tonverarbeitung	
Presse per mattoni Brick press Ziegelpressen	1.75
Macchina per mattonelle Briquette machine Maschinen zur Fliesenherstellung	1.75
Compattatori Compactors Müllverdichter	2
Convogliatori Conveyors-general purpose Förderer	

MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K_A
A vite Worm conveyor Schneckenförderer	1
Alimentati uniformemente Uniformly loaded or fed Gleichmäßige Beschickung	1
Per ciclo continuo Heavy duty Dauerbetrieb	
non uniformemente alimentati not uniform fed Ungleichmäßige Beschickung	1.25
con inversione del moto Reciprocating or shaker mit Bewegungsumsteuerung	1.75
Gru Cranes Kran	
Da porto Dry dock Hafenkran	
Sollevamento carico Main Hoist Lastenheben	2.5
Sollevamento ausiliario Auxiliary Hoist Hilfskran	2.5

MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K_A
Sollevamento braccio Boom Hoist Auslegerhub	2.5
Rotazione braccio Slewing Drive Auslegerdrehung	2.5
Traslazione gru Traction Drive Kranbewegung	3
Container Container Container	
Sollevamento container Main Hoist Container - Heben	3
Sollevamento braccio Boom Hoist Auslegerhub	2
Applicazione industriale Industrial Duty Industrieanwendung	
Sollevamento principale Main Haupthebezeuge	2.5
Sollevamento ausiliario Auxiliary Hilfshebezeuge	2.5

MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A	MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A	MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A
Bridge		Ciclo continuo- a vite		Lavorazione tronco	
Bridge	3	Continuous screw operation	1.75	Main log	1.75
Brückenkran		Kontinuierlicher Schneckenbetrieb		Verarbeitung von Baumstämmen	
Movimentazione carrello		Ciclo intermittente- a vite		Piallatrice	
Trolley Travel	3	Intermittent screw operation	1.75	Slab	1.75
Laufkatzen		Schnecken - Aussetzbetrieb		Hobelmaschine	
Trituratori		Alimentatori		Trasbordatore	
Crusher		Feeders		Transfer	1.25
Schredderanlagen		Beschickungseinrichtungen		Umlader	
Pietre e metalli		A piastre		Scortecciatrice	
Stone or ore	1.75	Apron	1.25	Debarking drums	1.75
Steine und Metall		Platten		Rindenschälmaschine	
Draghe		A nastro		Alimentazione piallatrice	
Dredges		Belt	1.25	Planer feed	1.25
Nassbagger		Band		Hobelmaschinen - Zuführer	
Avvolgicavo		A vite		Trasbordatore a catena	
Cable reel	1.25	Screw	1.25	Transfers -chain	1.5
Kabelaufwickler		Schnecken		Kettenumlader	
Convogliatore		Industria alimentare		Lavorazione metalli	
Conveyors	1.25	Food industry		Metal mills	
Förderer		Lebensmittelindustrie		Metallverarbeitung	
Testa portafresa		Lavorazione cereali		Ribaltatori	
Cutter head drives	2	Cereal cooker	1	Reversing	2
Fräskopf		Getreideverarbeitung		Kipper	
Setacci		mescolatori per pasta		Spingitore lingotti	
Screen drives	1.75	Dough mixer	1.25	Slab pushers	1.5
Siebe		Teigmischer		Barrenandrücker	
Convogliatore a tazze		Triturazione carne		Tranciatrici	
Stackers	1.25	Meat grinders	1.25	Shears	2
Eimerförderer		Fleischmühlen		Schneidpressen	
Verricelli di manovra		Sollevatori/Elevatori		Trafila	
Winches	1.25	Hoists		Wire drawing	1.25
Winden		Hebewerke		Drahtziehmaschine	
Elevatori		Ciclo continuo		Aspo	
Elevators		Heavy duty	1.75	Wire Winding machine	1.5
Hebewerke		Dauerbetrieb		Haspel	
A tazze		Ciclo intermittente		Lavorazione nastri	
Bucket	1.25	Medium duty	1.25	Metal strip processing machinery	
Becherwerke		Aussetzbetrieb		Bearbeitung von Metallbändern	
Scala mobile		Sollevamento cassonetto		Nastratrici	
Escalators	1	Skip hoist	1.25	Bridles 1.25	
Rolltreppe		Kippvorrichtungen		Bandwickler	
Estrusori		Macchine di lavaggio		Avvolgitrice. Svolgitrice	
Extruders		Laundry		Coilers & uncoilers	1
Strangpressen		Wäschereien		Aufwickler. Abwickler	
In generale		Bottali		Rifilatrice	
General	1.5	Tumblers	1.25	Edge trimmers	1.25
Allgemein		Tumbler		Beschneidemaschine	
Plastica		Lavatrice		Spianatrice	
Plastics		Washers	1.5	Flatteners	1.25
Kunststoff		Waschmaschinen		Planiermaschine	
A velocità variabile		Macchine per legno		Regolazione cilindri	
Variable speed drive	1.5	Lumber industry		Pinch rolls	1.25
Mit regelbarer Drehzahl		Holzbearbeitungsmaschinen		Andrückrollen	
A velocità fissa		Convogliatori		Trattamento rottami	
Fixed speed drive	1.75	Conveyors-burner	1.25	Scrap choppers	1.25
Mit fester Drehzahl		Förderer		Abfallschere	
Gomma		A ciclo continuo		Tranciatrici	
Rubber		Main or heavy duty	1.5	Shears	2
Gummi		Dauerbetrieb		Schneidpressen	



MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A	MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A	MACCHINA COMANDATA DRIVEN MACHINE ANGETRIEBENE MASCHINE	K _A
Tranciatrici a striscia Slitters Streifenscheren	1.25	Truccioli Chip Späne	1.5	Alimentatori sostanze chimiche Chemical feeders Chemikalien - Beschicker	1.25
Lavorazione cemento Mills. rotary type Zementverarbeitung		Rotativi Rotary Drehend	1.5	Schermi disidratatori Dewatering screens Entwässerungsfilter	1.5
Forno per cemento Cement Kilns Zementofen	1.5	Vibranti Vibrating Rüttler	2	Separatore parti pesanti Scum breakers Abscheider schwerer Partikel	1.5
Essicatoi Dryers & coolers Trockenofen	1.5	Size press Size press Size Press	1.25	Mescolatore Slow or rapid mixers Mischer	1.5
Mescolatori Mixer concrete Misch-/Knetmaschinen	1.25	Super calendar Super calender Super-Kalender	1.25	Collettore dei fanghi Sludge collectors Schlammssammler	1.25
Lavorazione carta Paper mills Papierherstellung		Ispestitrice (motore in a.c.) Thickener (AC motor) Eindickungsmaschine (GS-Motor)	1.5	Ispestitore Thickeners Eindicker	1.5
Agitatori. mescolatori Agitator (mixer) Rührwerke Mischer	1.5	Ispestitrice (motore in corrente cont.) Thickener (DC motor) Eindickungsmaschine (WS-Motor)	1.25	Filtri a vuoto Vacuum filters Vakuumfilter	1.5
Agitatori sostanze liquide Agitator for pure liquors Rührwerke für flüssige Stoffe	1.25	Lavatrice (motore in c.a.) Washer (AC motor) Waschmaschine (GS-Motor)	1.5	Schermi Screens Schirme	
Calandre Calender Kalender	1.25	Lavatrice (DC motore in corr. cont.) Washer (DC motor) Waschmaschine (WS-Motor)	1.25	Lavaggio ad aria Air washing Luftwaschen	1
Sminuzzatrice Chipper Brechanlage	2	Lavorazione plastica Plastic industry Kunststoffverarbeitung		Rotativi per ghiaia Rotary-stone or gravel Kiesmaschinen	1.25
Alimentatore sminuzzatrice Chip feeder Beschicker der Brechanlage	1.5	Mescolatore per lotti Batch mixers Chargenmischer	1.75	Lavorazione zucchero Sugar industry Zuckerindustrie	
Rulli di lucidatura Coating rolls Polierwalzen	1.25	Mescolatore a ciclo continuo Continuous mixers HD - Mischer	1.5	Affettatrice barbabietole Beet slicer Zuckerrübenschnitzelmaschine	2
Convogliatori Conveyor Förderer		Calandre Calenders Kalender	1.5	Frantoi per canna Cane knives Zuckerrohrmühle	1.5
Truciolli. corteccia Chip. bark. chemical Späne Rinde	1.25	Lavorazione gomma Rubber industry Gummiverarbeitung		Trituratori Crushers Zerkleinerer	1.5
Tronchi Log (including slab) Baumstämme	2	Mescolatore per lotti Batch mixers Chargenmischer	1.75	Macinatori Mills (low speed end) Mahlmaschinen	1.75
Essicatoi Dryers Trockenofen		Mescolatore a ciclo continuo Continuous mixers HD - Mischer	1.5	Lavorazione tessuti Textile industry Textilindustrie	
Tagliatrice Paper machine Schneidemaschine	1.25	Calandre Calenders Kalender	1.5	Impianti di dosatura batchers Dosieranlagen	1.25
Convogliatori Conveyor type Förderer	1.5	Riscaldamento sabbia Sand muller Formsandaufbereiter	1.25	Calandre calenders Kalender	1.25
Estrusori Extruder Strangpressen	1.5	Trattamento acque Sewage disposal equipment Wasseraufbereitung		Essicatoi Dryers Trockenofen	1.25
Vagli Screen Siebanlagen		Schermo a barre Bar screens Stabsiebrost	1.25		

Fattore Cs

Fattore che considera il numero di avviamenti nell'unità di tempo.

Cs factor

This factor considers the number of starts in the unit of time.

Faktor Cs

Dieser Faktor berücksichtigt die Anzahl der Starts pro Zeiteinheit.

	Avviamenti orari / Starts per hour / Starts pro Stunde			
	1-5	6-25	26-100	101-200
Cs	1	1.05	1.15	1.25

Temperatura [°C]

La temperatura di funzionamento ideale è compresa tra 50 °C e 70 °C. Per brevi periodi si possono raggiungere 80 °C. Il sistema migliore per tenere sotto controllo la temperatura è quello di ricorrere ad un sistema ausiliario di scambio termico. Per temperature ambiente molto basse, inferiori a -15 °C, o di funzionamento superiori a 80 °C, si impongono oli adeguati assieme a guarnizioni e materiali speciali che possono essere forniti a richiesta. E' comunque consigliabile consultare il Servizio Tecnico Commerciale Brevini. Vedere il Capitolo: Lubrificazione.

Temperature [°C]

The ideal operating temperature is between 50 °C and 70 °C. For short periods 80 °C can be reached. The best system for keeping the temperature under control is to use an auxiliary cooling system. For very low ambient temperatures, below -15 °C, or operating temperatures above 80 °C, the use of suitable oils together with special seals and materials (supplied by request) is required. In any case it is advisable to consult the Brevini technical commercial service. See chapter: Lubrication.

Temperatur [°C]

Die ideale Betriebstemperatur liegt im Bereich von 50 °C bis 70 °C. Für kurze Zeiten können 80 °C erreicht werden. Das einfachste System der Temperaturregelung ist die Installation eines zusätzlichen Kühlsystems. Bei sehr niedrigen Umgebungstemperaturen (unter -15 °C) oder bei Betriebstemperaturen über 80 °C sind Spezialschmieröle zusammen mit Spezialdichtungen und Werkstoffen einzusetzen, die auf Anfrage lieferbar sind. Sie sollten sich in solchen Fällen jedoch immer an den technischen Kundendienst Brevini wenden. Siehe Kapitel: Schmierung.

Carichi sugli alberi in uscita / entrata FR [N]

Per ogni grandezza di riduttore vengono riportati a catalogo i diagrammi dei carichi radiali FR ammessi sugli alberi in uscita riferiti a $n_2 \times h = 10^5$ dei cuscinetti. Per durate diverse, i carichi dovranno essere moltiplicati per il coefficiente C (rilevabile dal diagramma 2) il quale non deve eccedere il valore di 1.5 indipendentemente dalla durata.

Loads on output / input shafts FR [N]

The catalogue gives the diagrams of permissible FR radial loads on the output shafts referred $n_2 \times h = 10^5$ of bearings. For different durations, the loads must be multiplied by the coefficient C (obtained from diagram 2) which must not exceed the value of 1.5 regardless of the life.

Lasten auf den Abtriebs- / Antriebswellen FR [N]

Der Katalog enthält für jede Getriebegröße die Diagramme der zulässigen Radiallasten FR auf den Abtriebsachsen bezogen auf $n_2 \times h = 10^5$ der Lager. Bei unterschiedlicher Dauer sind die Lasten mit dem Koeffizienten C (der dem Diagramm 2 entnommen werden kann) zu multiplizieren, der jedoch unabhängig von der Dauer nicht den Wert 1.5 übersteigen darf.

Esempio / Exemple / Beispiel

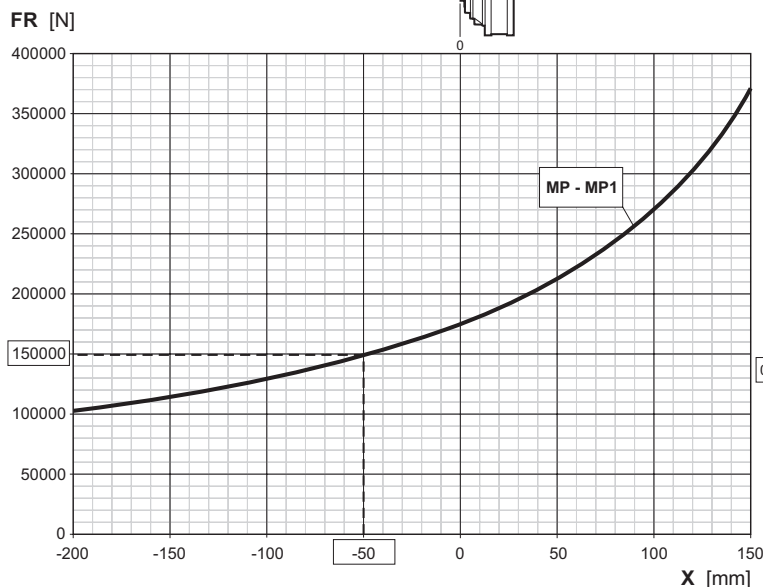


diagramma / diagram / Diagramm 1

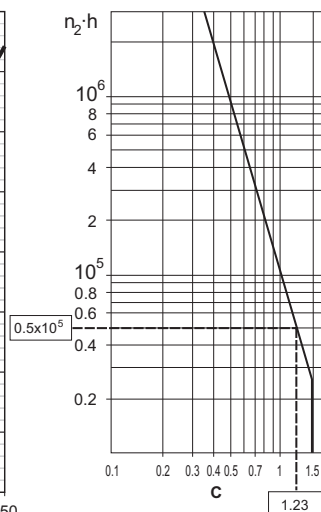


diagramme / diagrama / diagrama 2

Dati:

Riduttore SL3003 MP
Carico radiale applicato $F = 185000 \text{ N}$
Posizione del carico $X = -50 \text{ mm}$
Giri uscita $n_2 = 20 \text{ rpm}$

Con i quali calcoliamo:

Carico radiale ammissibile
 $FR = 150000 \text{ N}$ (vedi diagramma 1)

$$c = \frac{F}{FR} = 1.23$$

$$1.23 < 1.5 \text{ (C max)}$$

Durata cuscinetti $n_2 \cdot h = 0.5 \cdot 10^5$ (vedi diagramma 2)

$$h = \frac{0.5 \cdot 10^5}{20} = 2500 \text{ ore}$$

In presenza di carico assiale, si consiglia di contattare il Servizio Tecnico Commerciale Brevini.

Per gli alberi in ingresso vedere le rispettive tabelle.

I riduttori con uscita albero femmina (FE - FS) sono impiegati normalmente per la trasmissione di sola coppia e non sono adatti a sopportare nessun carico radiale.

Per eventuali informazioni consultare il Servizio Tecnico Commerciale Brevini.

Data:

Gear unit size SL3003 MP
Radial load $F = 185000 \text{ N}$
Load position $X = -50 \text{ mm}$
Output speed $n_2 = 20 \text{ rpm}$

To be calculated:

Radial load capacity
 $FR = 150000 \text{ N}$ (as per diagram 1)

$$c = \frac{F}{FR} = 1.23$$

$$1.23 < 1.5 \text{ (C max)}$$

Bearing life $n_2 \cdot h = 0.5 \cdot 10^5$ (as per diagram 2)

$$h = \frac{0.5 \cdot 10^5}{20} = 2500 \text{ hours}$$

In the event of axial load, it is advisable to contact the Brevini technical commercial service.

For input shafts, see the respective tables.

Gear units with female shaft output are used for the transmission of torque only, and are unsuitable for supporting any radial load.

For information contact the Brevini technical commercial service.

Daten:

Getriebe SL3003 MP
Angelegte Radiallast $F = 185000 \text{ N}$
Laststellung $X = -50 \text{ mm}$
Abtriebsdrehzahl $n_2 = 20 \text{ rpm}$

Berechnung:

Zulässige Radiallast
 $FR = 150000 \text{ N}$ (siehe Diagramm 1)

$$c = \frac{F}{FR} = 1.23$$

$$1.23 < 1.5 \text{ (C max)}$$

Lagerlebensdauer $n_2 \cdot h = 0.5 \cdot 10^5$ (siehe Diagramm 2)

$$h = \frac{0.5 \cdot 10^5}{20} = 2500 \text{ Stunden}$$

Sollten Axiallastenanliegen, wenden Sie sich bitte an den technischen Kundendienst Brevini.

Für Antriebswellen siehe die betreffenden Tabellen.

Die Getriebe mit Hohlwellenabtrieb (FE - FS) werden normalerweise nur für die Übertragung des Drehmoments eingesetzt und sind absolut ungeeignet für Radiallasten.

Wenden Sie sich bei Rückfragen an den technischen Kundendienst Brevini.

Potenza termica P_T [kW]

Le potenze termiche dei riduttori sono indicate nelle tabelle che riassumono le prestazioni tecniche dei vari stadi di riduzione.

I valori pubblicati fanno riferimento ad un impiego continuo del riduttore:

- Con lubrificazione a sbattimento
- Montato orizzontalmente
- Ad una velocità di ingresso riduttore di 1500 rpm
- Per una temperatura massima dell'olio di 80 °C (olio VG150)
- Ad una temperatura ambiente di 20 °C
- Nella condizione di impiego "ambiente grande".

Thermal rating P_T [kW]

The thermal ratings of the gear units are given in the tables summarizing the technical performance of the various reduction stages.

The values given refer to a continuous use of the gear unit:

- With splash lubrication
- Montato orizzontalmente
- At a gear unit input speed of 1500 rpm
- For a max. oil temperature of 80 °C (oil VG150)
- At an ambient temperature of 20 °C
- In the "large ambient" condition of use.

Wärmeleistung P_T [kW]

Die Wärmeleistungen der Getriebe sind in den Tabellen aufgeführt, die die technischen Leistungen der verschiedenen Übersetzungsstufen zusammenfassen.

Die angegebenen Daten beziehen sich auf einen kontinuierlichen Getriebeeinsatz:

- Spritzschmierung
- Horizontale Einbaulage
- Antriebsdrehzahl des Getriebes 1500 rpm
- Für eine Höchsttemperatur des Öls von 80 °C (olio VG150)
- Raumtemperatur von 20 °C
- Einsatzbedingung "großes Arbeitsumfeld".

Fattore K

Nel caso di cicli di lavoro che prevedono un impiego intermittente del riduttore e/ o alla presenza di una temperatura ambiente diversa da 20 °C, la potenza termica del riduttore può essere adeguata all'applicazione specifica tramite il fattore K.

K Factor

With work cycles requiring an intermittent use of the gear unit and/or the presence of an ambient temperature different from 20 °C, the gear unit thermal rating can be adjusted to the specific application by means of the K factor.

K - Faktor

Bei Arbeitszyklen des Getriebes mit Aussetzbetrieb und/oder bei Raumtemperaturen, die von 20 °C abweichen, kann die Wärmeleistung des Getriebes mithilfe des K - Faktors an die spezifische Anwendung angepasst werden

Ore di lavoro giornaliere Hours of work per day Arbeitsstunden pro Tag	Temperatura ambiente / Ambient temperature / Umgebungstemperatur [°C]				
	10°	20°	30°	40°	50°
≥10	1.15	1	0.85	0.7	0.6
8	1.25	1.1	1	0.85	0.7
6	1.4	1.25	1.1	1	0.85
4	1.6	1.4	1.25	1.1	1
2	1.8	1.6	1.4	1.25	1.1

Fattore S

Nel caso in cui la velocità in ingresso sia diversa da 1500 rpm l'adeguamento della potenza termica alla situazione specifica può avvenire tramite l'impiego del fattore S.

S Factor

If the input speed is different from 1500 rpm, the thermal rating can be adjusted to the specific situation by means of the S factor.

S - Faktor

Bei einer von 1500 U/min abweichenden Antriebsdrehzahl kann die Wärmeleistung der spezifischen Situation mithilfe des Faktors S angepasst werden

	n ₁ [min ⁻¹]			
	1750	1500	1000	500
S	0.94	1	1.05	1.1

Fattore R

Nel caso in cui il riduttore sia collocato in un ambiente ristretto oppure all'aperto, la potenza termica può essere modificata con l'ausilio del fattore R.

R Factor

If the gear unit is located in a confined space or outdoors, the thermal rating can be modified with the aid of the R factor.

R - Faktor

Falls das Getriebe in einer engen Umgebung oder im Freien aufgestellt ist, kann die Wärmeleistung mithilfe des Faktors R geändert werden

	Ambiente piccolo Small space Kleiner Raum	Ambiente grande Large space Großer Raum	All'aperto Outdoors Im Freien
R	0.70	1.00	1.35

Nel caso più generale la adeguata potenza termica del riduttore risulterà:

In the most general case the adequate thermal rating of the gear unit will be:

Ganz allgemein folgt die geeignete Wärmeleistung aus der folgenden Formel:

$$P_{T1} = P_T \cdot K \cdot S \cdot R$$

La potenza termica deve essere superiore alla potenza da trasmettere in tutte le condizioni del ciclo di impegno. Nel caso in cui la potenza termica del riduttore risulti inferiore alla potenza da trasmettere, anche solo in una condizione dell'eventuale ciclo di impiego occorre prevedere la presenza di un circuito ausiliario di raffreddamento. Per la selezione di tale circuiti, rimandiamo al Capitolo: Lubrificazione.

The thermal rating must be higher than the power to be transmitted in all operating cycle conditions. If the thermal rating of the gear unit is less than the power to be transmitted, even in just one condition of the possible operating cycle, an auxiliary cooling circuit must be provided. For selecting the circuits, see the Chapter: Lubrication.

Unter allen Bedingungen des Arbeitszyklus muss die Wärmeleistung höher sein als die zu übertragende Leistung. Falls die Wärmeleistung des Getriebes niedriger als die zu übertragende Leistung ist, selbst in einer einzigen Bedingung des Zyklus, muss ein zusätzliches Kühlsystem installiert werden. Für die Auswahl des Kühlsystems siehe Kapitel: Schmierung.

3. ESEMPIO SELEZIONE RIDUTTORE

Dati per la selezione

Motore primo:

Elettrico 22 kW a 1500 rpm

Macchina azionata:

nastro trasportatore non uniformemente alimentato

Servizio: continuo 10 ore al giorno

Numero di avviamenti all'ora: 1

Coppia richiesta di funzionamento: 100000 Nm

Coppia massima all'avviamento: 200000 Nm

Velocità di rotazione: 1.9 rpm

Vita richiesta per la trasmissione: 10000 h

Posizione di funzionamento: orizzontale

Temperatura ambiente 30 °C

Ambiente di lavoro grande

Selezione del riduttore

Rapporto richiesto: 1500 / 1.9 = 789

Fattore di applicazione K_A : 1.25

Coppia per la selezione del riduttore:

3. EXAMPLE SELECTING GEAR UNIT

Selection data

Prime mover:

Electric 22 kW a 1500 rpm

Machine driven:

conveyor belt not uniformly fed

Duty: continuous 10 hours a day

Number of starts per hour: 1

Required operating torque: 100000 Nm

Max. torque on star: 200000 Nm

Rotation speed: 1.9 rpm

Required transmission life: 10000 h

Operating position: orizzontale

Ambient temperature 30 °C

Working site large space

Gear unit selection

Ratio required: 1500 / 1.9 = 789

Application factor K_A : 1.25

Torque for gear unit selection:

$$T_2 = 100000 \cdot K_A \cdot C_S = 100000 \cdot 1.25 \cdot 1 = 125000 \text{ Nm}$$

Il riduttore da selezionare deve avere una $T_2 > T_{2R}$ coppia di riferimento per la selezione del riduttore.

Quindi andare a pag. 15 e dalla tabella selezionare nella colonna T_N il valore immediatamente più grande del valore ottenuto ($T_{2R}=125000$) e cioè 133000 Nm; sulla stessa riga nella colonna "Tipo" si leggerà che il riduttore idoneo sarà una grandezza S1200; dalla corrispondente pag. 56 nella tabella "Dati tecnici" selezionare il rapporto " i_{eff} " più vicino a quello richiesto di $i = 789$, che sarà $i_{eff} = 778.1$, quindi alla colonna corrispondente a 1500 rpm in corrispondenza del rapporto selezionato si leggerà un $T_2=133173$ Nm e di conseguenza il riduttore sarà in configurazione di "SL12004".

La coppia massima del riduttore SL12004

$$T_{2max} = 250000 \text{ Nm} > 200000 \text{ Nm}$$

La capacità termica del riduttore SL12004

$$P_T = 31 \text{ kW}$$

Causa la temperatura ambiente occorre considerare il coefficiente K per cui la capacità termica del riduttore diventa:

$$P_{T1} = 31 \cdot 0.85 = 26.35 \text{ kW}$$

Essendo la velocità in ingresso pari a 1500 rpm il fattore S = 1

Potenza richiesta dalla applicazione:
 $100000 \cdot 1.9 / 9550 = 20 \text{ kW}$

Essendo 26.35 kW > 20 kW non risulta essere necessario alcun sistema di raffreddamento ausiliario del riduttore.

The gear unit to be selected must have a $T_2 > T_{2R}$ reference torque for gear unit selection.

Then go to page 15, from the table choose in column T_N the value immediately higher than the value obtained ($T_{2R}=125000$), that is 133000 Nm; in the same line of the "Type" column you can read that the right gearbox is size S1200; from the corresponding page 56 in the table "Technical data" choose the " i_{eff} " value that is nearest to the requested $i = 789$: this i_{eff} will be 778.1. Then from the column corresponding to 1500 rpm, in correspondence to the selected ratio, you will read $T_2 = 133173$ Nm: therefore the correct gearbox will have a "SL12004" configuration.

Max. torque of gear unit SL12004

$$T_{2max} = 250000 \text{ Nm} > 200000 \text{ Nm}$$

Thermal capacity of gear unit SL12004

$$P_T = 31 \text{ kW}$$

Due to the ambient temperature the K factor must be considered, therefore the thermal capacity of the gear unit becomes:

$$P_{T1} = 31 \cdot 0.85 = 26.35 \text{ kW}$$

As the input speed is equal to 1500 rpm the S factor = 1

Power required by the application:
 $100000 \cdot 1.9 / 9550 = 20 \text{ kW}$

As 26.35 kW > 20 kW no gear unit auxiliary cooling system is required.

3. BEISPIEL EINER GETRIEBEAUSWAHL

Auswahldaten

Primärmotor:

Elektromotor 22 kW bei 1500 U/min

Angetriebene Maschine:

Transportband mit ungleichmäßiger Beschickung

Betrieb: kontinuierlich 10 Stunden täglich

Anzahl der Starts pro Stunde: 1

Erforderliches Betriebsdrehmoment: 100000 Nm

Maximales Anfahrtdrehmoment: 200000 Nm

Drehzahl: 1.9 rpm

Gewünschte Dauer: 10000 h

Einbaulage: horizontal

Umgebungstemperatur 30 °C

Arbeitsumfeld groß

Getriebeauswahl

Gewünschte Übersetzung: 1500 / 1.9 = 789

Anwendungsfaktor K_A : 1.25

Drehmoment für die Getriebeauswahl:

Das auszuwählende Getriebe muss ein Bezugsdrehmoment von $T_2 > T_{2R}$ für die Getriebeauswahl aufweisen.

Wählen Sie in der Tabelle auf Seite 15 in Spalte T_N den unmittelbar höheren Wert nach dem zuvor errechneten Wert ($T_{2R}=125000$), d.h. 133000 Nm; in derselben Zeile können Sie in der Spalte "Typ" ablesen, dass die geeignete Getriebegröße S1200 ist; wählen Sie jetzt auf Seite 56 in der Tabelle "Technische Daten" den Wert i_{eff} , der dem gewünschten von $i = 789$ am nächsten kommt, d.h. $i_{eff} = 778.1$; in der 1500 U/min entsprechenden Spalte können Sie auf Höhe des gewünschten Verhältnisses $T_2=133173$ Nm ablesen; die korrekte Getriebekonfiguration ist demnach "SL12004".

Das maximale Drehmoment des Getriebes SL12004

$$T_{2max} = 250000 \text{ Nm} > 200000 \text{ Nm}$$

Wärmeleistung des Getriebes SL12004

$$P_T = 31 \text{ kW}$$

Aufgrund der Raumtemperatur muss der K - Faktor berücksichtigt werden; die Wärmeleistung des Getriebes wird demnach:

$$P_{T1} = 31 \cdot 0.85 = 26.35 \text{ kW}$$

Da die Antriebsdrehzahl 1500 U/min beträgt, ist der Faktor S = 1

Für die Anwendung erforderliche Leistung:
 $100000 \cdot 1.9 / 9550 = 20 \text{ kW}$

Da 26.35 kW > 20 kW ist kein zusätzliches Kühlsystem des Getriebes erforderlich.

Applicazioni che:

- richiedono valori di durata diverse dalle 10000 ore
- presentano velocità in entrata diverse da quelle indicate a catalogo
- sono caratterizzate da cicli di lavoro con carichi e velocità variabili
- prevedono la presenza di carichi assiali sull'albero in ingresso / uscita del riduttore

devono essere analizzate specificatamente, tramite l'ausilio di programmi di calcolo dedicati, disponibili presso l'organizzazione di vendita di Brevini Riduttori.

Applications that:

- require duration values different from 10000 h
- have different input speeds from those given in the catalogue
- are characterized by work cycles with variable speeds and loads
- foresee the presence of axial loads on the gear unit input / output shaft

must be examined separately, with the aid of dedicated calculation programs, available from the Brevini Riduttori sales organization.

Anwendungen mit:

- von 10000 Betriebsstunden abweichenden Werten
- Antriebsdrehzahlen, die von den im Katalog aufgeführten Werten abweichen
- regelbaren Arbeitszyklen und Drehzahlen
- Axiallasten auf der Antriebs-/Abtriebswelle des Getriebes

müssen separat mithilfe von spezifischen Rechenprogrammen analysiert werden, die von der Vertriebsorganisation Brevini Riduttori bezogen werden können.

4. DATI TECNICI E TAVOLE
DIMENSIONALI

4. TECHNISCHE DATEN UND
MASSBILDER

4. DATOS TÉCNICOS Y DISEÑOS
DIMENSIONALES

4. TECHNICAL DATA AND DIMENSIONAL
DRAWINGS

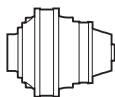
4. CARACTERISTIQUES TECHNIQUES ET
PLANCHES DES DIMENSIONS

D'ENCOMBREMENT

4. DADOS TÉCNICOS E TABELAS
DIMENSIONAIS

> Serie S / S Series / "Serie S" Série S / Serie S / Série S		Pag. Page Seite Page Pàg. Pàg.
Tipo / Type / Typ Type / Tipo / Tipo	T _N [Nm]	
S300	34000	32
S400	48000	42
S600	64000	52
S850	90000	62
S1200	133000	72
S1800	190000	78
S2500	260000	84
S3500	370000	90
S5000	530000	96

S300



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		
SL3001											
4.04				248	16362	424	124	20143	261	76000	
4.50				222	16609	387	111	20448	238	74000	
5.12		*		195	17067	349	98	21011	215	59000	
6.00				167	17528	306	83	20709	181	54000	
7.36				136	13696	195	68	14291	102	36000	
SL3002											
15.96	94	21760	214	63	24574	161	31.3	30255	99	76000	
17.86	84	22471	198	56	25378	149	28.0	31244	92	76000	
19.89	75	22969	181	50	25940	137	25.1	31224	82	74000	
22.77	66	23920	165	43.9	27014	124	22.0	31484	72	74000	
24.24	62	23751	154	41.3	26823	116	20.6	32776	71	76000	
27.00	56	25174	146	37.0	28430	110	18.5	31814	62	74000	38
30.72	48.8	23601	121	32.6	24195	82	16.3	25246	43.0	59000	
33.75	44.4	25273	118	29.6	25910	80	14.8	27035	41.9	58500	
38.40	39.1	23926	98	26.0	24529	67	13.0	25594	34.9	59000	
45.00	33.3	21906	76	22.2	22458	52	11.1	23433	27.3	54000	
SL3003											
55.85	26.9	31687	89	17.9	33061	62	9.0	34559	32.4	76000	
62.50	24.0	32472	82	16.0	33290	56	8.0	35151	29.4	76000	
71.55	21.0	32743	72	14.0	33568	49.1	7.0	35878	26.3	76000	
79.79	18.8	32963	65	12.5	33793	44.4	6.3	36474	23.9	76000	
93.57	16.0	33286	56	10.7	34125	38.2	5.3	37364	20.9	76000	
105.0	14.3	33522	50	9.5	34366	34.3	4.8	38019	19.0	76000	25
107.1	14.0	33564	49.2	9.3	34409	33.6	4.7	38137	18.6	76000	
122.7	12.2	33844	43.3	8.2	35051	29.9	4.1	38925	16.6	76000	
145.4	10.3	34199	36.9	6.9	35966	25.9	3.4	39942	14.4	76000	
162.0	9.3	33196	32.2	6.2	34812	22.5	3.1	38660	12.5	74000	
SL3004											
172.0	8.7	34697	31.7	5.8	36891	22.5	2.9	40969	12.5	76000	
195.5	7.7	35374	28.4	5.1	37611	20.1	2.6	41769	11.2	76000	
230.7	6.5	36271	24.7	4.3	38565	17.5	2.2	42828	9.7	76000	
261.3	5.7	36961	22.2	3.8	39299	15.7	1.9	42181	8.5	76000	
288.8	5.2	37524	20.4	3.5	39897	14.5	1.7	44308	8.0	76000	
330.0	4.5	38289	18.2	3.0	40711	12.9	1.5	45211	7.2	76000	
369.9	4.1	38956	16.5	2.7	41420	11.7	1.4	45999	6.5	76000	
414.6	3.6	39634	15.0	2.4	42141	10.6	1.2	46799	5.9	76000	
463.9	3.2	40314	13.7	2.2	42864	9.7	1.1	47602	5.4	76000	
518.7	2.9	41001	12.4	1.9	43594	8.8	0.96	48413	4.9	76000	
578.5	2.6	41682	11.3	1.7	44319	8.0	0.86	49218	4.5	76000	
647.3	2.3	42397	10.3	1.5	45079	7.3	0.77	50062	4.0	76000	17
741.0	2.0	43273	9.2	1.3	46010	6.5	0.67	51096	3.6	76000	
776.8	1.9	43583	8.8	1.3	46339	6.2	0.64	51462	3.5	76000	
889.2	1.7	44483	7.9	1.1	47297	5.6	0.56	52525	3.1	76000	
990.5	1.5	43056	6.8	1.0	45779	4.8	0.50	50839	2.7	74000	
1175	1.3	44180	5.9	0.85	46974	4.2	0.43	52166	2.3	74000	
1205	1.2	34413	4.5	0.83	36438	3.2	0.41	40465	1.8	59000	
1392	1.1	35170	4.0	0.72	37239	2.8	0.36	41356	1.6	59000	
1670	0.9	36154	3.4	0.60	38281	2.4	0.30	42512	1.3	59000	
1733	0.87	21604	2.0	0.58	22970	1.4	0.29	25509	0.8	36000	
1958	0.77	32996	2.6	0.51	35083	1.9	0.26	38961	1.0	54000	
2401	0.62	22696	1.5	0.42	24132	1.1	0.21	26799	0.6	36000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

10000
HOURS LIFE



S300

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SC3002

10.26	146	8369	128	97	9452	96	48.7	11637	59	50300	21
11.43	131	9322	128	87	10528	96	43.7	12962	59	56000	
13.01	115	10607	128	77	11979	96	38.4	14747	59	59000	
15.24	98	12430	128	66	14037	96	32.8	17282	59	54000	
17.52	86	15311	137	57	17291	103	28.5	21288	64	54000	
20.52	73	11963	92	48.7	13510	69	24.4	16633	42.4	57600	
21.49	70	14267	104	46.5	14627	71	23.3	15262	37.2	36000	

SC3003

43.88*	34.2	17101	61	22.8	19313	46.1	11.4	23777	28.4	76000	18
49.11*	30.5	19136	61	20.4	21611	46.1	10.2	26606	28.4	76000	
56.22*	26.7	21906	61	17.8	24740	46.1	8.9	30459	28.4	76000	
62.62*	24.0	24401	61	16.0	27557	46.1	8.0	33499	28.0	74000	
74.25*	20.2	28934	61	13.5	32442	45.8	6.7	34357	24.2	74000	
83.33*	18.0	24142	45.5	12.0	24750	31.1	6.0	25825	16.2	76000	
92.81*	16.2	26891	45.5	10.8	27568	31.1	5.4	28766	16.2	74000	
99.00*	15.2	22992	36.5	10.1	23571	24.9	5.1	24808	13.1	54000	
107.5	14.0	24154	35.3	9.3	26128	25.4	4.7	28192	13.7	59000	
126.0	11.9	23334	29.1	7.9	23922	19.9	4.0	25730	10.7	54000	
134.4	11.2	25838	30.2	7.4	26488	20.6	3.7	29160	11.4	59000	

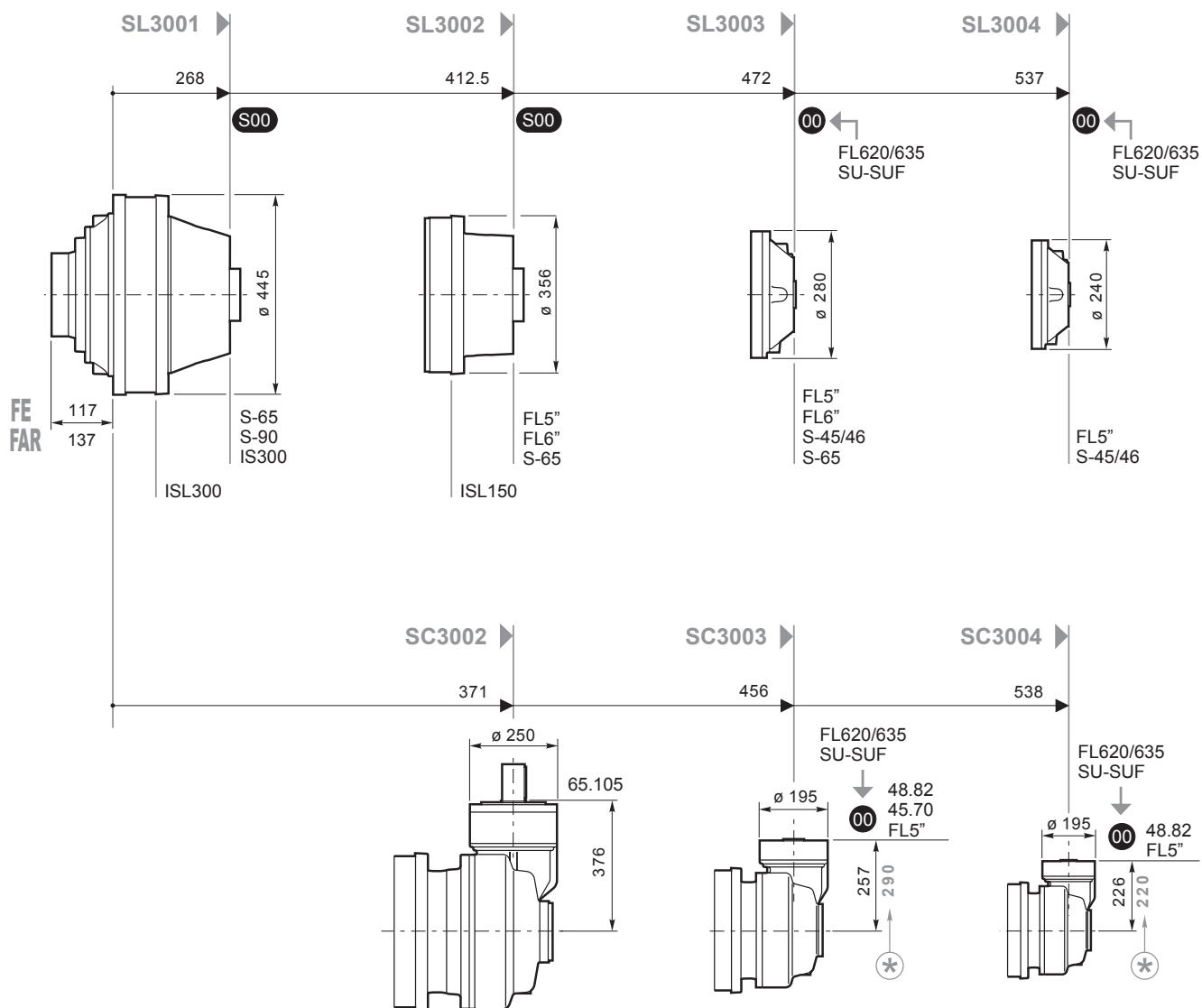
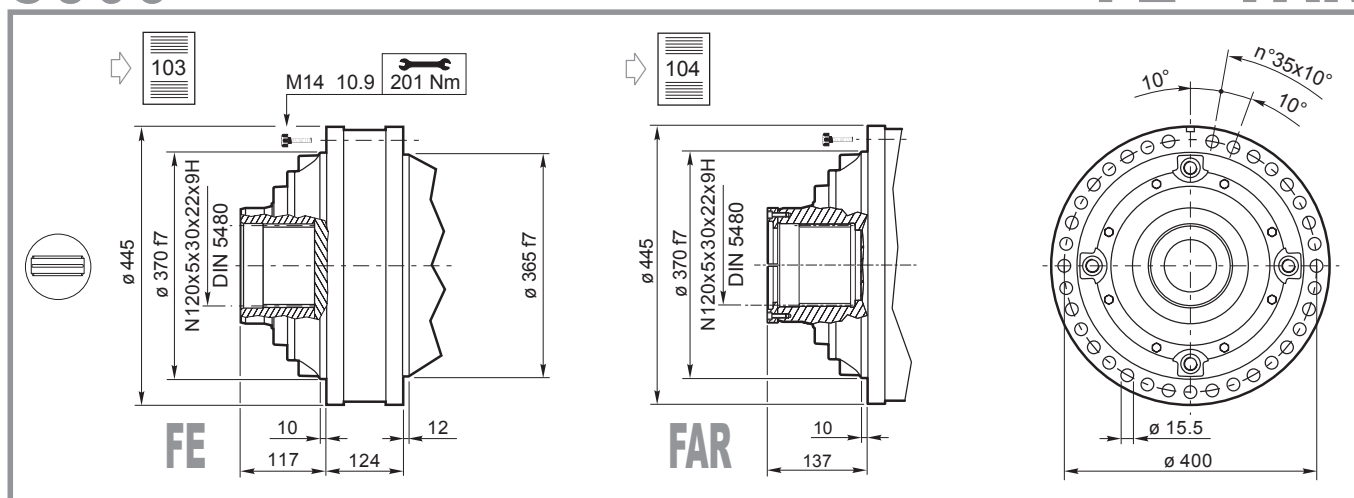
SC3004

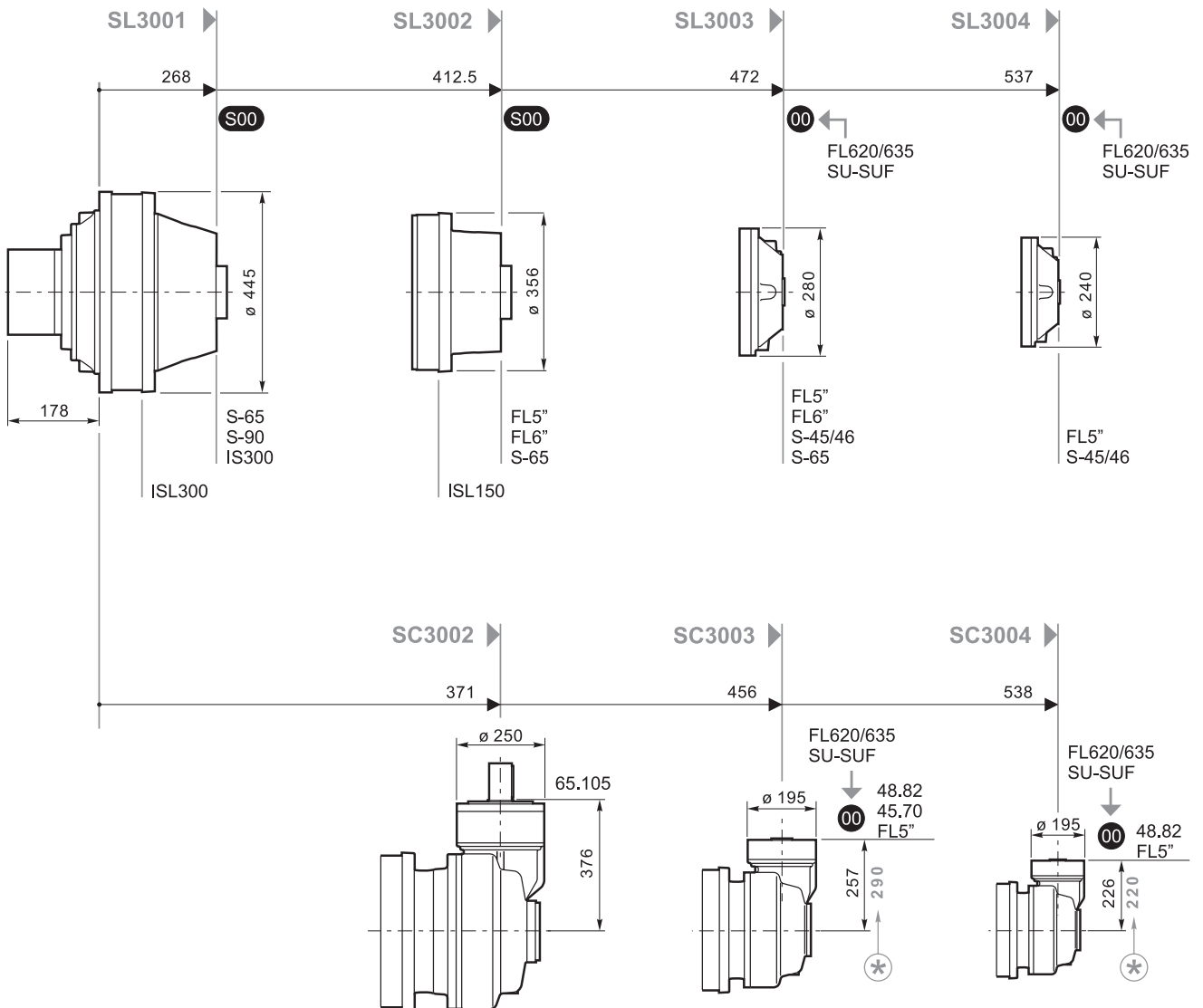
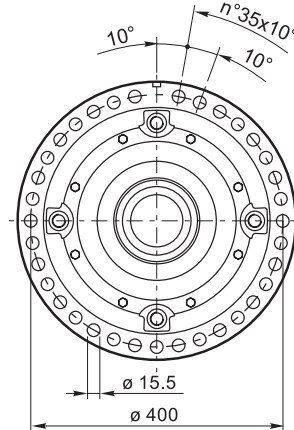
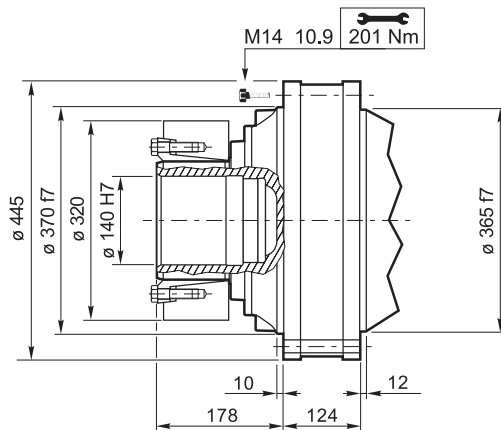
167.6	9.0	34559	32.4	6.0	36745	23.0	3.0	40806	12.8	76000	13
187.5	8.0	35151	29.4	5.3	37375	20.9	2.7	41506	11.6	76000	
207.3	7.2	35689	27.0	4.8	37947	19.2	2.4	42141	10.6	76000	
232.0	6.5	36301	24.6	4.3	38597	17.4	2.2	42864	9.7	76000	
254.5	5.9	36815	22.7	3.9	39143	16.1	2.0	42113	8.7	76000	
287.2	5.2	37494	20.5	3.5	39866	14.5	1.7	44272	8.1	76000	
321.4	4.7	38137	18.6	3.1	40549	13.2	1.6	45032	7.3	76000	
368.0	4.1	38925	16.6	2.7	41387	11.8	1.4	45962	6.5	76000	
412.5*	3.6	39604	15.1	2.4	42109	10.7	1.2	46763	5.9	76000	
472.2*	3.2	40422	13.4	2.1	42979	9.5	1.1	47730	5.3	76000	
495.0*	3.0	40711	12.9	2.0	43286	9.2	1.0	48071	5.1	76000	
566.7*	2.6	41552	11.5	1.8	44181	8.2	0.88	49064	4.5	76000	
631.2*	2.4	40219	10.0	1.6	42763	7.1	0.79	47489	3.9	74000	
718.1*	2.1	31820	7.0	1.4	33833	4.9	0.70	37573	2.7	59000	
768.2*	2.0	32146	6.6	1.3	34179	4.7	0.65	37799	2.6	59000	
887.0*	1.7	32853	5.8	1.1	34931	4.1	0.56	38631	2.3	59000	
1040*	1.4	29984	4.5	0.96	31880	3.2	0.48	35404	1.8	54000	

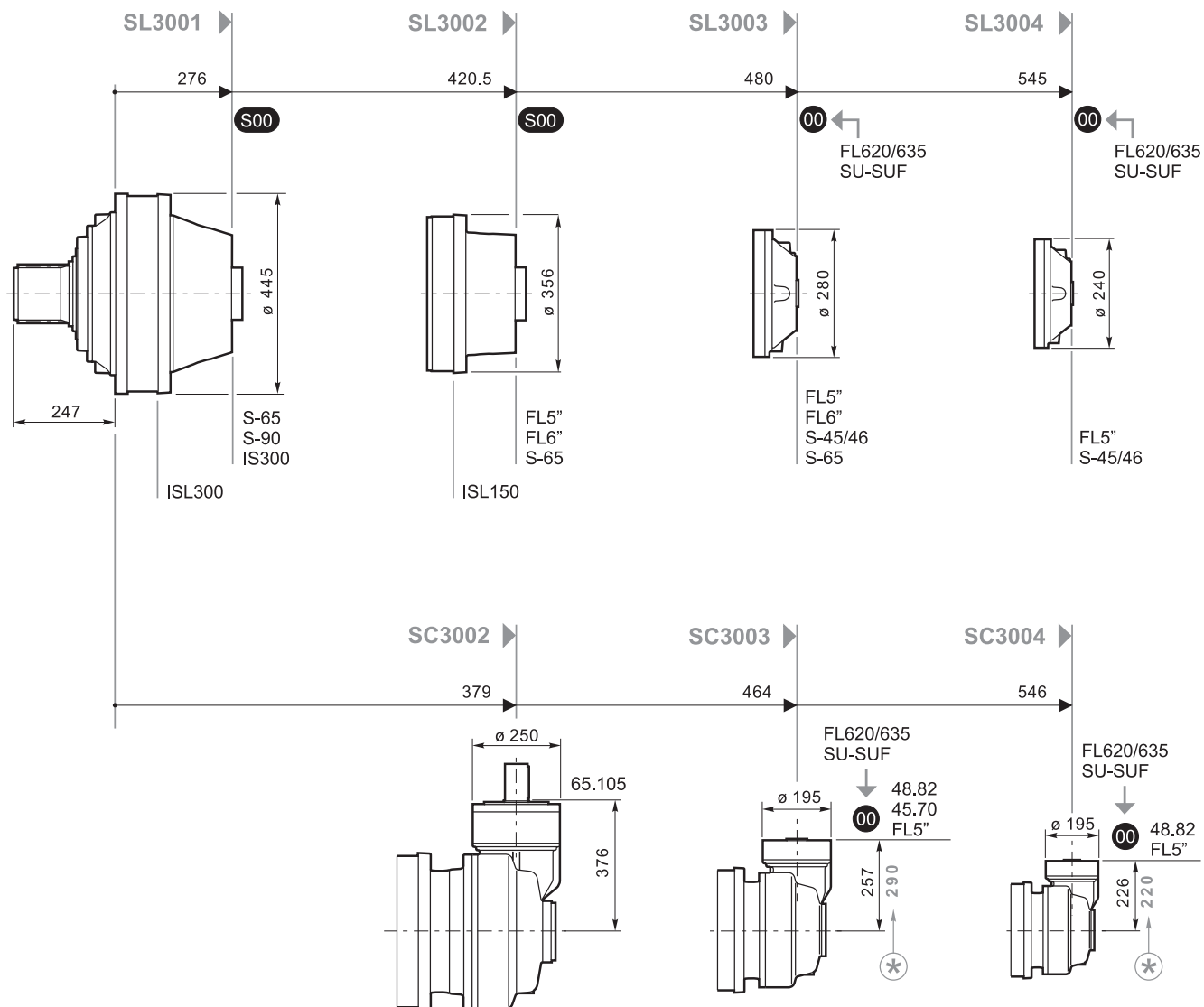
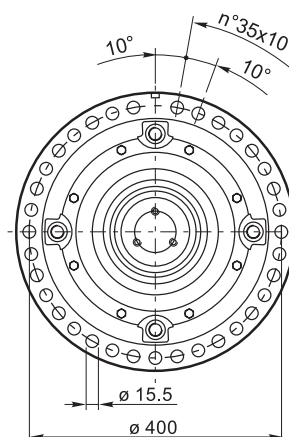
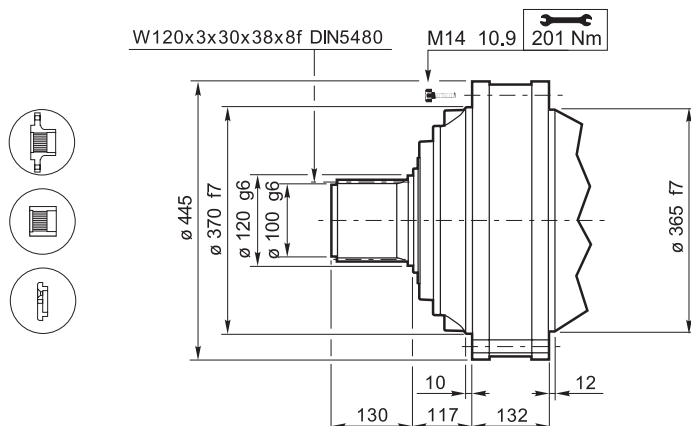


S300

FE - FAR



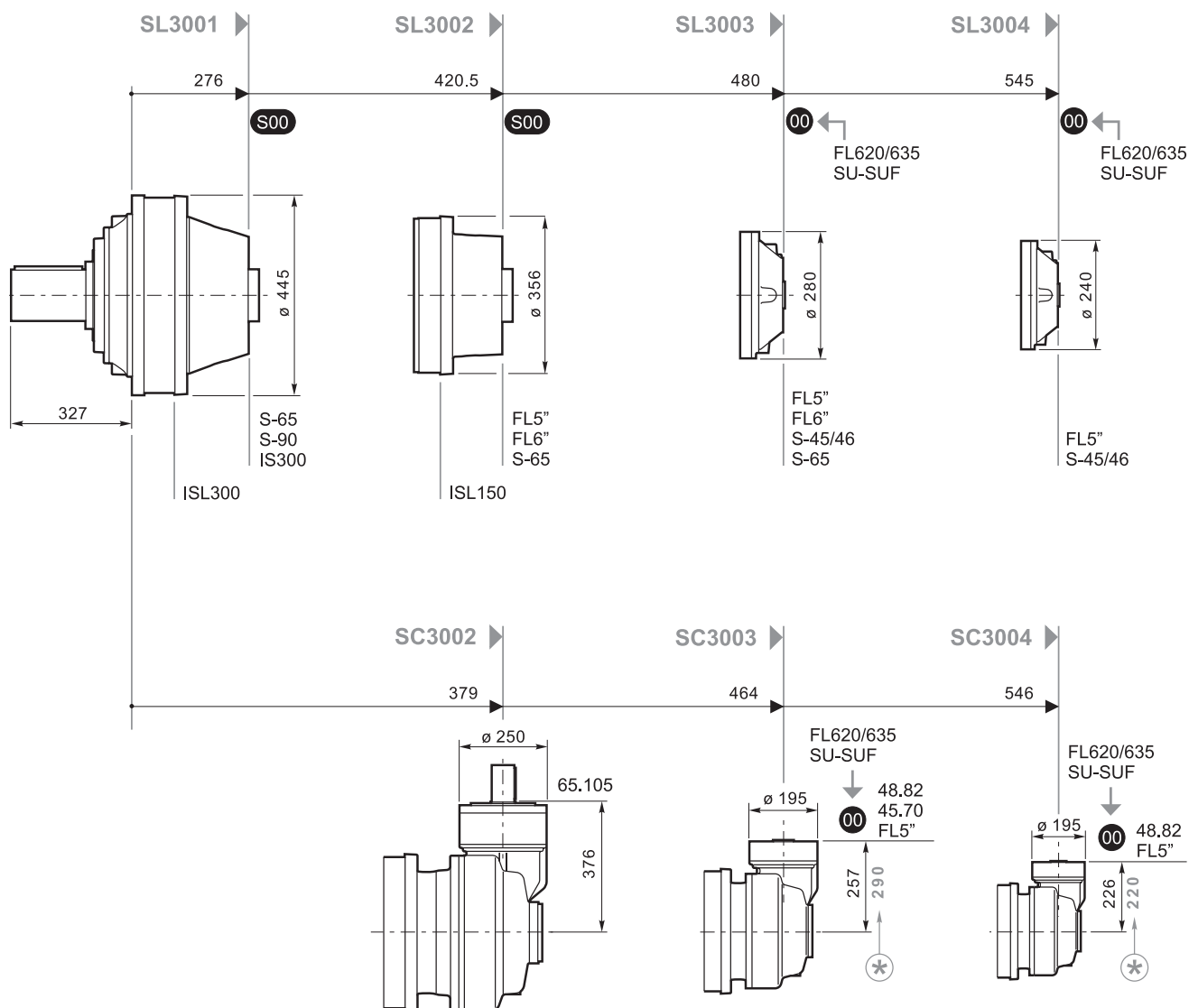
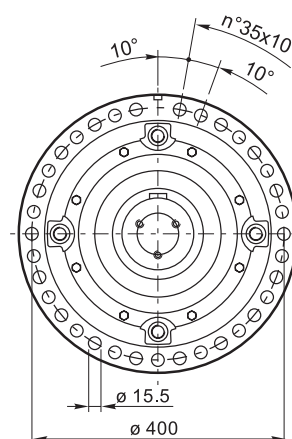
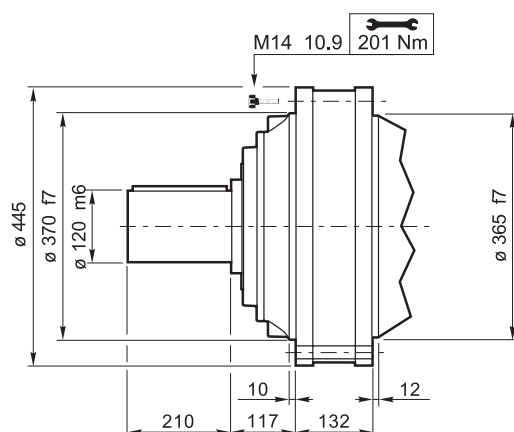




FL620/635 S-65
FL5" S-90
FL6" ISL150
SU-SUF ISL300
S-45/46 IS300

38



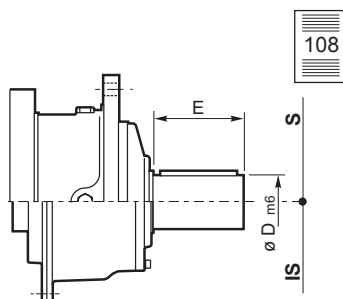


FL620/635 S-65
FL5" S-90
FL6" ISL150
SU-SUF ISL300
S-45/46 IS300

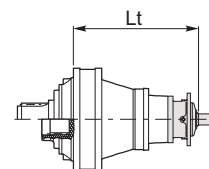


S300

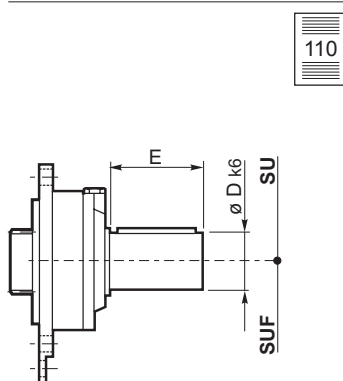
S-45/46, S-65, S-90, ISL150, ISL300, IS300



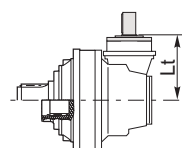
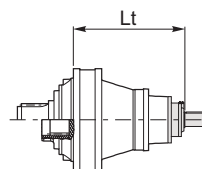
	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL150	ISL300	IS300
D m6	65	65	80	90	90	90	100
E	105	105	130	170	130	130	210
Lt (FE - FS)							
SL3001			460.5	466.5		325	446
SL3002			604.5		482.5		
SL3003	600	641	638.5				
SL3004	600	641					
Lt (MP - MP1)							
SL3001			468.5	474.5		333	454
SL3002			612.5		490.5		
SL3003	608	649	646.5				
SL3004	608	649					



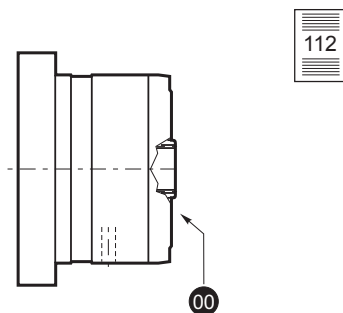
SU-SUF



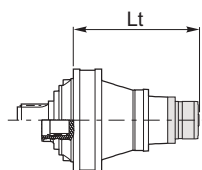
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
Lt (FE - FS)			
SL3003	533	533	533
SL3004	597	597	597
Lt (MP - MP1)			
SL3003	541	541	541
SL3004	605	605	605
Lt			
SC3003	317-350*	317-350*	317-350*
SC3004	286-280*	286-280*	286-280*



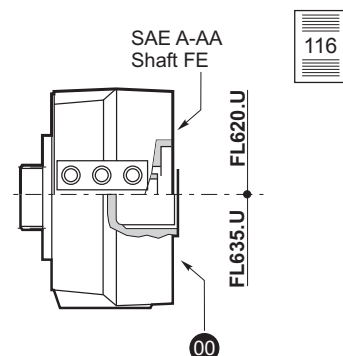
FL5", FL6"



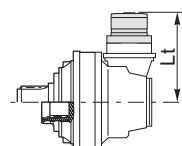
	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
Lt (FE - FS)						
SL3002	491.5	491.5	491.5	505	505	519
SL3003	577.5	577.5	577.5	591	591	605
SL3004	630.5	630.5	630.5	644	644	
Lt (MP - MP1)						
SL3002	499.5	499.5	499.5	513	513	527
SL3003	585.5	585.5	585.5	599	599	613
SL3004	638.5	638.5	638.5	652	652	
Lt						
SC3003	408.5-441.5*	408.5-441.5*	408.5-441.5*	422-455*	422-455*	
SC3004	377.5-280*	377.5-280*	377.5-280*	391-293.5*	391-293.5*	



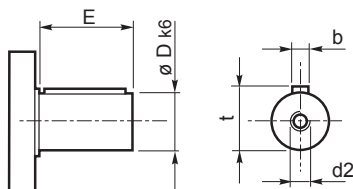
FL620/635



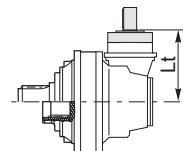
	FL620.U	FL635.U
Lt (FE - FS)		
SL3003	577.5	564.5
SL3004	641.5	628.5
Lt (MP - MP1)		
SL3003	585.5	572.5
SL3004	649.5	636.5
Lt		
SC3003	361.5-394.5	384.5-381.5
SC3004	330.5-324*	317.5-311.5*



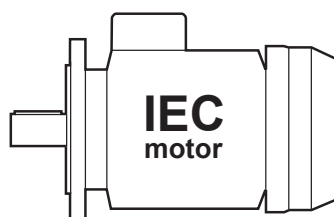
65.105, 48.82, 45.70



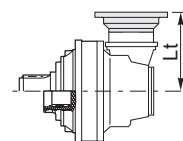
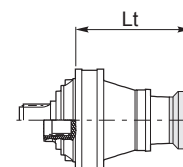
	65.105	48.82	45.70
Dk6	65 m6	48	45
E	105	82	70
b	18	14	14
t	69	51.5	48.5
d2	M20x42	M10x22	M10x22
	Lt		
SC3002	376		
SC3003		317	307
SC3004	966.5	280	



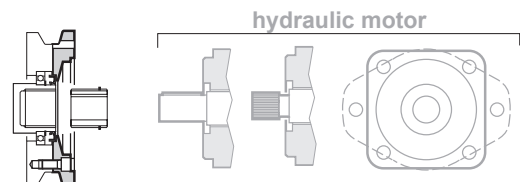
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt (FE - FS)						
SL3002						487.5	517.5
SL3003				579	579	609	609
SL3004	564	565	632	663	663	673	673
	Lt (MP - MP1)						
SL3002						495.5	525.5
SL3003				587	587	617	647
SL3004	572	573	640	671	671	681	711
	Lt						
SC3003			352-365*	383-416*	383-416*	394-427*	424-457*
SC3004	253-247*	254-248*	321-315*	352-346*	352-346*		

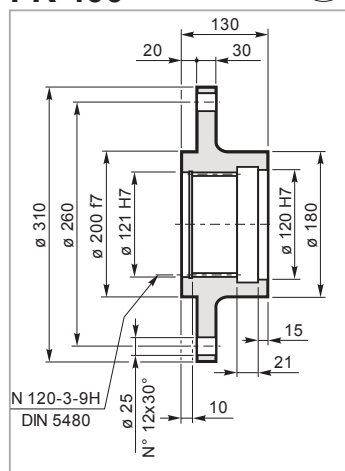


SAE J 744C, NEMA Adaptors



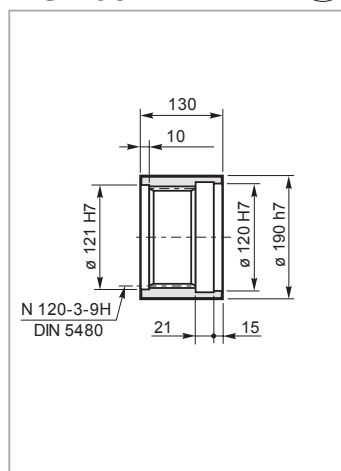
S300

FR 400



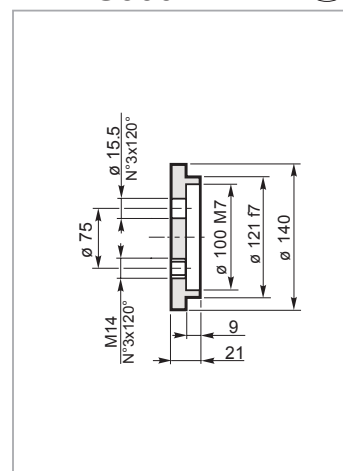
Mat. C40 UNI EN 10083
Code: 34705012800

MS 400



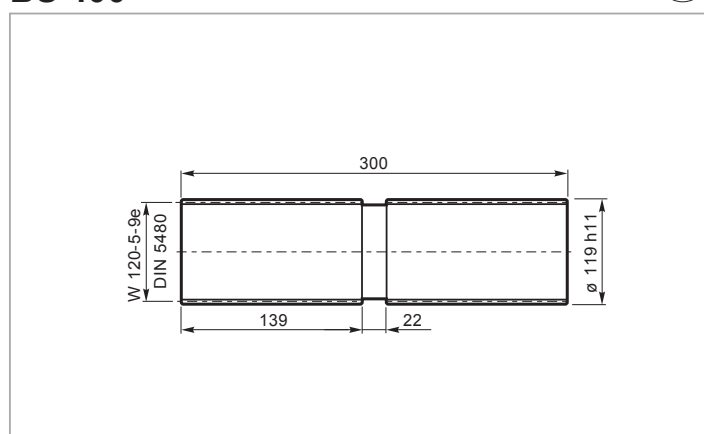
Mat. 39NiCrMo3 UNI EN 10083
Code: 39104730600

RDF S300



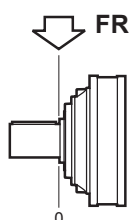
Mat. C40 UNI EN 10083
Code: 9001844

BS 400

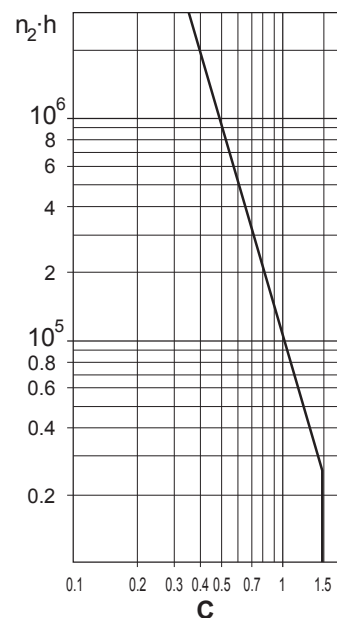
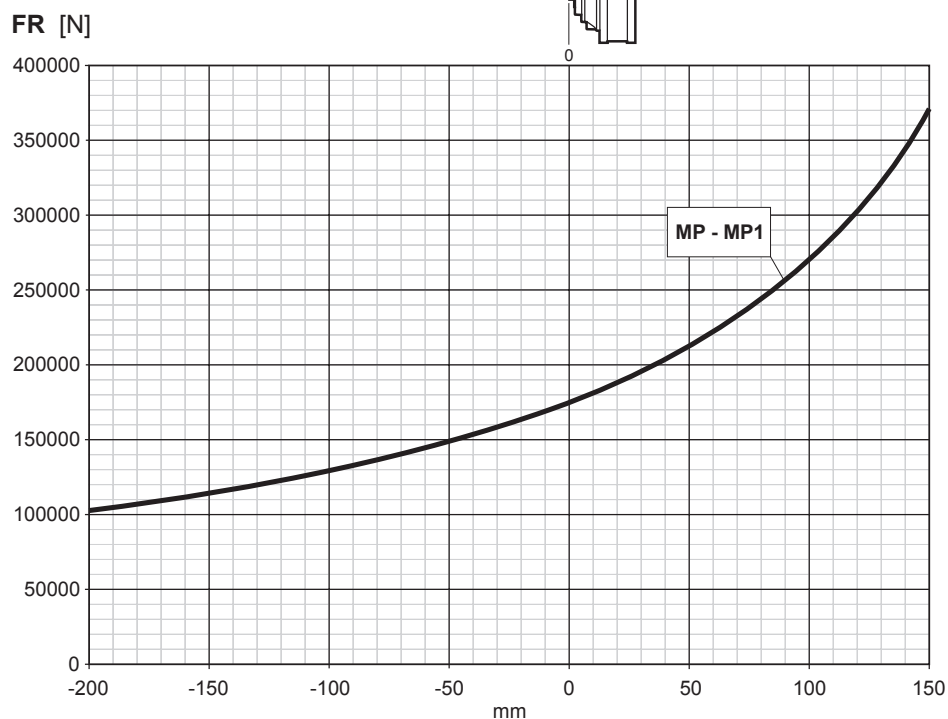


Mat. 39NiCrMo3 UNI EN 10083
Code: 39127430600

Carichi radiali sugli alberi uscita
Radial loads on output shafts
Radiallasten auf den Abtriebswellen



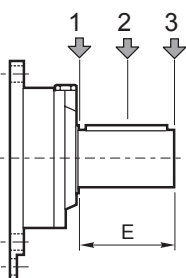
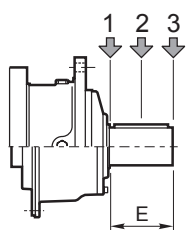
Charges radiales sur les arbres de sortie
Cargas sobre los ejes de salida
Cargas radiais nos eixos de saída



Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

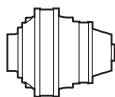
Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484

Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S400



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		
SL4001											
4.18				239	21853	547	120	26904	337	84000	
4.89	*			204	22482	481	102	27679	296	84000	
6.00				167	23371	408	83	27275	238	72000	
SL4002											
16.51	91	22514	214	61	25426	161	30.3	31303	99	84000	38
18.48	81	23250	198	54	26257	149	27.1	32327	92	84000	
19.32	78	26338	214	52	29745	161	25.9	36620	99	84000	
21.61	69	27199	198	46.3	30717	149	23.1	37779	92	84000	
24.74	61	27621	175	40.4	31194	132	20.2	38094	81	84000	
29.34	51	28748	154	34.1	32466	116	17.0	38494	69	84000	
30.36	49.4	28164	146	32.9	28873	100	16.5	30127	52	72000	
36.00	41.7	28460	124	27.8	29176	85	13.9	30444	44.3	72000	
45.00	33.3	28852	101	22.2	29579	69	11.1	30864	35.9	72000	
SL4003											
57.79	26.0	32785	89	17.3	37025	67	8.7	45584	41.3	84000	25
64.67	23.2	33856	82	15.5	38236	62	7.7	47074	38.1	84000	
67.60	22.2	37876	88	14.8	38830	60	7.4	40517	31.4	84000	
83.64	17.9	38374	72	12.0	39340	49.3	6.0	41049	25.7	84000	
93.59	16.0	38639	65	10.7	39613	44.3	5.3	41345	23.1	84000	
102.7	14.6	38860	59	9.7	39839	40.6	4.9	41930	21.4	84000	
110.9	13.5	39799	56	9.0	44946	42.5	4.5	51108	24.1	84000	
126.9	11.8	40416	50	7.9	45644	37.7	3.9	52164	21.5	84000	
146.7	10.2	39720	42.5	6.8	40720	29.1	3.4	44254	15.8	84000	
159.1	9.4	31176	30.8	6.3	31962	21.0	3.1	34209	11.3	72000	
SL4004											
178.0	8.4	45945	40.5	5.6	49438	29.1	2.8	54903	16.2	84000	17
202.3	7.4	47741	37.1	4.9	50403	26.1	2.5	55975	14.5	84000	
226.3	6.6	48269	33.5	4.4	51268	23.7	2.2	56935	13.2	84000	
259.1	5.8	49214	29.8	3.9	52327	21.1	1.9	56892	11.5	84000	
288.9	5.2	50033	27.2	3.5	53197	19.3	1.7	59078	10.7	84000	
330.4	4.5	51058	24.3	3.0	54287	17.2	1.5	60288	9.6	84000	
370.1	4.1	51943	22.0	2.7	55228	15.6	1.4	59162	8.4	84000	
419.0	3.6	52925	19.8	2.4	56273	14.1	1.2	62493	7.8	84000	
468.8	3.2	53833	18.0	2.1	57238	12.8	1.1	63565	7.1	84000	
524.1	2.9	54748	16.4	1.9	56932	11.4	1.0	62358	6.2	84000	
580.0	2.6	55594	15.1	1.7	59110	10.7	0.86	65644	5.9	84000	
656.1	2.3	56304	13.5	1.5	58092	9.3	0.76	64513	5.1	84000	
718.2	2.1	57421	12.6	1.4	61053	8.9	0.70	67801	4.9	84000	
803.7	1.9	58406	11.4	1.2	62100	8.1	0.62	68964	4.5	84000	
920.1	1.6	57503	9.8	1.1	61140	7.0	0.54	67898	3.9	84000	
1042	1.4	38498	5.8	1.0	40933	4.1	0.48	45288	2.3	72000	
1076	1.4	50664	7.4	0.93	53869	5.2	0.46	59823	2.9	84000	
1276	1.2	51987	6.4	0.78	55117	4.5	0.39	61209	2.5	84000	
1413	1.1	40310	4.5	0.71	42700	3.2	0.35	47420	1.8	72000	
1631	0.92	41197	4.0	0.61	43640	2.8	0.31	48464	1.6	72000	
1958	0.77	42349	3.4	0.51	44860	2.4	0.26	49819	1.3	72000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

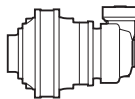
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

10000
HOURS LIFE



S400

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SC4002

12.21	123	10667	137	82	12046	103	41	14831	64	81893	21
14.28	105	12478	137	70	14092	103	35	17350	64	84000	
15.24	98	12430	128	66	14037	96	32.8	17282	59	72000	
17.52	86	15311	137	57	17291	103	28.5	21288	64	72000	
19.06	79	11112	92	52	12549	69	26.2	15450	42.4	53483	
22.30	67	12999	92	44.8	14681	69	22.4	18074	42.4	62567	
27.36	55	15950	92	36.5	18013	69	18.3	22177	42.4	72000	

SC4003

45.41*	33.0	17693	61	22.0	19982	46.1	11	24601	28.4	84000	18
50.81*	29.5	19799	61	19.7	22360	46.1	9.8	27528	28.4	84000	
58.17*	25.8	22666	61	17.2	25597	46.1	8.6	31514	28.4	84000	
65.18*	23.0	25397	61	15.3	28682	46.1	7.7	31573	25.4	72000	
72.93*	20.6	28419	61	13.7	30468	43.7	6.9	31791	22.8	72000	
80.69*	18.6	31441	61	12.4	35508	46.1	6.2	40959	26.6	84000	
86.21*	17.4	24979	45.5	11.6	25608	31.1	5.8	26720	16.2	84000	
99.00*	15.2	30282	48.0	10.1	31044	32.8	5.1	32393	17.1	72000	
109.7	13.7	24649	35.3	9.1	25990	24.8	4.6	27119	12.9	84000	
123.8*	12.1	30699	39.0	8.1	31472	26.6	4.0	32933	13.9	72000	
142.9	10.5	23075	25.4	7.0	26060	19.1	3.5	32083	11.8	84000	
157.5	9.5	31157	31.1	6.3	31941	21.2	3.2	34156	11.4	72000	

SC4004

173.4	8.7	39100	35.4	5.8	44157	26.7	2.9	54364	16.4	84000	13
194.0	7.7	43752	35.4	5.2	49411	26.7	2.6	55623	15.0	84000	
214.5	7.0	48110	35.2	4.7	50853	24.8	2.3	56474	13.8	84000	
247.7	6.1	48880	31.0	4.0	51971	22.0	2.0	57716	12.2	84000	
277.1	5.4	49718	28.2	3.6	52863	20.0	1.8	58706	11.1	84000	
317.3	4.7	50745	25.1	3.2	53955	17.8	1.6	57799	9.5	84000	
371.2	4.0	43128	18.3	2.7	45856	12.9	1.3	50925	7.2	84000	
380.7	3.9	52164	21.5	2.6	55464	15.3	1.3	59415	8.2	84000	
457.7*	3.3	44795	15.4	2.2	50590	11.6	1.1	62283	7.1	84000	
512.1*	2.9	50126	15.4	2.0	56609	11.6	0.98	64420	6.6	84000	
586.3*	2.6	55685	14.9	1.7	57325	10.2	0.85	63425	5.7	84000	
599.1*	2.5	46368	12.2	1.7	49301	8.6	0.83	54750	4.8	84000	
685.9*	2.2	47326	10.8	1.5	50319	7.7	0.73	55882	4.3	84000	
813.3*	1.8	48562	9.4	1.2	51633	6.6	0.61	57176	3.7	84000	
900.2*	1.7	37654	6.6	1.1	40036	4.7	0.56	44296	2.6	72000	
1040*	1.4	38483	5.8	0.96	40917	4.1	0.48	45271	2.3	72000	
1247*	1.2	39559	5.0	0.80	42061	3.5	0.40	46536	2.0	72000	



FE - FAR

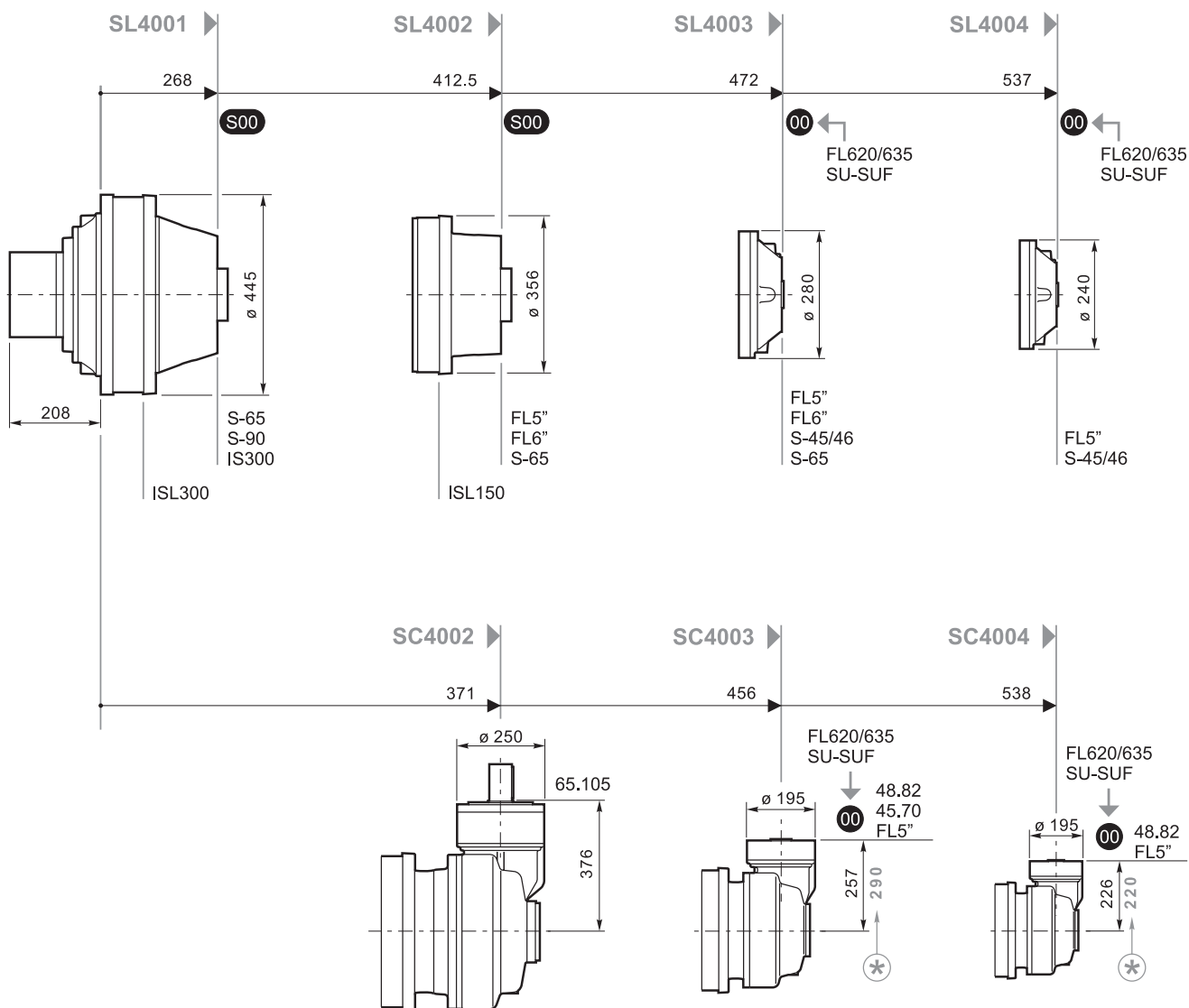
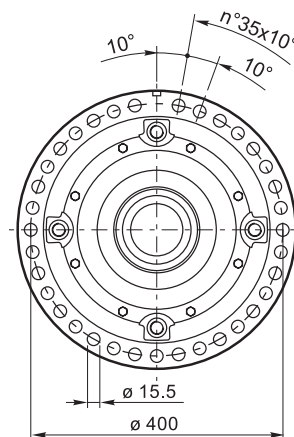
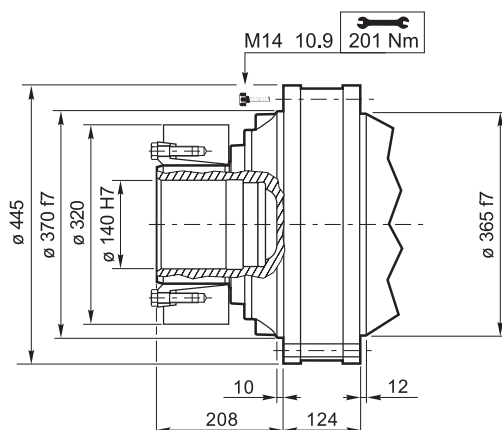


FL620/635	S-65
FL5"	S-90
FL6"	ISL150
SU-SUF	ISL300
S-45/46	IS300



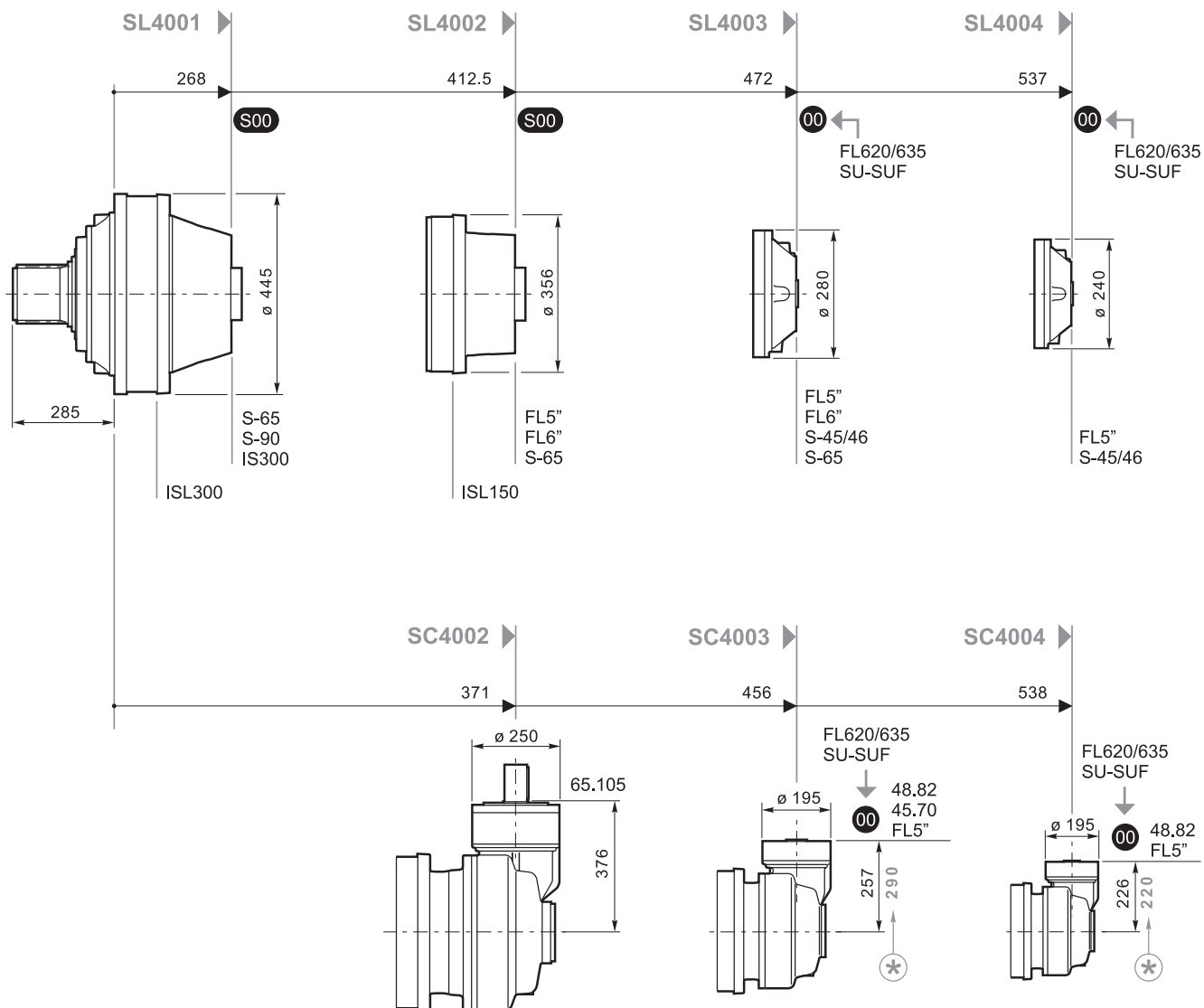
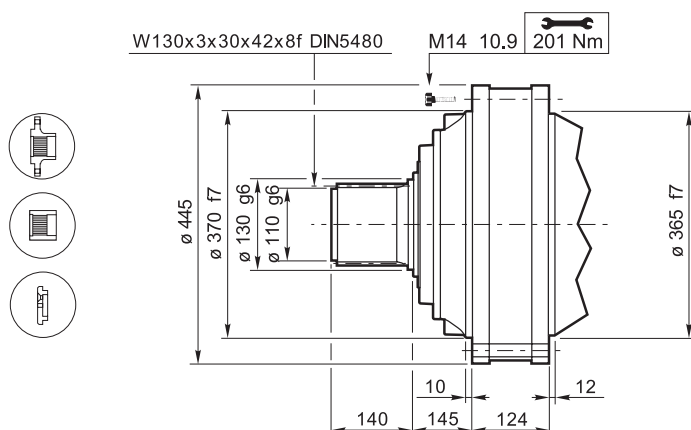
65.105
48.82
45.70





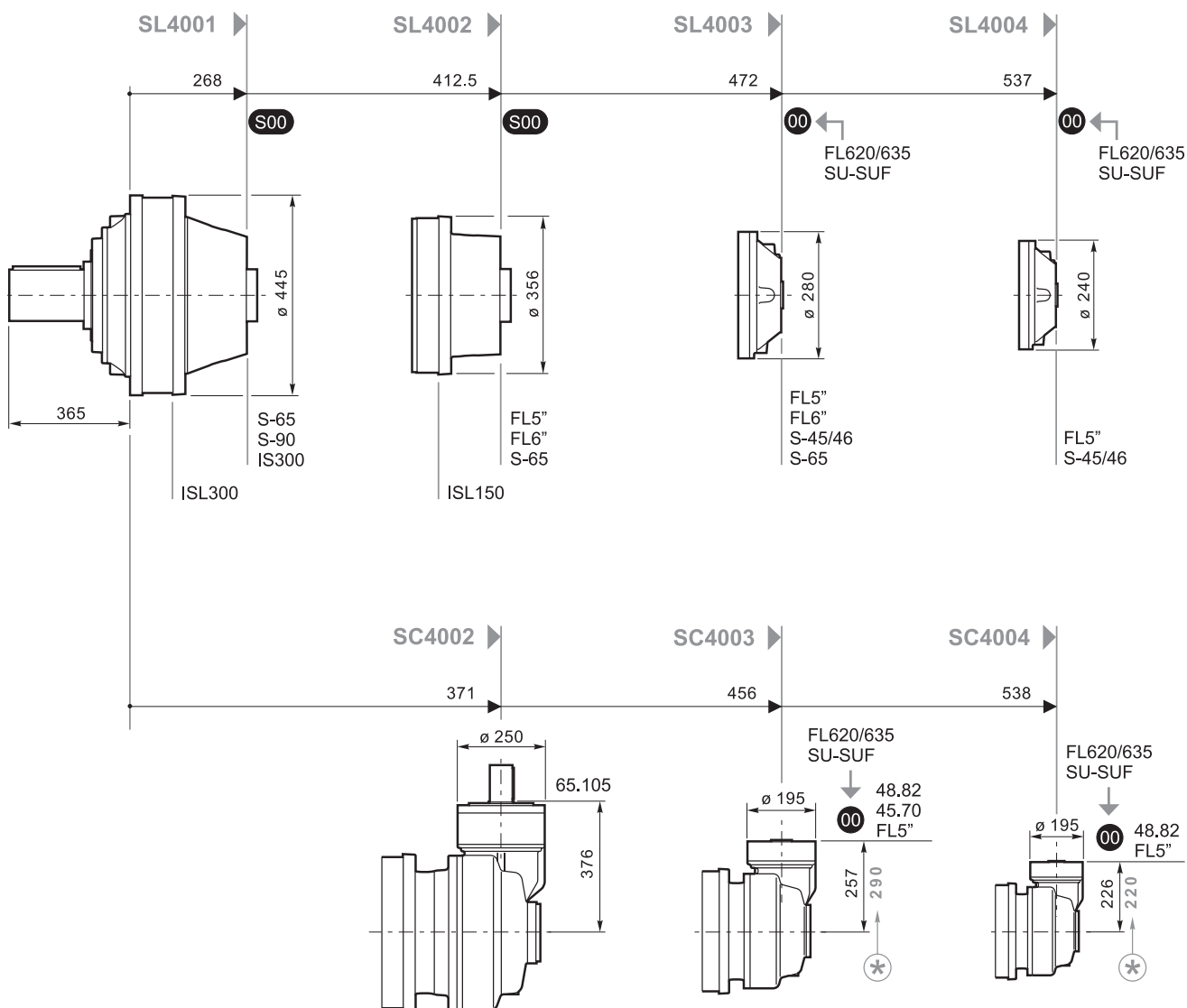
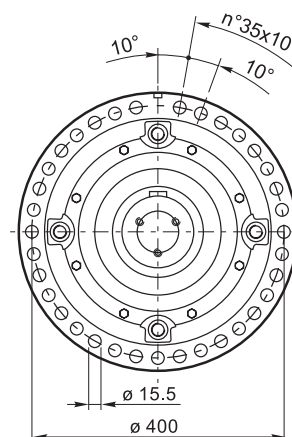
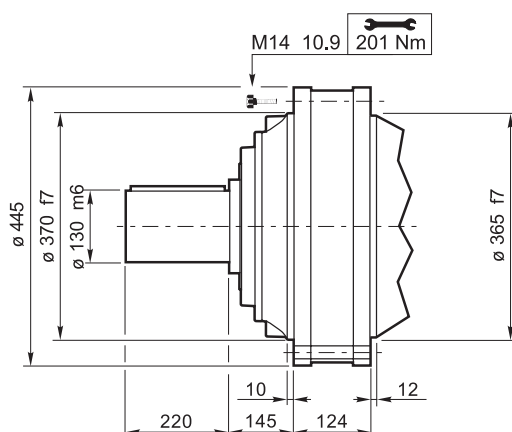
FL620/635 S-65
FL5" S-90
FL6" ISL150
SU-SUF ISL300
S-45/46 IS300





FL620/635 S-65
FL5" S-90
FL6" ISL150
SU-SUF ISL300
S-45/46 IS300





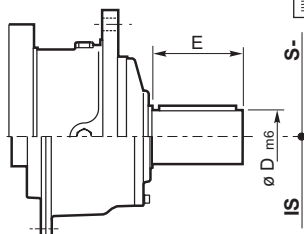
FL620/635 S-65
FL5" S-90
FL6" ISL150
SU-SUF ISL300
S-45/46 IS300



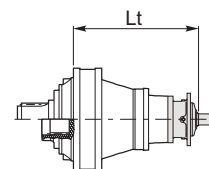
S400

S-45/46, S-65, S-90, ISL150, ISL300, IS300

108

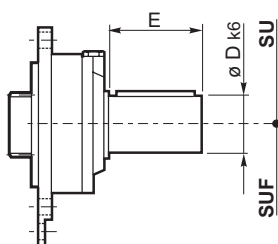


	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL150	ISL300	IS300
D m6	65	65	80	90	90	90	100
E	105	105	130	170	130	130	210
	Lt						
SL4001			460.5	466.5		325	446
SL4002			604.5		482.5		
SL4003	600	641	638.5				
SL4004	600	641					

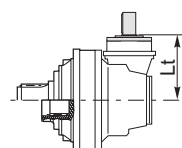
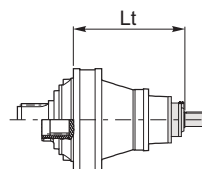


SU-SUF

110



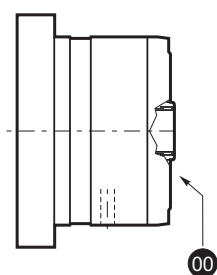
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
	Lt		
SL4003	533	533	533
SL4004	597	597	597
SC4003	317-350*	317-350*	317-350*
SC4004	286-280*	286-280*	286-280*



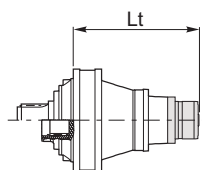
* 43

FL5", FL6"

112

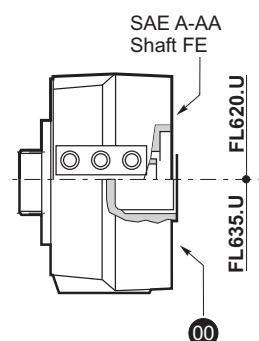


	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL4002	491.5	491.5	491.5	505	505	519
SL4003	577.5	577.5	577.5	591	591	605
SL4004	630.5	630.5	630.5	644	644	
SC4003	408.5-441.5*	408.5-441.5*	408.5-441.5*	422-455*	422-455*	
SC4004	377.5-280*	377.5-280*	377.5-280*	391-293.5*	391-293.5*	



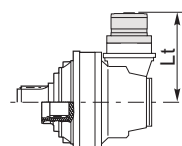
FL620/635

116

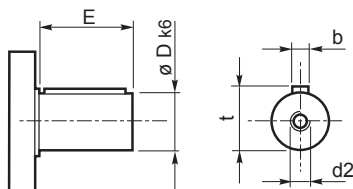


	FL620.U	FL635.U
	Lt	
SL4003	577.5	564.5
SL4004	641.5	628.5
SC4003	361.5-394.5	384.5-381.5
SC4004	330.5-324*	317.5-311.5*

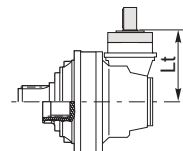
* 43



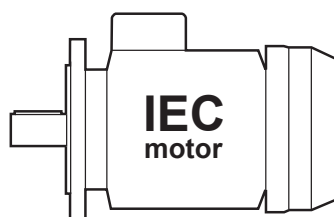
65.105, 48.82, 45.70



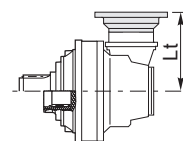
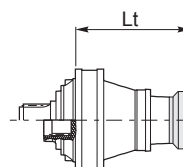
	65.105	48.82	45.70
Dk6	65 m6	48	45
E	105	82	70
b	18	14	14
t	69	51.5	48.5
d2	M20x42	M10x22	M10x22
	Lt		
SC4002	376		
SC4003		317	307
SC4004		280	



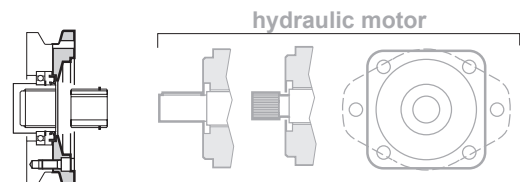
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt (FE - FS)						
SL4003				579	579	609	609
SL4004	564	565	632	663	663	673	673
SC4003				383-416*	383-416*	394-427*	424-457*
SC4004		254-248*	321-315*	352-346*	352-346*	363-357*	

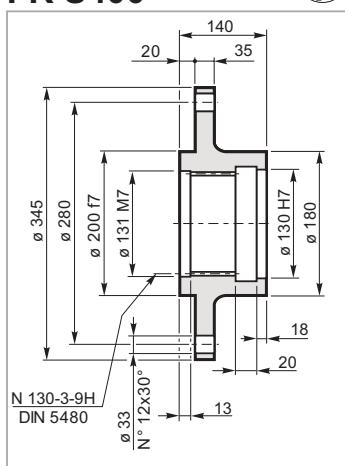


SAE J 744C, NEMA Flange



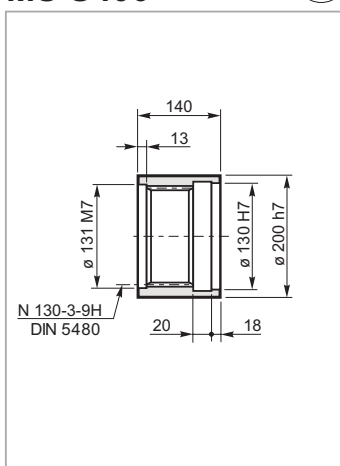
S400

FR S400



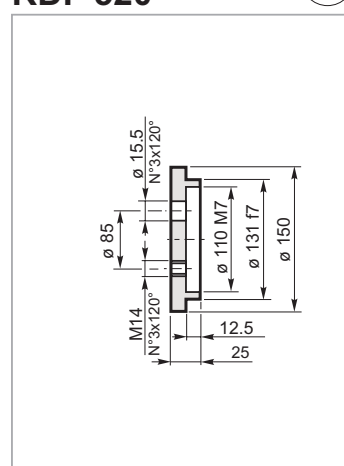
Mat. C40 UNI EN 10083
Code: 9003090

MS S400



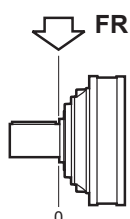
Mat. 42CrMo4 UNI EN 10083
Code: 9006625

RDF 520

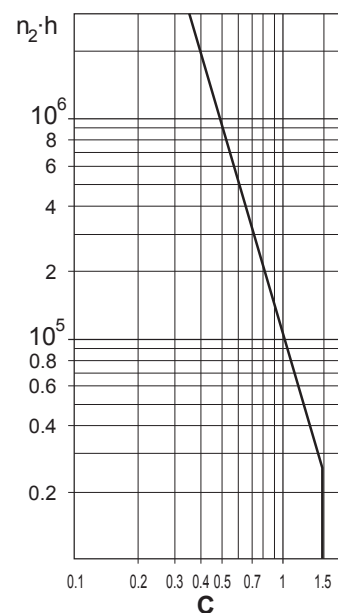
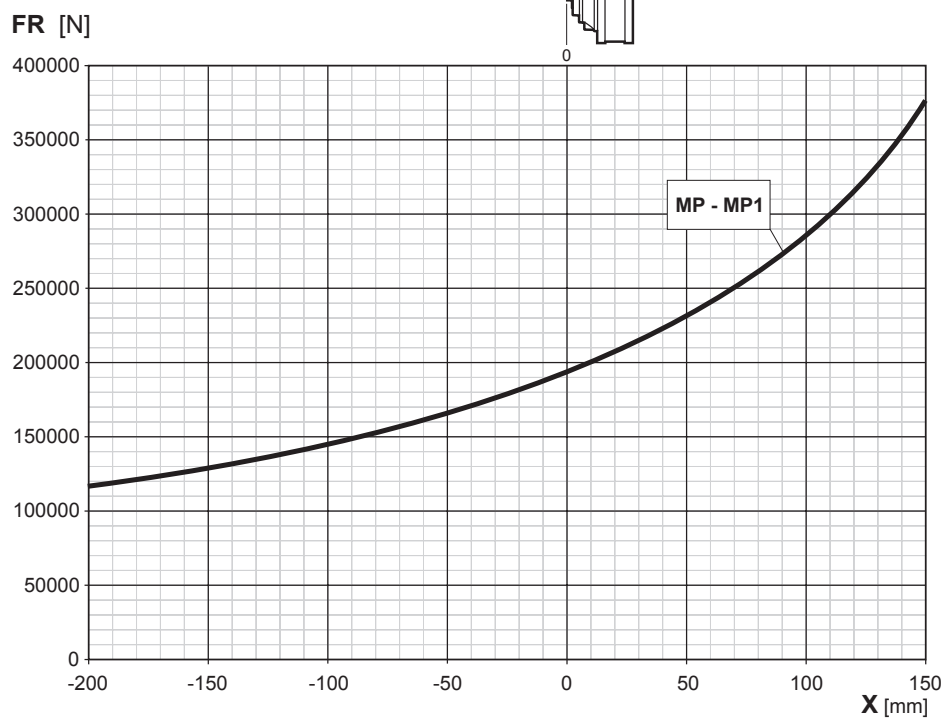


Mat. C40 UNI EN 10083
Code: 37226300000

Carichi radiali sugli alberi uscita
Radial loads on output shafts
Radiallasten auf den Abtriebswellen



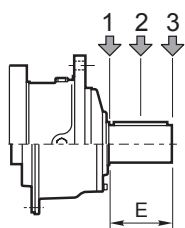
Charges radiales sur les arbres de sortie
Cargas sobre los ejes de salida
Cargas radiais nos eixos de saída



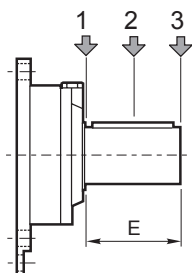
Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada

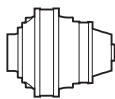


Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S600



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		
SL6001											
4.18	*			239	26654	668	120	32815	411	140000	
4.89				204	27422	587	102	33761	361	120000	
6.00				167	28506	498	83	35095	306	94000	
SL6002											
18.81	80	32558	272	53	36769	205	26.6	45268	126	140000	47
19.76	76	36914	294	51	41689	221	25.3	49588	131	120000	
22.01	68	38088	272	45.4	43015	205	22.7	49917	119	120000	
25.04	60	38864	244	39.9	43891	184	20.0	50314	105	120000	
29.34	51	40237	215	34.1	45441	162	17.0	50806	91	120000	
30.72	48.8	37213	190	32.6	38150	130	16.3	39808	68	94000	
35.99	41.7	38902	170	27.8	43934	128	13.9	46759	68	120000	
44.16	34.0	38051	135	22.6	39009	93	11.3	40704	48.3	94000	
SL6003											
68.90	21.8	48892	111	14.5	55216	84	7.3	63350	48.1	140000	31
80.60	18.6	50532	98	12.4	51805	67	6.2	54055	35.1	120000	
89.78	16.7	50868	89	11.1	52149	61	5.6	54414	31.7	120000	
98.12	15.3	52731	84	10.2	59552	64	5.1	66217	35.3	140000	
109.3	13.7	55196	79	9.2	62336	60	4.6	67306	32.2	140000	
130.2	11.5	58169	70	7.7	63129	51	3.8	69109	27.8	140000	
145.7	10.3	58310	63	6.9	60253	43.3	3.4	62870	22.6	140000	
163.6	9.2	62304	60	6.1	64423	41.2	3.1	69840	22.3	140000	
186.2	8.1	62946	53	5.4	65693	36.9	2.7	72955	20.5	140000	
203.0	7.4	53479	41.4	4.9	55244	28.5	2.5	61351	15.8	120000	
218.2	6.9	60246	43.4	4.6	61764	29.6	2.3	64447	15.5	140000	
SL6004											
241.1	6.2	64250	41.9	4.1	68314	29.7	2.1	75865	16.5	140000	31
284.6	5.3	65879	36.4	3.5	70046	25.8	1.8	77788	14.3	140000	
317.0	4.7	66962	33.2	3.2	71198	23.5	1.6	79068	13.1	140000	
360.6	4.2	68282	29.7	2.8	72601	21.1	1.4	80626	11.7	140000	
413.4	3.6	69708	26.5	2.4	74117	18.8	1.2	82309	10.4	140000	
460.5	3.3	70854	24.2	2.2	75335	17.1	1.1	83663	9.5	140000	
523.9	2.9	72251	21.7	1.9	76821	15.4	1.0	85312	8.5	140000	
569.9	2.6	73177	20.2	1.8	77806	14.3	0.88	86406	7.9	140000	
655.7	2.3	74745	17.9	1.5	79473	12.7	0.76	88258	7.0	140000	
711.3	2.1	75672	16.7	1.4	80458	11.8	0.70	89351	6.6	140000	
792.3	1.9	76916	15.2	1.3	81781	10.8	0.63	90821	6.0	140000	
943.7	1.6	78977	13.1	1.1	83972	9.3	0.53	93254	5.2	140000	
962.6	1.6	79215	12.9	1.0	84225	9.2	0.52	87889	4.8	140000	
1117	1.3	81019	11.4	0.90	85003	8.0	0.45	88695	4.2	140000	
1307	1.1	68861	8.3	0.77	73216	5.9	0.38	81309	3.3	120000	
1350	1.1	83371	9.7	0.74	85995	6.7	0.37	89731	3.5	140000	
1579	0.95	70860	7.0	0.63	75342	5.0	0.32	83670	2.8	120000	
1851	0.81	72581	6.2	0.54	77172	4.4	0.27	85702	2.4	120000	
1986	0.76	56039	4.4	0.50	59584	3.1	0.25	66170	1.7	94000	
2270	0.66	57916	4.0	0.44	61579	2.8	0.22	68386	1.6	120000	
2785	0.54	58980	3.3	0.36	62710	2.4	0.18	69642	1.3	94000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

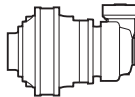
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

10000
HOURS LIFE



S600

i_{eff}	n_1 [rpm]									$T_{2\text{MAX}}$ [Nm]	P_T [kW]
	1500			1000			500				
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]		

SC6003

42.89	35.0	34984	128	23.3	39509	96	11.7	48641	59	140000	22
49.31	30.4	43093	137	20.3	48667	103	10.1	59916	64	140000	
57.69	26.0	49506	135	17.3	50753	92	8.7	52957	48.1	120000	
64.26	23.3	49834	122	15.6	51090	83	7.8	53309	43.4	120000	
74.52	20.1	50290	106	13.4	51556	72	6.7	53796	37.8	120000	
74.52	20.1	50290	106	13.4	51556	72	6.7	53796	37.8	120000	
77.01	19.5	44892	92	13	50699	69	6.5	62418	42.4	140000	
90.09	16.7	50878	89	11.1	52160	61	5.6	54425	31.6	120000	
97.59	15.4	52373	84	10.2	59147	63	5.1	66163	35.5	140000	
114.4	13.1	54222	74	8.7	59364	54	4.4	61943	28.4	140000	
128.9	11.6	40636	49.5	7.8	41660	33.8	3.9	43755	17.8	94000	
133.8	11.2	52128	61.0	7.5	53441	41.8	3.7	57600	22.5	120000	
164.1	9.1	47975	45.9	6.1	49184	31.4	3.0	51320	16.4	120000	
201.4	7.4	41763	32.6	5.0	42815	22.3	2.5	46806	12.2	94000	

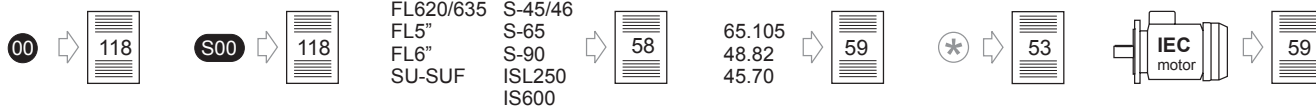
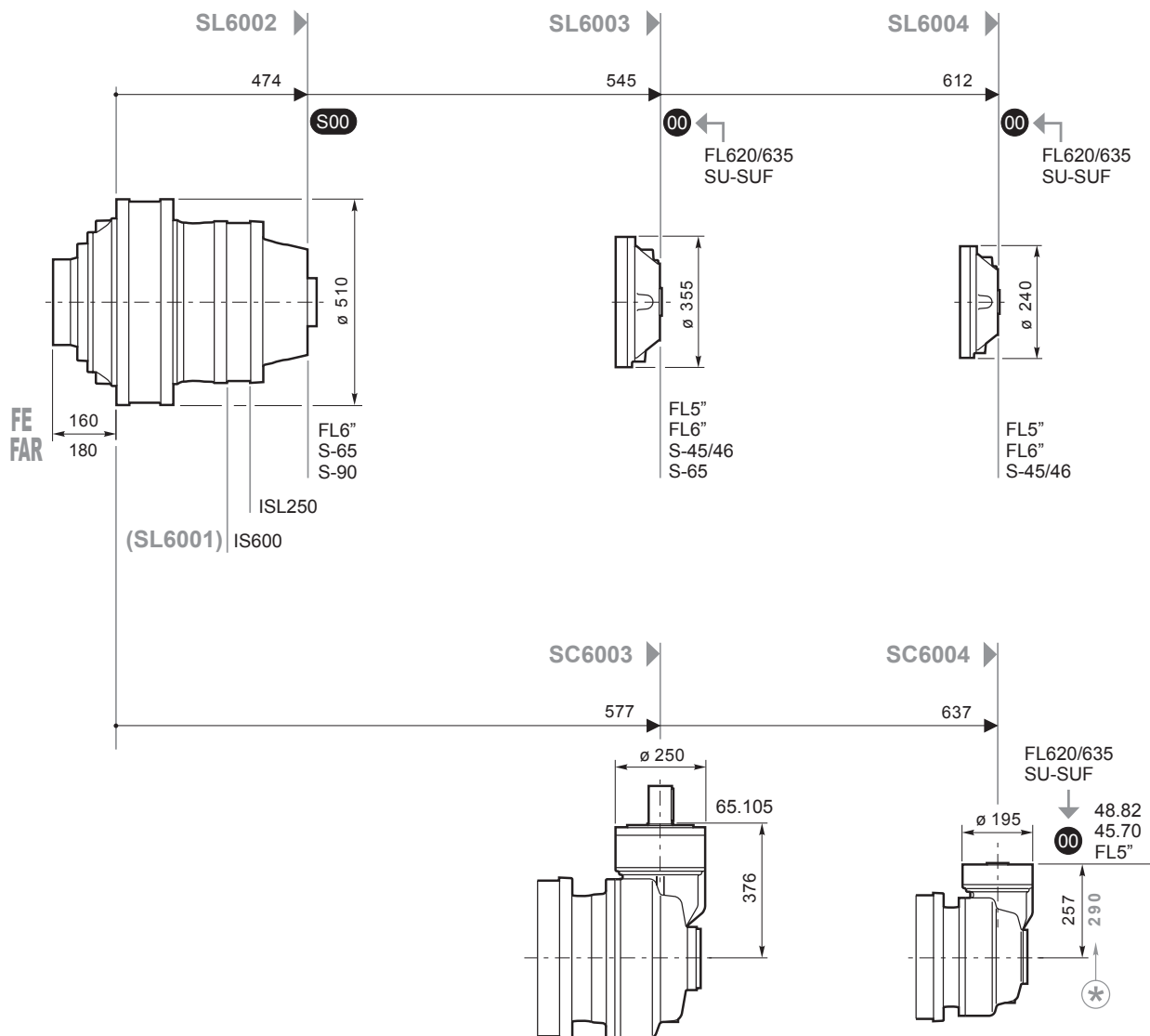
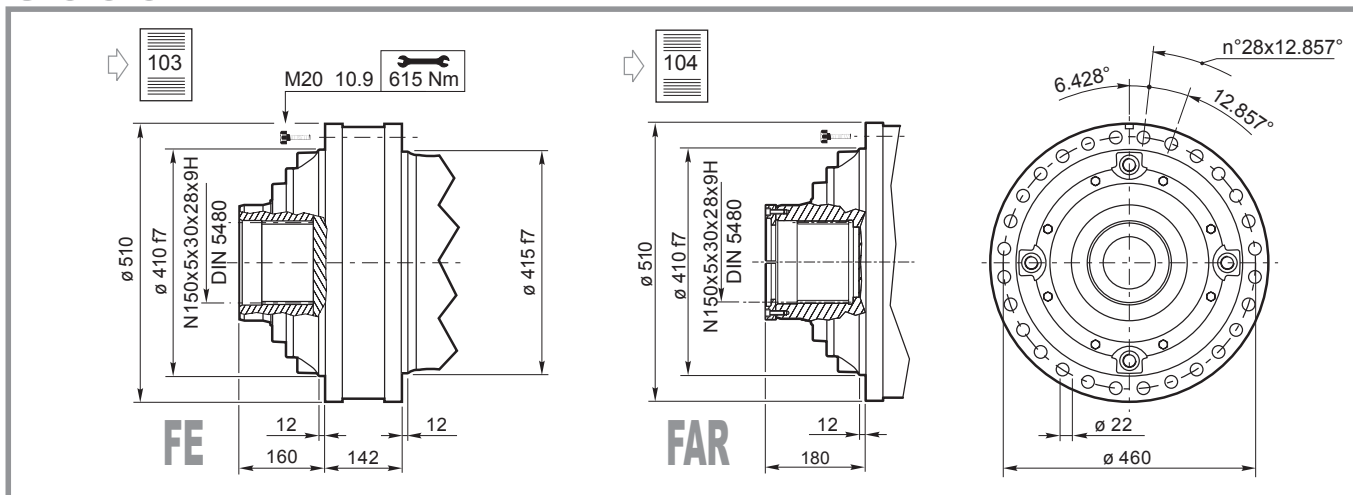
SC6004

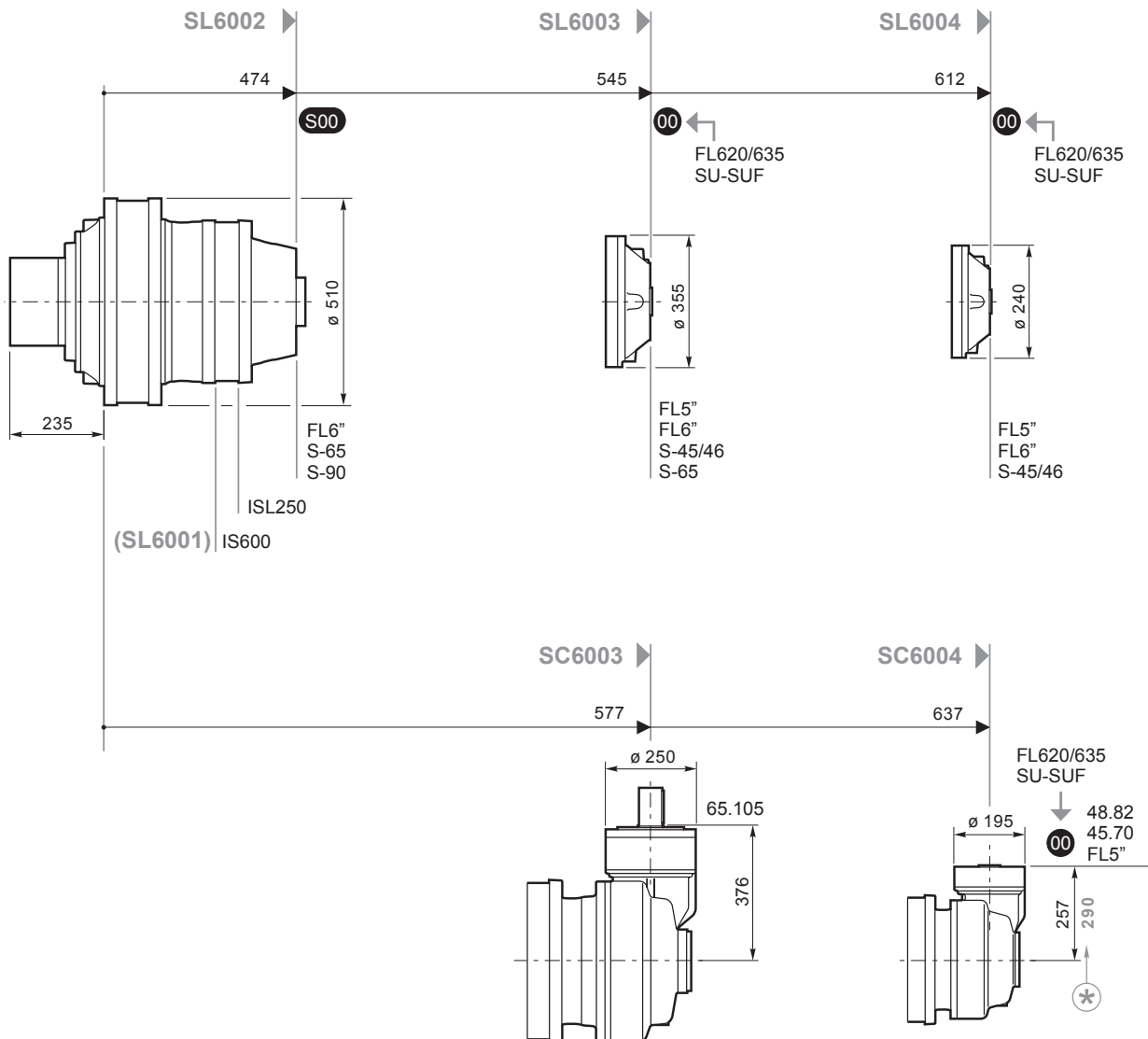
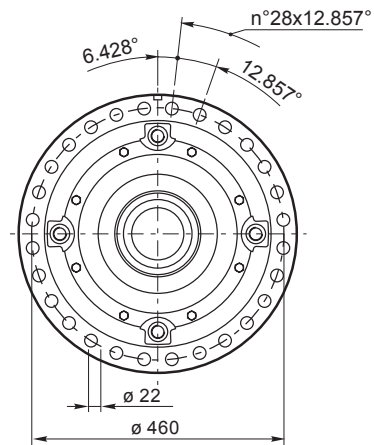
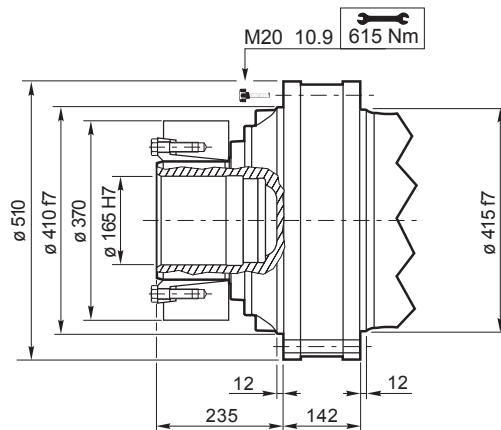
234.5*	6.4	63980	42.9	4.3	68026	30.4	2.1	75546	16.9	140000	17
261.2*	5.7	65032	39.1	3.8	69145	27.7	1.9	76788	15.4	140000	
269.8*	5.6	65351	38.0	3.7	69484	27.0	1.9	77165	15.0	140000	
321.4*	4.7	67102	32.8	3.1	71347	23.2	1.6	79233	12.9	140000	
358.0*	4.2	68206	29.9	2.8	72520	21.2	1.4	80536	11.8	140000	
409.0	3.7	69595	26.7	2.4	73997	18.9	1.2	82177	10.5	140000	
462.6	3.2	70904	24.1	2.2	75388	17.1	1.1	83721	9.5	140000	
518.3	2.9	72134	21.9	1.9	76697	15.5	0.96	85175	8.6	140000	
569.1	2.6	73161	20.2	1.8	77788	14.3	0.88	86387	7.9	140000	
651.7	2.3	74676	18.0	1.5	79399	12.8	0.77	85810	6.9	140000	
721.2	2.1	75830	16.5	1.4	80626	11.7	0.69	89538	6.5	140000	
797.0	1.9	71947	14.2	1.3	73759	9.7	0.63	76963	5.1	140000	
906.8	1.7	78502	13.6	1.1	83467	9.6	0.55	87567	5.1	140000	
988.8	1.5	66015	10.5	1.0	70191	7.4	0.51	77950	4.1	120000	
1096	1.4	53902	7.7	0.91	55260	5.3	0.46	61253	2.9	120000	
1243	1.2	68341	8.6	0.80	72664	6.1	0.40	80696	3.4	120000	
1345	1.1	52828	6.2	0.74	56170	4.4	0.37	62379	2.4	94000	
1525	0.98	55006	5.7	0.66	57982	4.0	0.33	64391	2.2	120000	
1871	0.80	55535	4.7	0.53	59048	3.3	0.27	65574	1.8	94000	



S600

FE - FAR



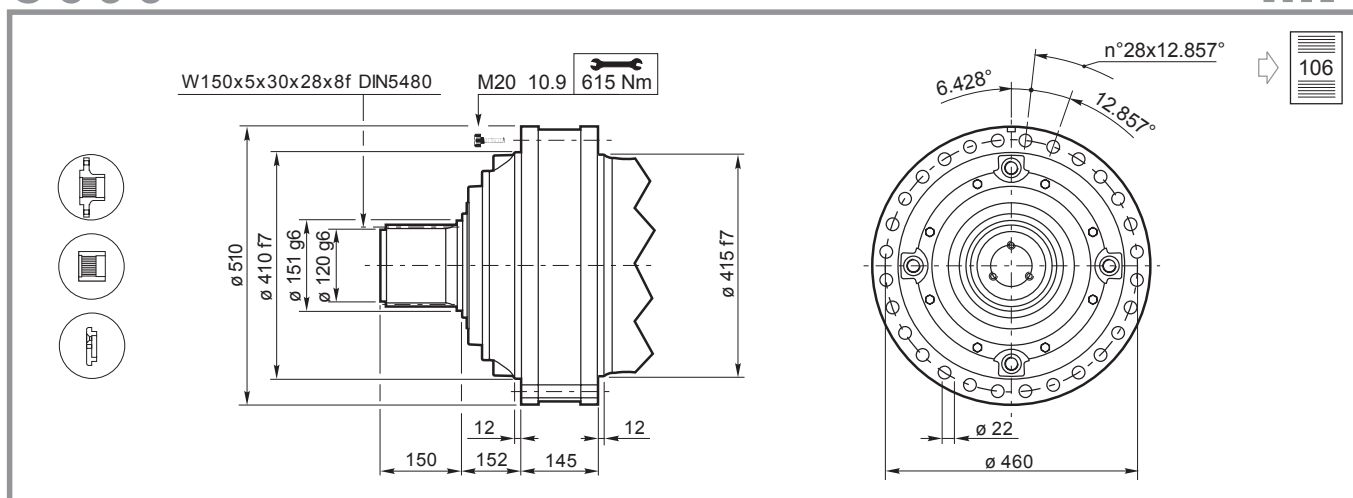


FL620/635	S-45/46
FL5"	S-65
FL6"	S-90
SU-SUF	ISL250
	IS600

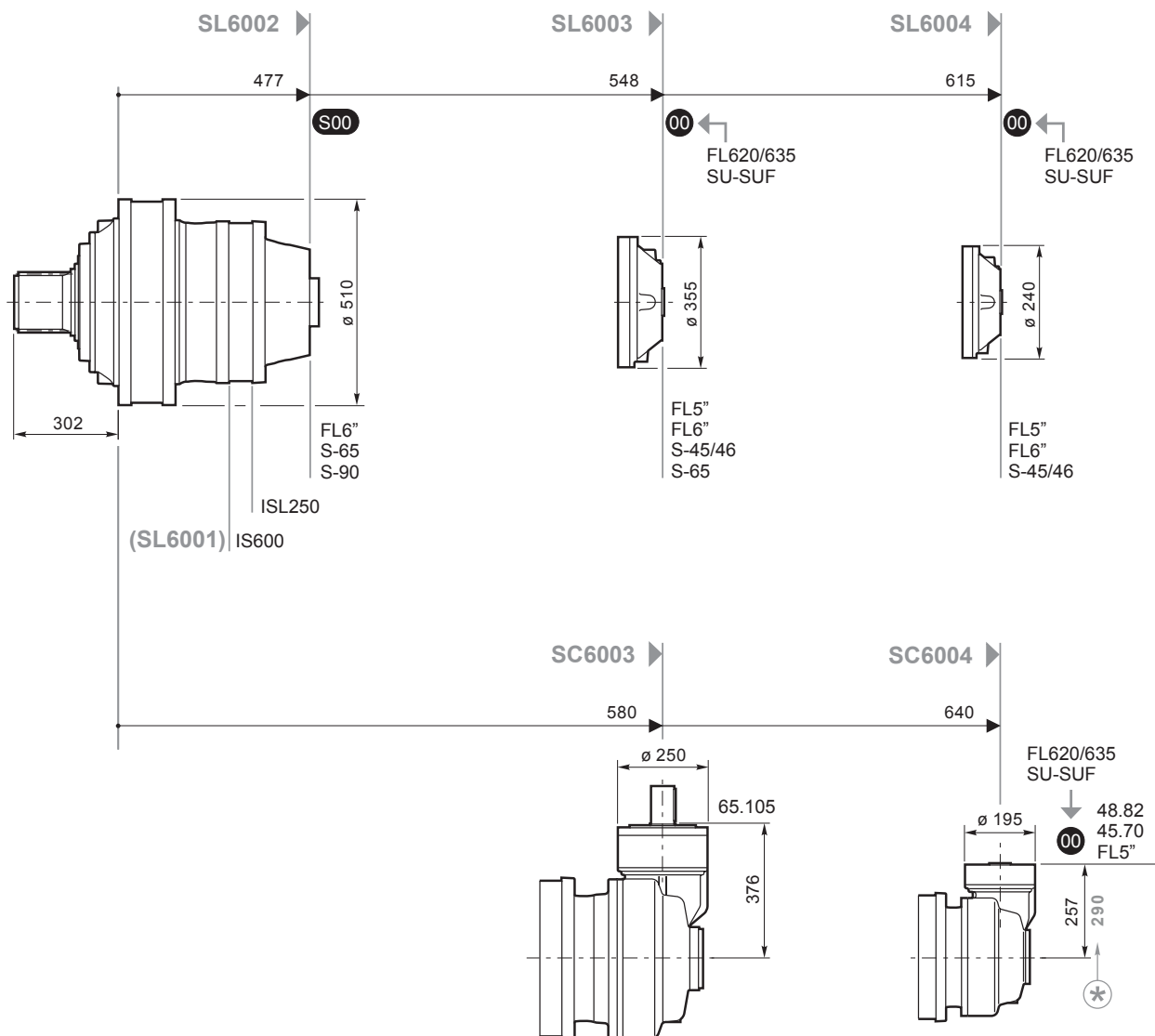


65.105
48.82
45.70





106



118

S00



FL620/635 S-45/46
FL5" S-65
FL6" S-90
SU-SUF ISL250
IS600



58

65.105
48.82
45.70

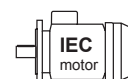


59

*

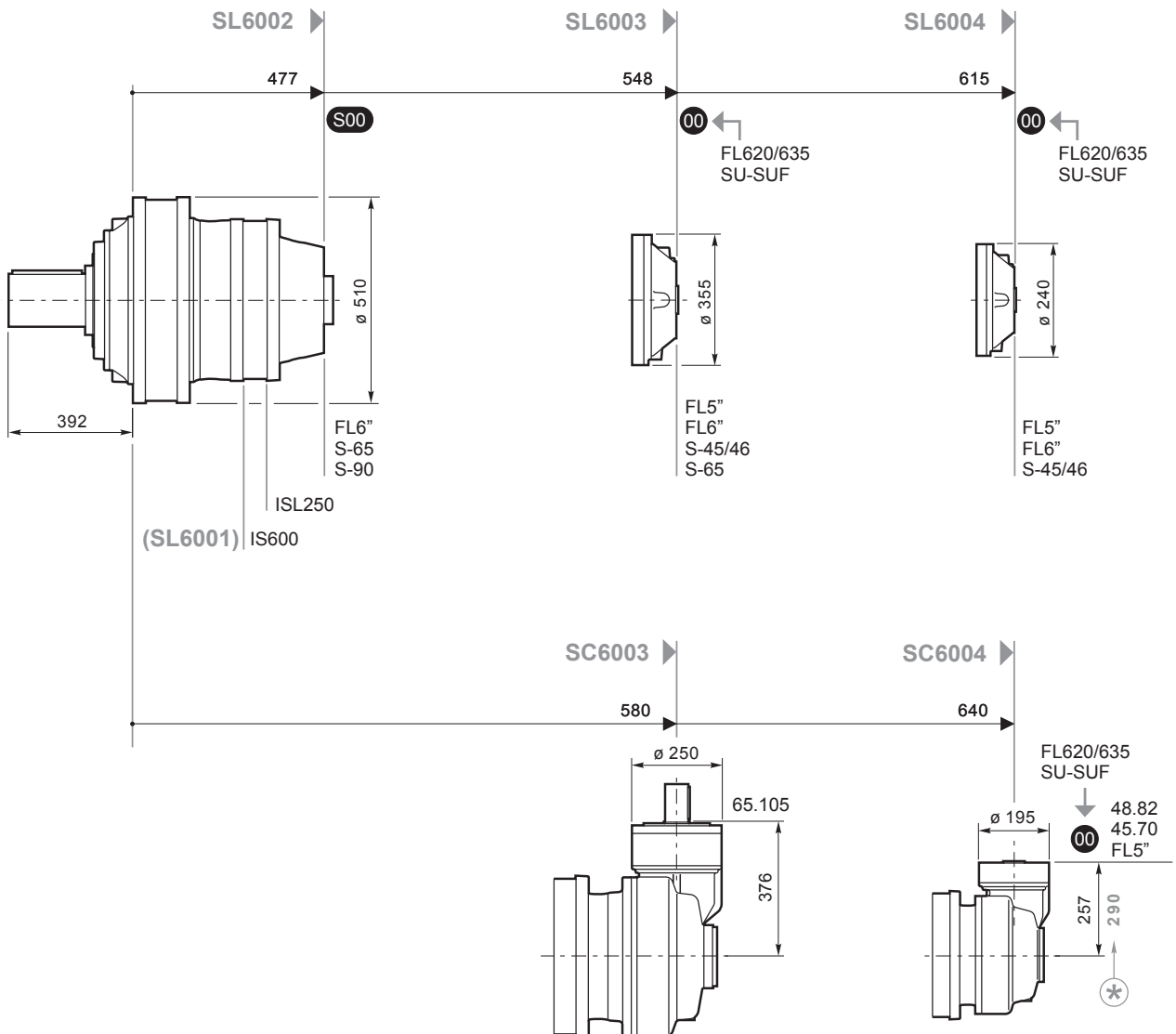
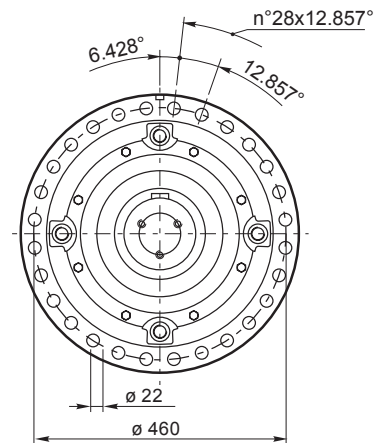
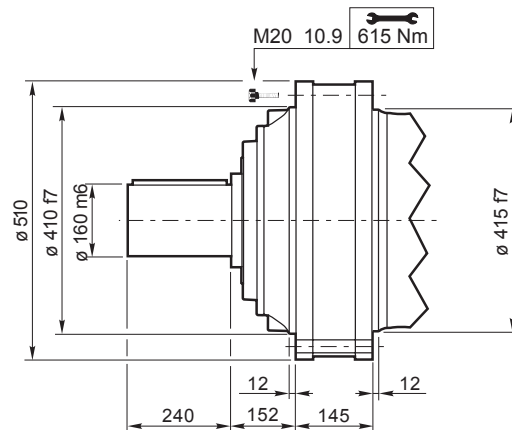


53



IEC motor

59

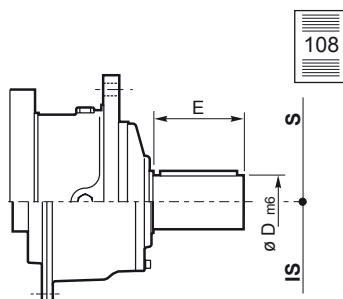


FL620/635 S-45/46
FL5" S-65
FL6" S-90
SU-SUF ISL250
IS600

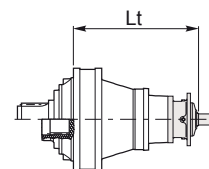


S600

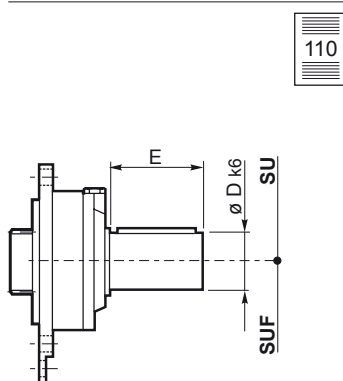
S-45/46, S-65, S-90, ISL250, IS600



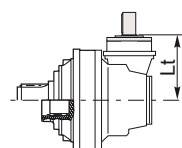
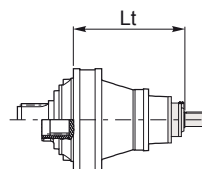
	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL250	IS600
D m6	65	65	80	90	90	110
E	105	105	130	170	130	210
Lt (FE - FS)						
SL6001						488
SL6002			666.5	672.5	544	
SL6003	675	716	714			
SL6004	675	716				
Lt (MP - MP1)						
SL6001						491
SL6002			669.5	675.5	547	
SL6003	678	719	717			
SL6004	678	719				



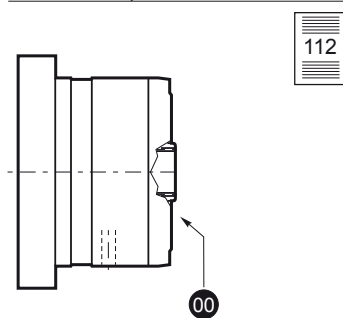
SU-SUF



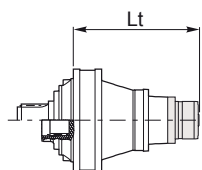
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
Lt (FE - FS)			
SL6003	605	605	605
SL6004	672	672	672
Lt (MP - MP1)			
SL6003	608	608	608
SL6004	675	675	675
Lt			
SC6003	317-350*	317-350*	317-350*



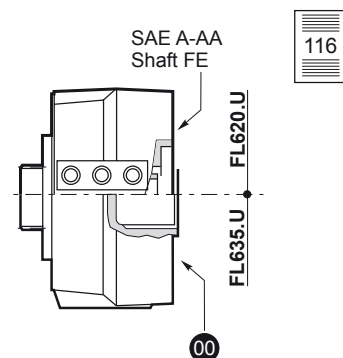
FL5", FL6"



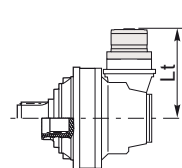
	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
Lt (FE - FS)						
SL6002						594
SL6003	645	645	645	661.5	661.5	672.5
SL6004	705.5	705.5	705.5	722	722	746
Lt (MP - MP1)						
SL6002						597
SL6003	648	648	648	661.5	661.5	675.5
SL6004	708.5	708.5	708.5	722	722	749
Lt						
SC6004	408.5-441.5*	408.5-441.5*	408.5-441.5*	422-455*	422-455*	



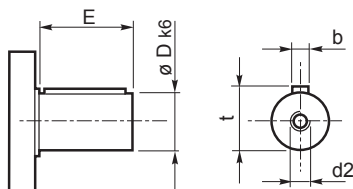
FL620/635



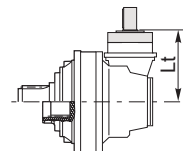
	FL620.U	FL635.U
Lt (FE - FS)		
SL6003	649.5	636.5
SL6004	710.5	703.5
Lt (MP - MP1)		
SL6003	652.5	639.5
SL6004	719.5	706.5
Lt		
SC6004	361.5-394.5	384.5-381.5



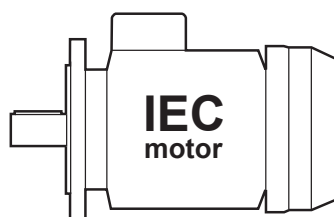
65.105, 48.82, 45.70



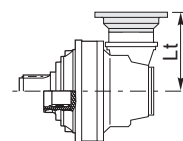
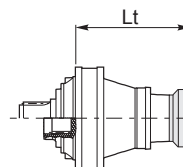
	65.105	48.82	45.70
Dk6	65 m6	48	45
E	105	82	70
b	18	14	14
t	69	51.5	48.5
d2	M20x42	M10x22	M10x22
	Lt		
SC6003	376		
SC6004		317	307



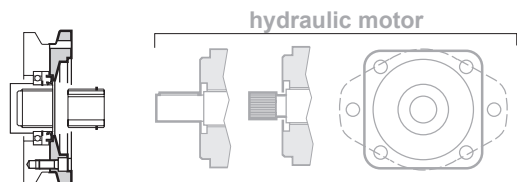
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt (FE - FS)						
SL6003				645	645	684	712
SL6004		640	707	738	738	748	778
	Lt (MP - MP1)						
SL6003				648	648	687	715
SL6004		643	710	741	741	751	781
	Lt						
SC6004		285-318*	352-365*	383-416*	383-416*	394-427*	424-457*

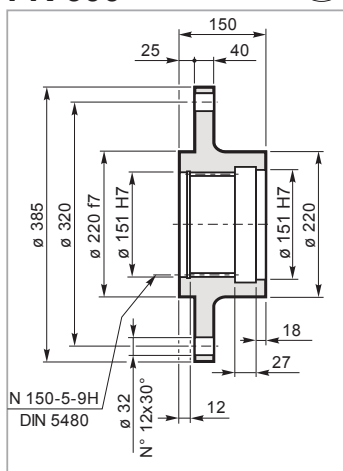


SAE J 744C, NEMA Adaptors



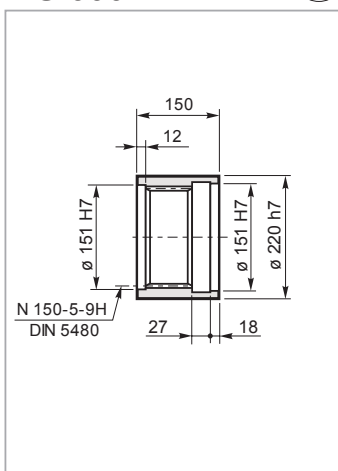
S600

FR 600



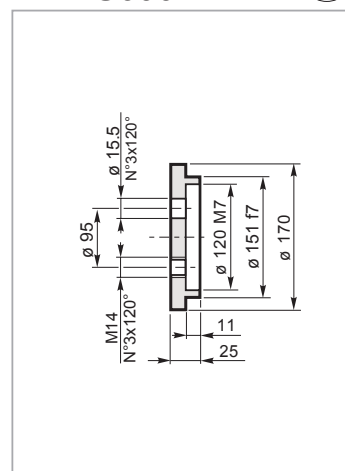
Mat. C45 UNI EN 10083
Code: 34704012800

MS 600



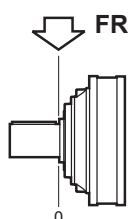
Mat. 42CrMo4 UNI EN 10083
Code: 39111330600

RDF S600

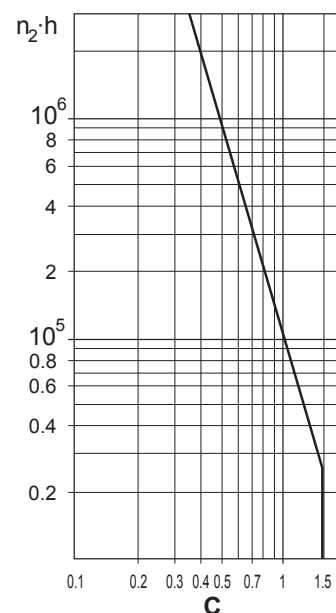
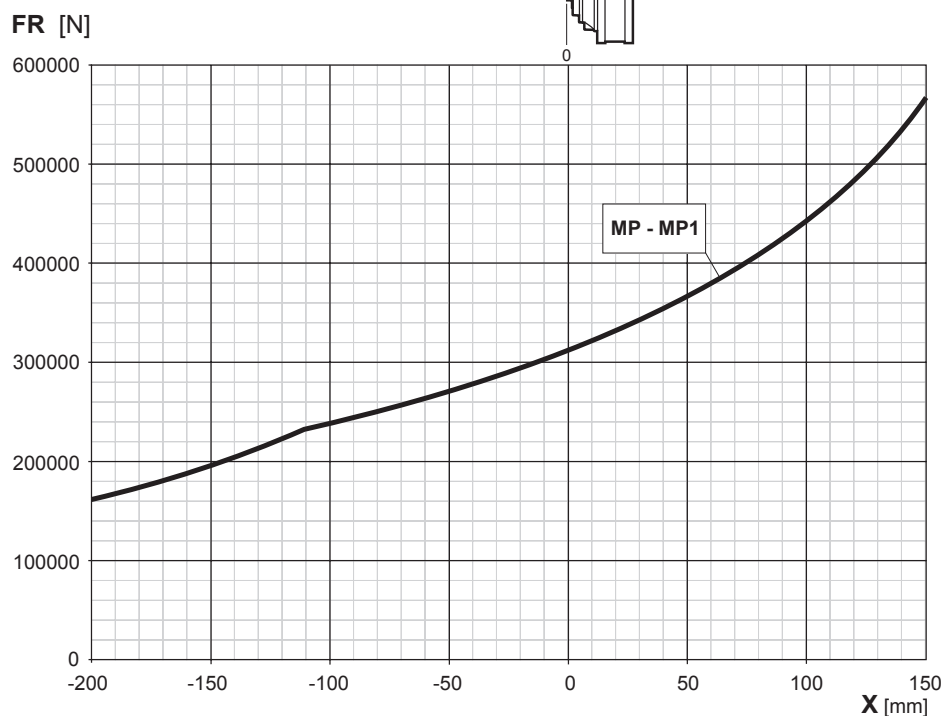


Mat. C40 UNI EN 10083
Code: 9001845

Carichi radiali sugli alberi uscita
Radial loads on output shafts
Radiallasten auf den Abtriebswellen



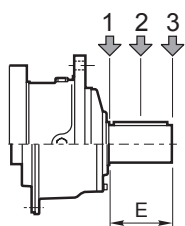
Charges radiales sur les arbres de sortie
Cargas sobre los ejes de salida
Cargas radiais nos eixos de saída



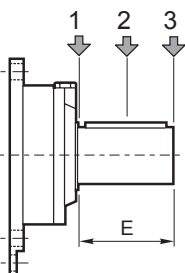
Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada

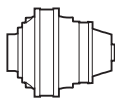


Type	E	Fr [N]					
		n ₁ · h = 10 ⁷			n ₁ · h = 10 ⁸		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL250	130	7631	4302	2995	3824	2156	1501
IS600	210	54336	36909	26346	27248	18498	13204



Type	E	Fr [N]					
		n ₁ · h = 10 ⁷			n ₁ · h = 10 ⁸		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S850



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]		
	1500			1000			500						
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]				
SL8501													
4.18	*						120	42957	538	195000			
4.89							102	44196	473			167000	
6.00							83	45944	401			123000	
SL8502													
18.81	*			53	54789	305	26.6	67453	188	195000			
19.76				51	54574	289	25.3	67189	178			167000	
21.40				46.7	56952	279	23.4	70117	172			195000	
25.08				39.9	59727	249	19.9	73533	154			195000	
29.34				34.1	61449	219	17.0	70921	127			167000	
30.77				32.5	57250	195	16.3	59737	102			150480	
35.99				27.8	65333	190	13.9	69884	102			167000	
SL8503													
74.30	20.2	73256	155	13.5	82732	117	6.7	89127	63	195000			
83.14	18.0	75769	143	12.0	85569	108	6.0	90435	57			195000	
87.32	17.2	70886	128	11.5	72671	87	5.7	75828	45.5			167000	
101.3	14.8	80401	125	9.9	87058	90	4.9	93182	48.2			195000	
112.9	13.3	83044	116	8.9	87635	81	4.4	94714	43.9			195000	
128.4	11.7	86162	105	7.8	88332	72	3.9	96582	39.4			195000	
141.1	10.6	86661	96	7.1	88843	66	3.5	97965	36.4			195000	
160.5	9.3	87350	85	6.2	89954	59	3.1	99897	32.6			195000	
188.1	8.0	88204	74	5.3	92138	51	2.7	97951	27.3			195000	
202.5	7.4	58475	45	4.9	59948	31	2.5	65570	17.0			123000	
SL8504													
233.5	6.4	89536	60	4.3	95199	42.7	2.1	105722	23.7	195000			
261.2	5.7	91071	55	3.8	96831	38.8	1.9	107535	21.6			195000	
291.0	5.2	92569	50	3.4	98424	35.4	1.7	109303	19.7			195000	
329.8	4.6	94340	44.9	3.0	100307	31.8	1.5	111394	17.7			195000	
371.5	4.0	96053	40.6	2.7	102128	28.8	1.4	113417	16.0			195000	
418.0	3.6	97782	36.7	2.4	103967	26.0	1.2	115459	14.5			195000	
468.9	3.2	99496	33.3	2.1	105789	23.6	1.1	117483	13.1			195000	
512.7	2.9	100849	30.9	2.0	107227	21.9	1.0	119080	12.2			195000	
571.1	2.6	102507	28.2	1.8	108991	20.0	0.88	121038	11.1			195000	
649.8	2.3	104528	25.3	1.5	111140	17.9	0.77	123425	9.9			195000	
705.4	2.1	105835	23.6	1.4	112529	16.7	0.71	124733	9.3	195000			
802.6	1.9	107922	21.1	1.3	114748	15.0	0.62	127432	8.3	195000			
940.5	1.6	101069	16.9	1.1	105722	11.8	0.53	117408	6.5	195000			
963.1	1.6	110939	18.1	1.0	117956	12.8	0.52	130995	7.1	195000			
1129	1.3	102213	14.2	0.89	108678	10.1	0.44	120691	5.6	195000			
1296	1.2	81392	9.9	0.77	84549	6.8	0.39	93895	3.8	167000			
1350	1.1	81596	9.5	0.74	85072	6.6	0.37	94476	3.7	167000			
1620	0.93	82514	8.0	0.62	87451	5.7	0.31	97118	3.1	167000			
1987	0.75	78443	6.2	0.50	83405	4.4	0.25	92624	2.4	123000			

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

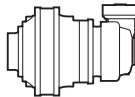
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

10000
HOURS LIFE



S850

i_{eff}	n_1 [rpm]									$T_{2\text{MAX}}$ [Nm]	P_T [kW]
	1500			1000			500				
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]		

SC8503

42.89	35.0	34984	128	23.3	39509	96	11.7	48641	59	195000	27
49.31	30.4	43093	137	20.3	48667	103	10.1	59916	64	195000	
57.69	26.0	50413	137	17.3	56933	103	8.7	70093	64	167000	
64.26	23.3	56153	137	15.6	63416	103	7.8	74415	61	167000	
73.23	20.5	64000	137	13.7	72278	103	6.8	88984	64	195000	
78.14	19.2	59130	119	12.8	60619	81	6.4	63253	42.4	195000	
85.67	17.5	70803	130	11.7	72586	89	5.8	75740	46.3	167000	
100.3	14.9	58497	92	10	66064	69	5.0	76981	40.2	167000	
114.4	13.1	66672	92	8.7	75295	69	4.4	92699	42.4	195000	
128.9	11.6	56878	69	7.8	58311	47.4	3.9	61243	24.9	123000	
133.8	11.2	72766	85	7.5	74599	58	3.7	80404	31.5	167000	
164.1	9.1	71702	69	6.1	73508	46.9	3.0	76701	24.5	167000	

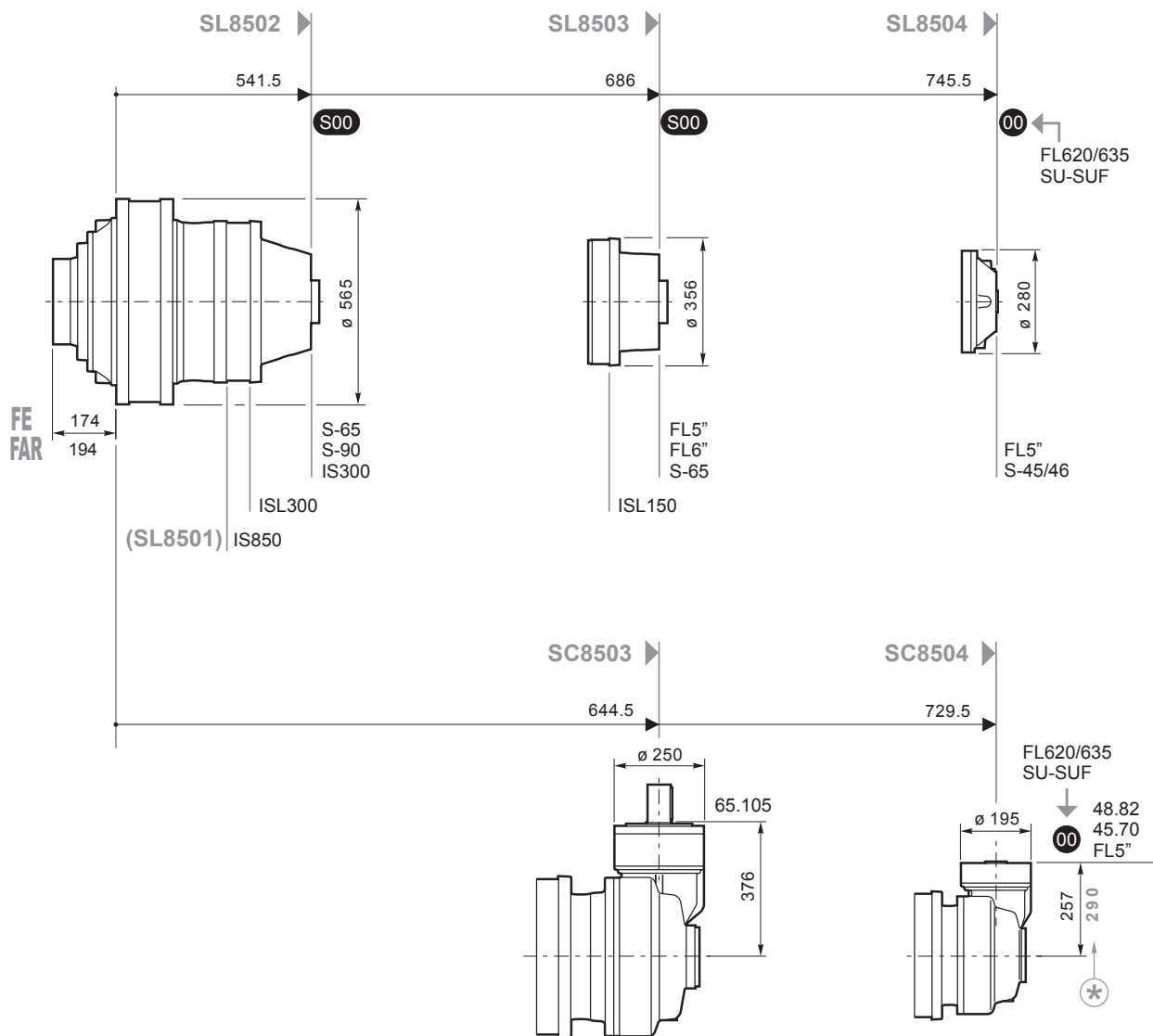
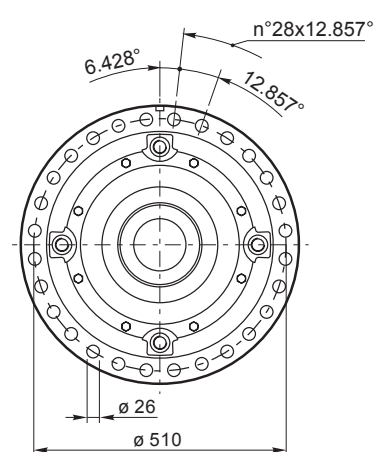
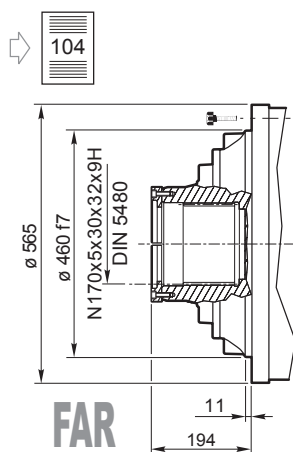
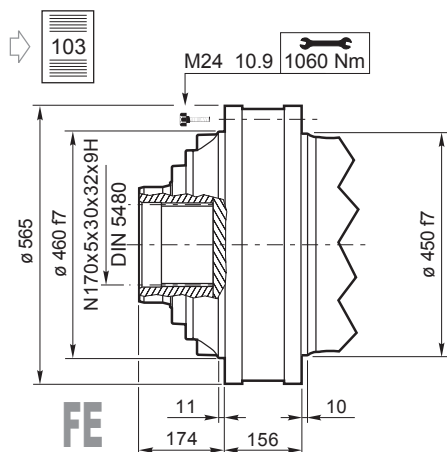
SC8504

183.4*	8.2	71482	61	5.5	80727	46.1	2.7	99387	28.4	195000	20
205.3*	7.3	79987	61	4.9	90333	46.1	2.4	103683	26.4	195000	
235.0*	6.4	89624	60	4.3	95292	42.5	2.1	105826	23.6	195000	
261.7*	5.7	91097	55	3.8	96859	38.8	1.9	107566	21.5	195000	
278.6*	5.4	91964	52	3.6	97780	36.7	1.8	108589	20.4	195000	
310.4*	4.8	93476	47.3	3.2	99388	33.5	1.6	110374	18.6	195000	
353.1*	4.2	95319	42.4	2.8	101348	30.1	1.4	112550	16.7	195000	
388.0*	3.9	96685	39.1	2.6	102800	27.7	1.3	114163	15.4	195000	
449.4	3.3	98860	34.6	2.2	105113	24.5	1.1	116732	13.6	195000	
493.8	3.0	100277	31.9	2	106619	22.6	1.0	118404	12.6	195000	
561.8	2.7	102254	28.6	1.8	108721	20.3	0.89	120739	11.3	195000	
625.4	2.4	100991	25.4	1.6	110498	18.5	0.80	122712	10.3	195000	
687.0	2.2	105414	24.1	1.5	112082	17.1	0.73	124471	9.5	195000	
781.7	1.9	107492	21.6	1.3	114291	15.3	0.64	126925	8.5	195000	
916.0	1.6	100906	17.3	1.1	105302	12.0	0.55	116942	6.7	195000	
986.2	1.5	70555	11.2	1.0	75018	8.0	0.51	83310	4.4	123000	
1072	1.4	93281	13.7	0.93	99181	9.7	0.47	110144	5.4	167000	
1290	1.2	73483	8.9	0.77	78131	6.3	0.39	86768	3.5	123000	
1613	0.93	76006	7.4	0.62	80813	5.2	0.31	89746	2.9	123000	



S850

FE - FAR



00



S00



FL620/635
FL5"
FL6"
SU-SUF
S-45/46
S-65
S-90
ISL300
IS850

68



65.105
48.82
45.70

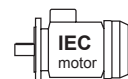
69



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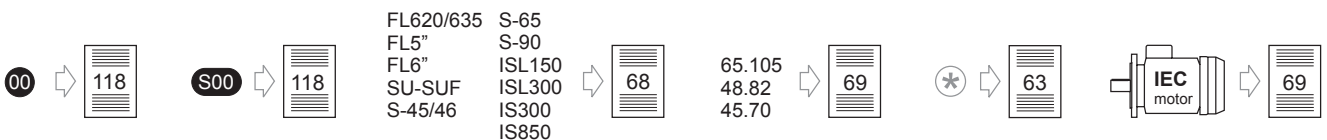
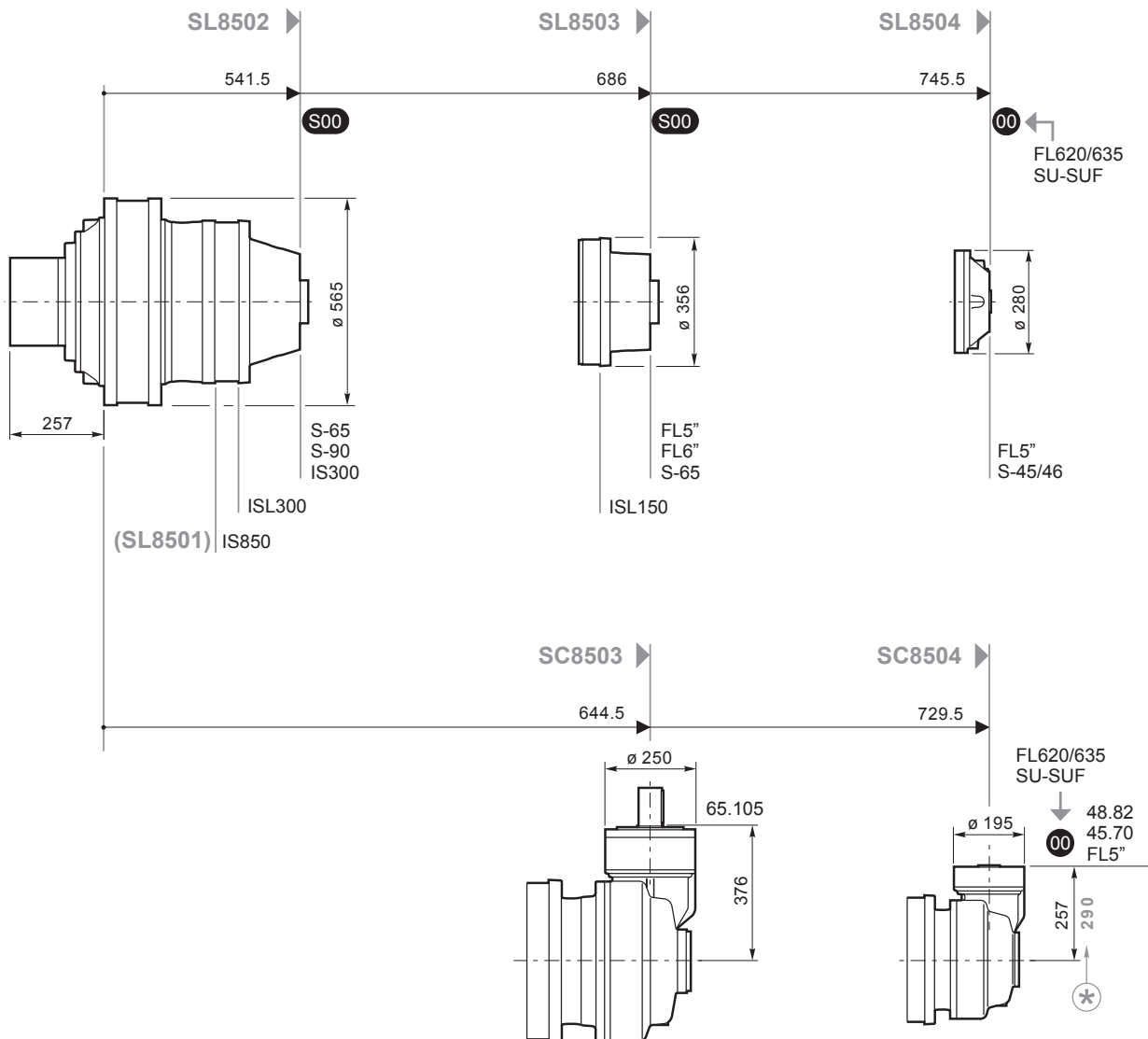
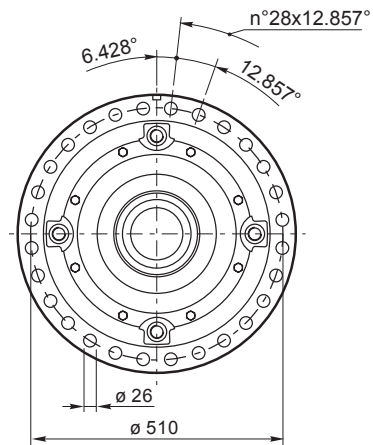
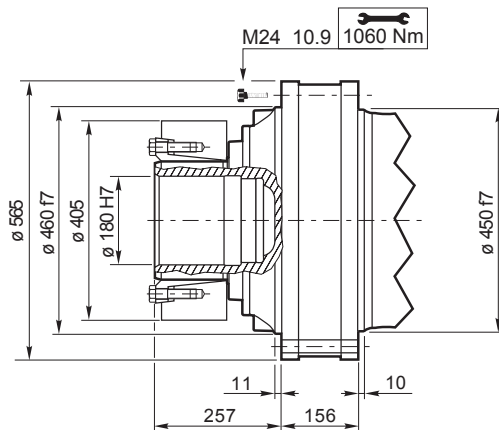


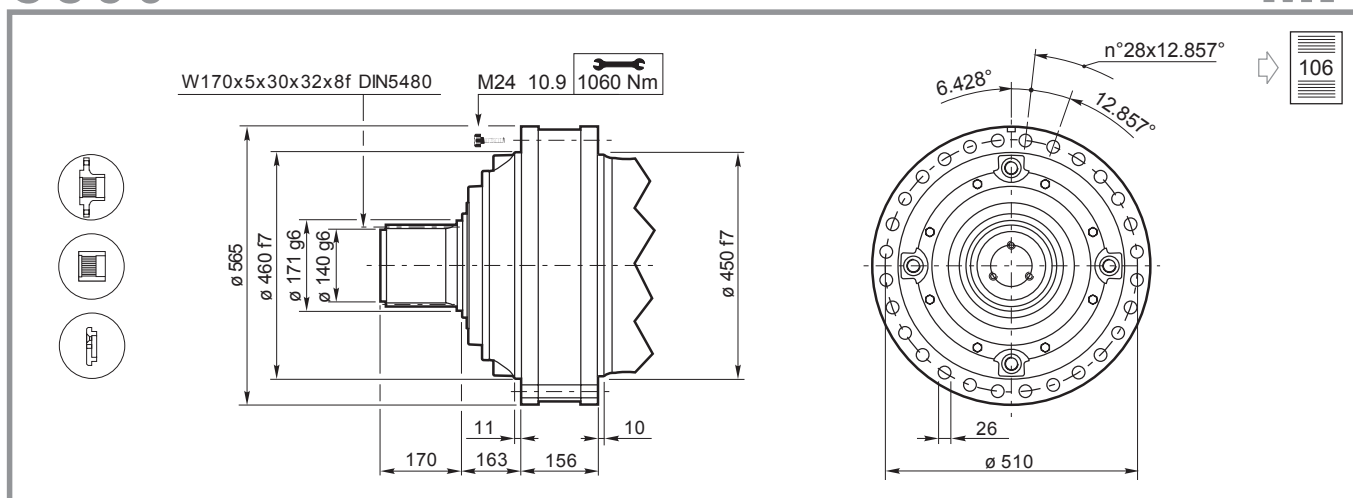
63



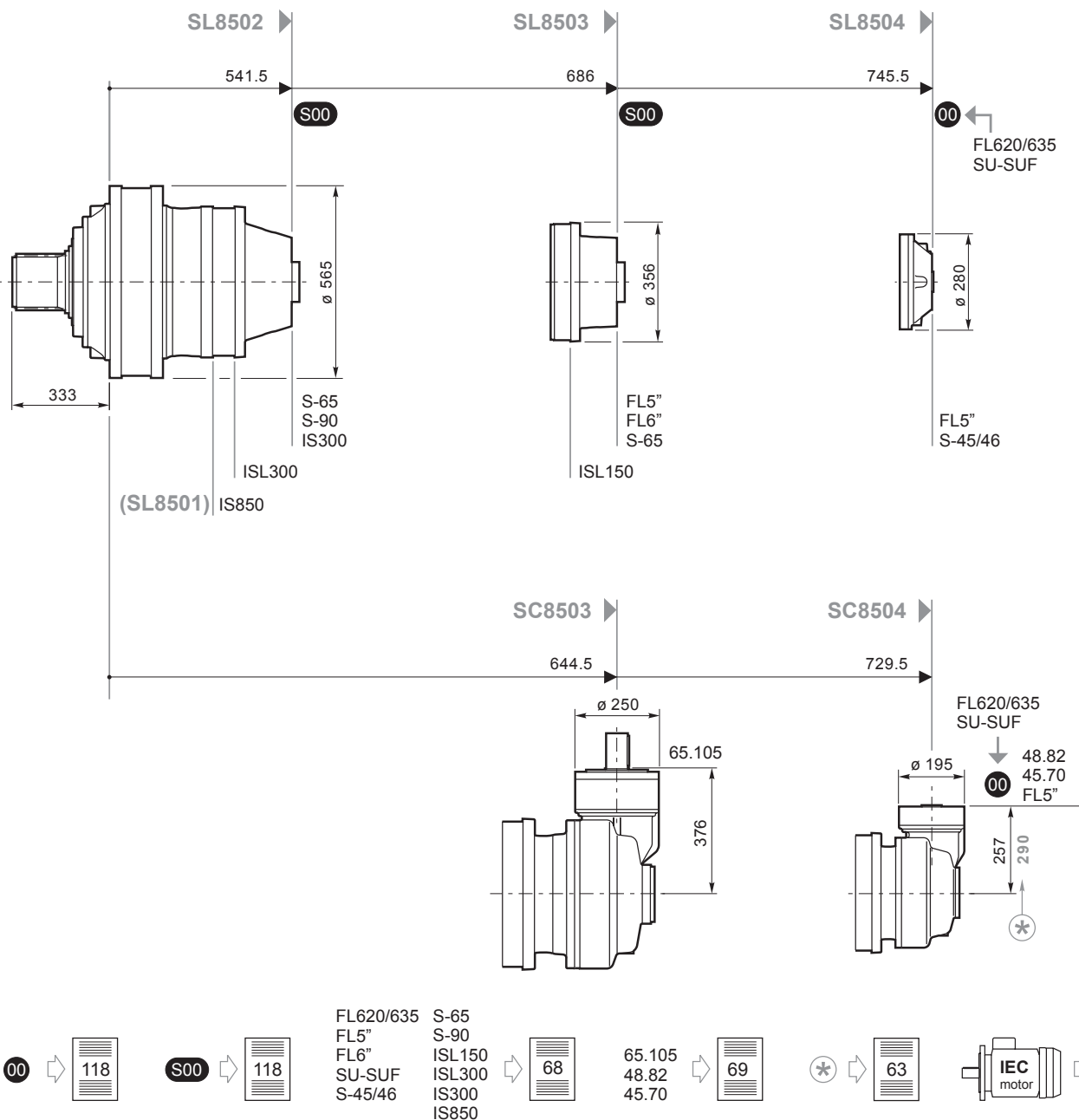
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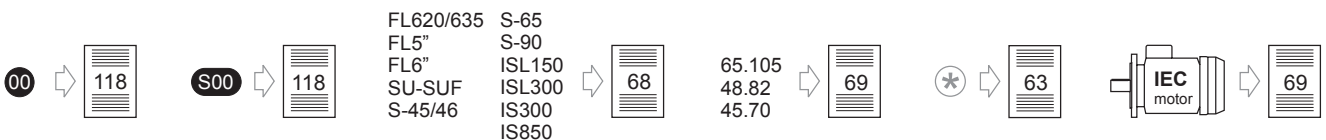
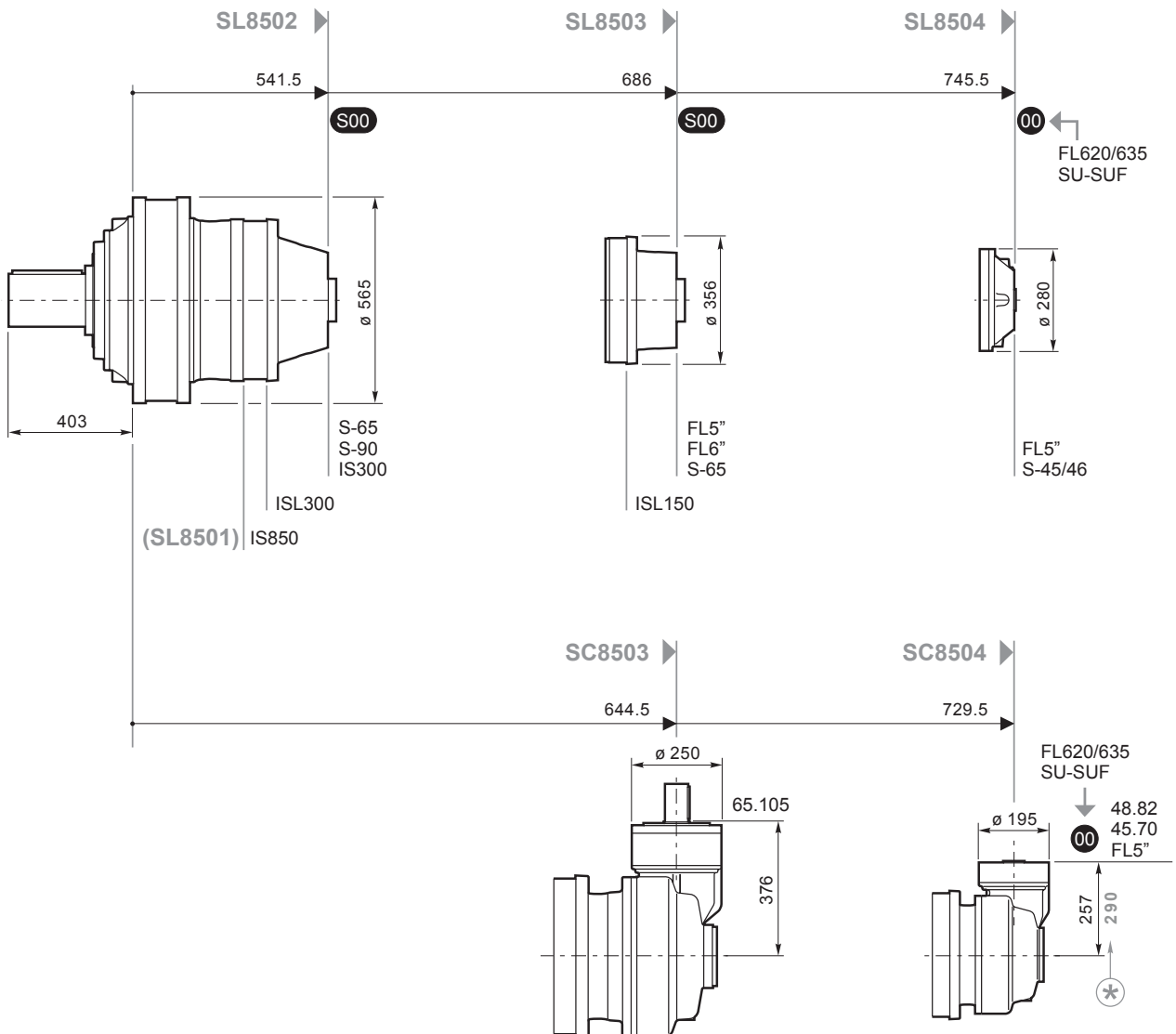
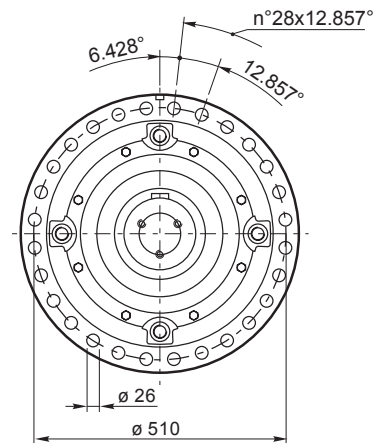
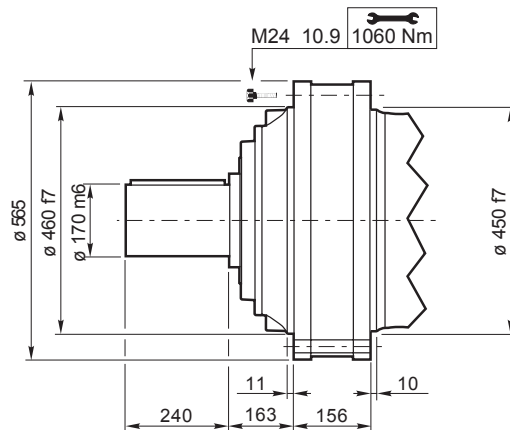






106

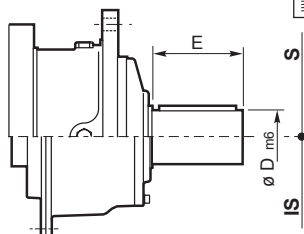




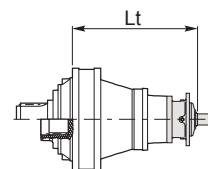
S850

S-45/46, S-65, S-90, ISL150, ISL300, IS300, IS850

108

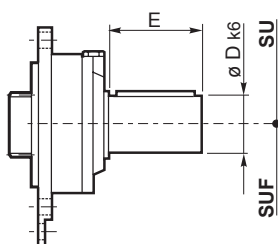


	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL150	ISL300	IS300	IS850
D m6	65	65	80	90	90	90	100	110
E	105	105	130	170	130	130	210	210
	Lt							
SL8501								578.5
SL8502			734	740		611.5	719.5	
SL8503			878		756			
SL8504	873.5	914.5	912					

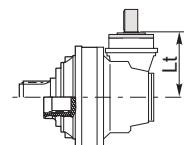
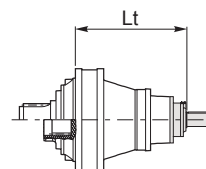


SU-SUF

110



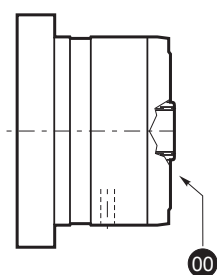
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
	Lt		
SL8504	806.5	806.5	806.5
SC8504	317-350*	317-350*	317-350*



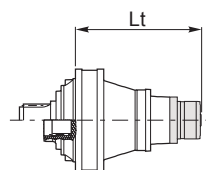
* 63

FL5", FL6"

112

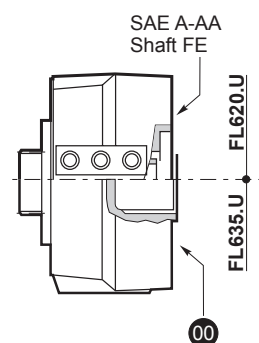


	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL8503	765	765	765	778.5	778.5	792.5
SL8504	851	851	851	864.5	864.5	878.5
SC8504	408.5-441.5*	408.5-441.5*	408.5-441.5*	422-455*	422-455*	



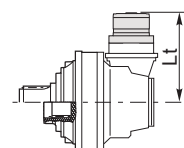
FL620/635

116

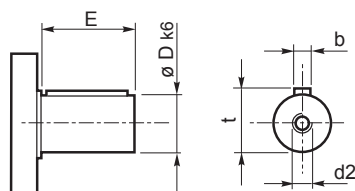


	FL620.U	FL635.U
	Lt	
SL8504	851	838
SC8504	361.5-394.5	384.5-381.5

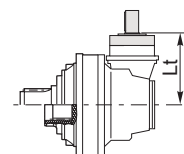
* 63



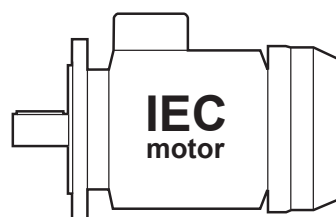
65.105, 48.82, 45.70



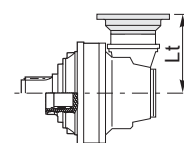
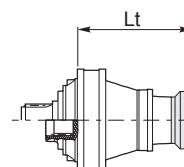
	65.105	48.82	45.70
Dk6	65 m6	48	45
E	105	82	70
b	18	14	14
t	69	51.5	48.5
d2	M20x42	M10x22	M10x22
	Lt		
SC8503	376		
SC8504		317	307



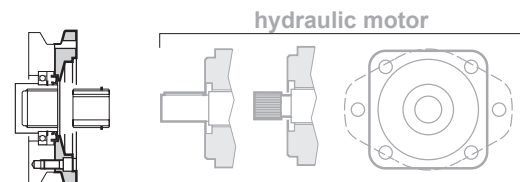
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt						
SL8503						761	791
SL8504		774.5	841.5	852.2	852.5	882.5	912.5
SC8504			352-385*	383-416*	383-416*	394-427*	424-457*

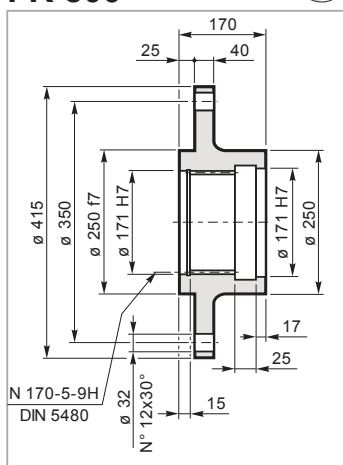


SAE J 744C, NEMA Adaptors



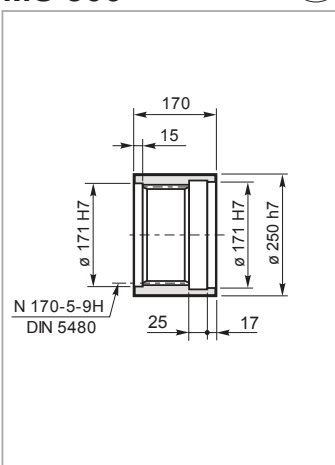
S850

FR 800



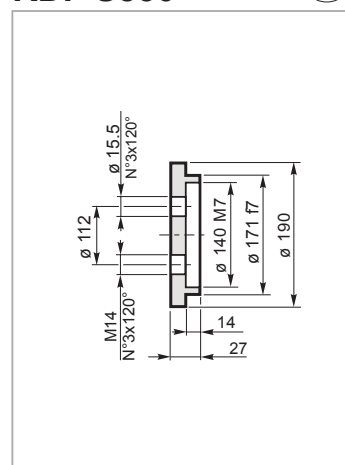
Mat. C40 UNI EN 10083
Code: 34704512800

MS 800



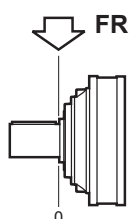
Mat. 39NiCrMo3 UNI EN 10083
Code: 39105830800

RDF S850

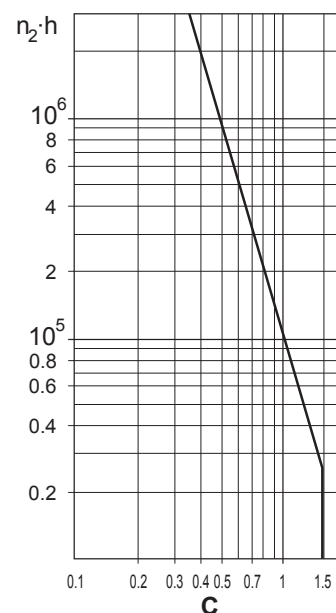
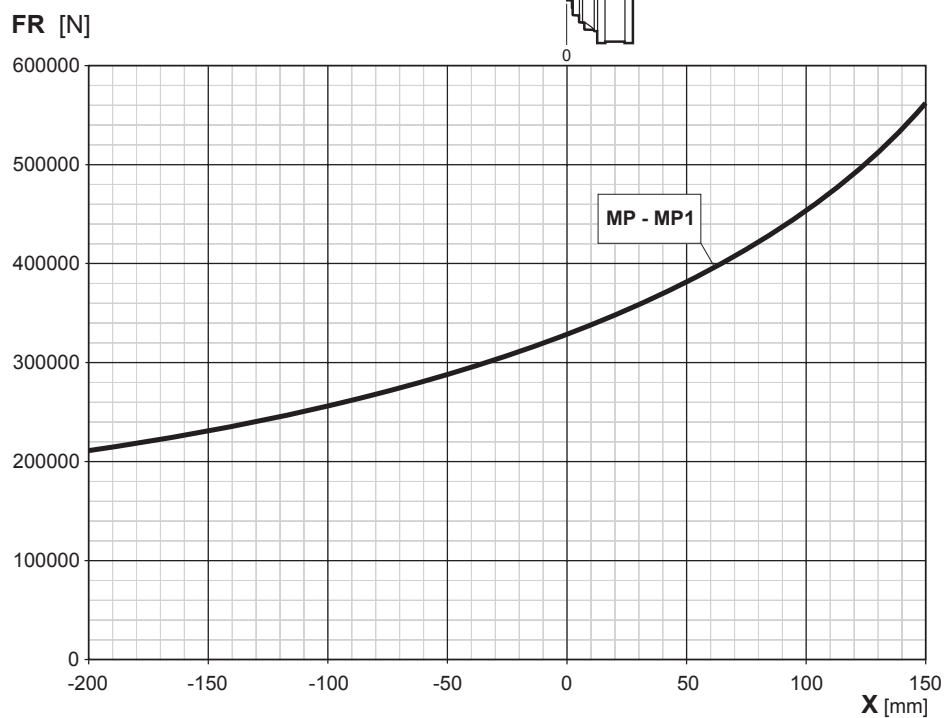


Mat. C40 UNI EN 10083
Code: 9001846

Carichi radiali sugli alberi uscita
Radial loads on output shafts
Radiallasten auf den Abtriebswellen



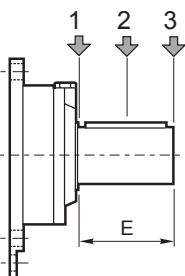
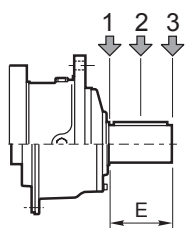
Charges radiales sur les arbres de sortie
Cargas sobre los ejes de salida
Cargas radiais nos eixos de saída



Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

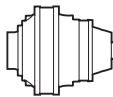
Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484
IS850	210	52261	39088	29352	28197	19590	14711

Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S1200



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SL12001

4.18							120	69101	866	293000	
4.89			*				102	71091	761	250000	
6.00							83	73904	645	198000	

SL12002

17.47				57	86204	517	28.6	106129	318	293000	
20.44				48.9	90358	463	24.5	111244	285	293000	
25.08		*		39.9	96078	401	19.9	114009	238	293000	68
29.34				34.1	98845	353	17.0	106273	190	250000	
36.00				27.8	80734	235	13.9	84241	123	198000	

SL12003

69.02	21.7	94108	214	14.5	106281	161	7.2	130847	99	293000	
80.74	18.6	110093	214	12.4	124333	161	6.2	134413	87	293000	
90.35	16.6	113692	198	11.1	128398	149	5.5	136718	79	293000	
99.07	15.1	115949	184	10.1	118870	126	5.0	124033	66	293000	
110.9	13.5	116752	165	9.0	119692	113	4.5	124892	59	293000	
122.6	12.2	120165	154	8.2	131499	112	4.1	143187	61	293000	45
143.5	10.5	109506	120	7.0	112264	82	3.5	121764	44.4	250000	
153.3	9.8	114796	118	6.5	117688	80	3.3	122800	41.9	293000	
188.1	8.0	120601	101	5.3	123639	69	2.7	129009	35.9	293000	
220.1	6.8	112418	80	4.5	116972	56	2.3	129902	30.9	250000	

SL12004

241.6	6.2	134358	87	4.1	142856	62	2.1	158647	34.4	293000	
282.6	5.3	137584	76	3.5	146286	54	1.8	162456	30.1	293000	
316.2	4.7	139944	70	3.2	148795	49.3	1.6	165242	27.4	293000	
366.9	4.1	143128	61	2.7	152181	43.4	1.4	169002	24.1	293000	
414.1	3.6	145770	55	2.4	154990	39.2	1.2	172123	21.8	293000	
463.4	3.2	148270	50	2.2	157648	35.6	1.1	175075	19.8	293000	
524.2	2.9	151062	45.3	1.9	160616	32.1	1.0	174027	17.4	293000	
542.1	2.8	151831	44.0	1.8	161434	31.2	0.92	179278	17.3	293000	
629.0	2.4	155285	38.8	1.6	165107	27.5	0.79	175984	14.6	293000	31
735.8	2.0	159014	33.9	1.4	169072	24.1	0.68	187761	13.4	293000	
778.1	1.9	133173	26.9	1.3	141596	19.1	0.64	157247	10.6	250000	
896.7	1.7	136061	23.8	1.1	144667	16.9	0.56	158567	9.3	250000	
952.8	1.6	137316	22.6	1.0	146001	16.0	0.52	162140	8.9	250000	
1100	1.4	140337	20.0	0.91	149213	14.2	0.45	165707	7.9	250000	
1296	1.2	110097	13.3	0.77	117061	9.5	0.39	130000	5.3	198000	
1350	1.1	110779	12.9	0.74	117786	9.1	0.37	130806	5.1	198000	
1620	0.93	113877	11.0	0.62	121079	7.8	0.31	134463	4.3	198000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

Wenden Sie sich an den Technischen Kundendienst Brevini

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10000
HOURS LIFE



S1200

i_{eff}	n_1 [rpm]									T_{2MAX} [Nm]	P_T [kW]
	1500			1000			500				
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]		

SC12003

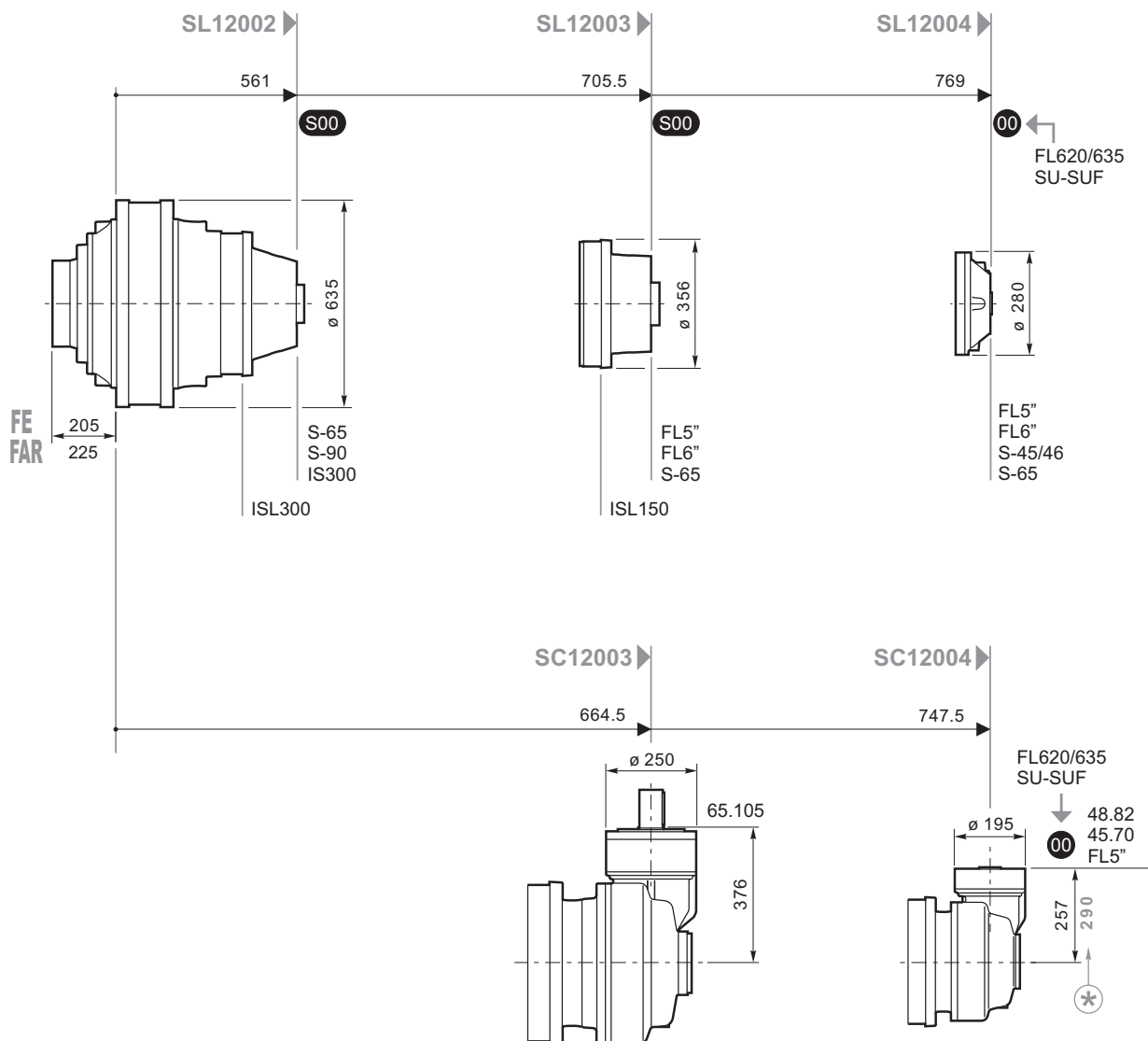
44.38	33.8	36196	128	22.5	40878	96	11.3	50327	59	293000	35
51.02	29.4	44586	137	19.6	50353	103	9.8	61992	64	293000	
63.70	23.5	51956	128	15.7	58676	96	7.8	72239	59	293000	
73.23	20.5	64000	137	13.7	72278	103	6.8	87992	63	198000	
79.67	18.8	46448	92	12.6	52456	69	6.3	64580	42.4	293000	
85.67	17.5	74871	137	11.7	84555	103	5.8	104099	64	250000	
114.4	13.1	66672	92	8.7	75296	69	4.4	90431	41.4	198000	
133.8	11.2	77996	92	7.5	87505	68	3.7	92210	36.1	198000	

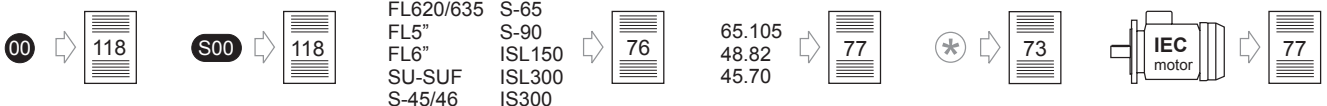
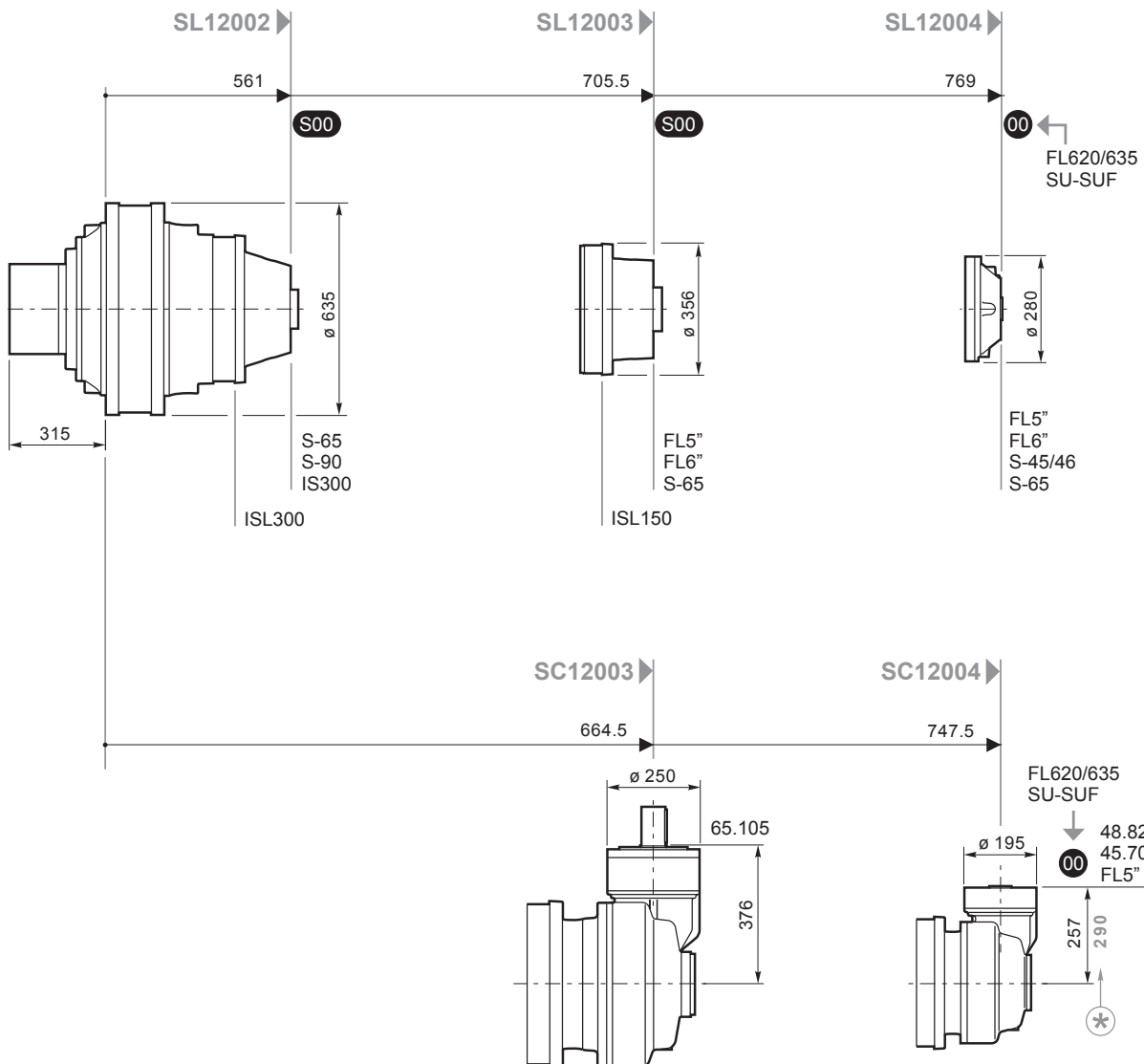
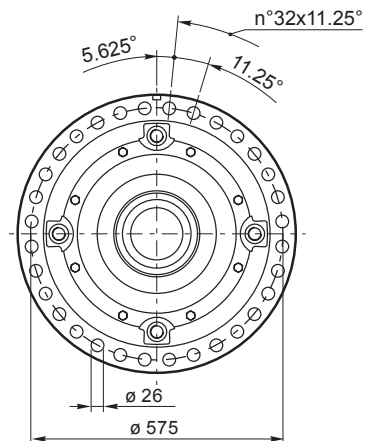
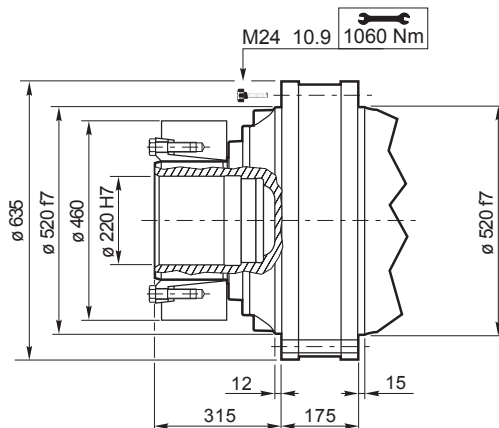
SC12004

222.0*	6.8	86521	61	4.5	97712	46.1	2.3	120298	28.4	250000	28
259.7*	5.8	101217	61	3.8	114309	46.1	1.9	133202	26.9	250000	
290.7*	5.2	113260	61	3.4	122001	44.0	1.7	135486	24.4	250000	
304.8*	4.9	118792	61	3.3	127356	43.7	1.6	132888	22.8	293000	
337.3*	4.4	131424	61	3.0	148424	46.1	1.5	166861	25.9	293000	
413.8*	3.6	126578	48.0	2.4	129766	32.8	1.2	135403	17.1	293000	
458.7	3.3	103033	35.3	2.2	108637	24.8	1.1	113356	12.9	293000	
517.3	2.9	128323	39.0	1.9	131555	26.6	0.97	137659	13.9	293000	
536.6	2.8	120534	35.3	1.9	127089	24.8	0.93	132610	12.9	293000	
658.4	2.3	130235	31.1	1.5	133515	21.2	0.76	142774	11.4	293000	
732.8	2.0	118349	25.4	1.4	133657	19.1	0.68	145107	10.4	293000	
770.2	1.9	132966	27.1	1.3	141376	19.2	0.65	157004	10.7	250000	
873.4	1.7	135520	24.4	1.1	144092	17.3	0.57	158310	9.5	250000	
1072	1.4	139779	20.5	0.93	148620	14.5	0.47	165048	8.1	250000	



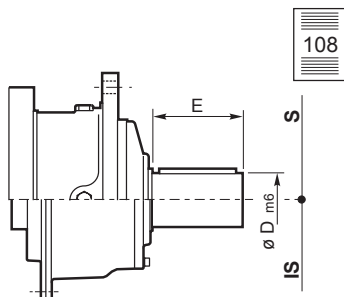
FE - FAR



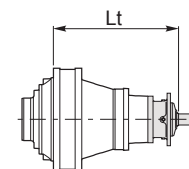


S1200

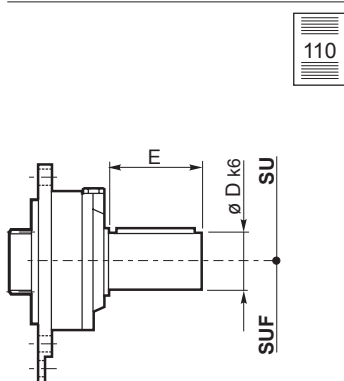
S-45/46, S-65, S-90, ISL150, ISL300, IS300



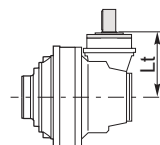
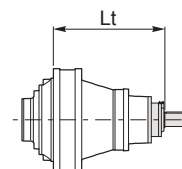
	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL150	ISL300	IS300
D m6	65	65	80	90	90	90	100
E	105	105	130	170	130	130	210
	Lt						
SL12002			753.5	759.5		618	739
SL12003			897.5		775.5		
SL12004	893	934	931.5				



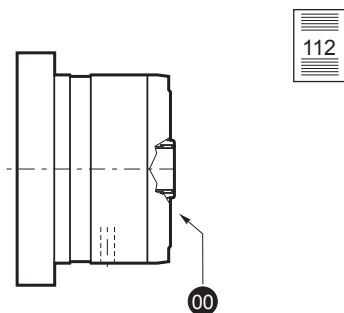
SU-SUF



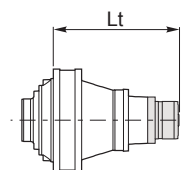
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
	Lt		
SL12004	826	826	826
SC12004	317-350*	317-350*	317-350*



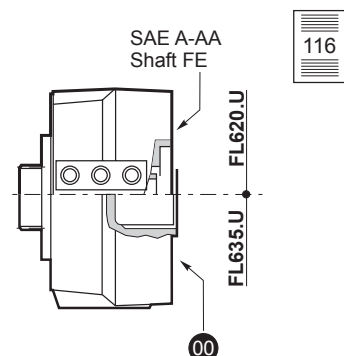
FL5", FL6"



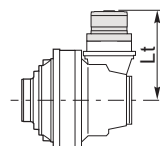
	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL12003	784.5	784.5	784.5	798	798	812
SL12004	870.5	870.5	870.5	884	884	898
SC12004	408.5-441.5*	408.5-441.5*	408.5-441.5*	422-455*	422-455*	



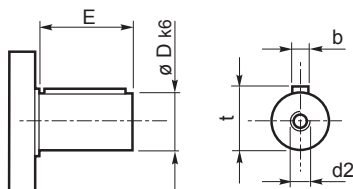
FL620/635



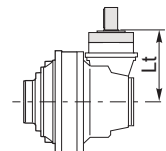
	FL620.U	FL635.U
	Lt	
SL12004	870.5	857.5
SC12004	361.5-394.5	384.5-381.5



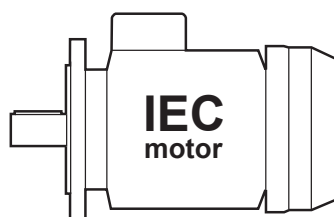
65.105, 48.82, 45.70



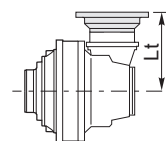
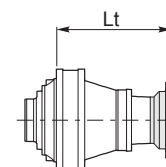
	65.105	48.82	45.70
Dk6	65 m6	48	45
E	105	82	70
b	18	14	14
t	69	51.5	48.5
d2	M20x42	M10x22	M10x22
	Lt		
SC12003	376		
SC12004		317	307



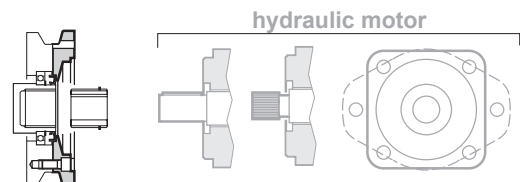
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt						
SL12004			861	872	872	902	932
SC12004				383-416*	383-416*	394-427*	424-457*



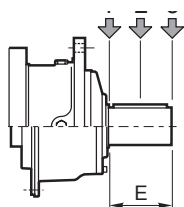
SAE J 744C, NEMA Adaptors



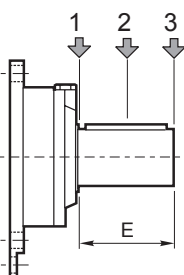
Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada

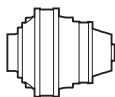


Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S1800



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		
SL18001											
4.18	*						120	95462	1196	390000	
4.89							102	98212	1052	354000	
6.00							83	102096	891	284000	
SL18002											
17.47	*			57	111413	668	28.6	137165	411	390000	75
20.44				48.9	122520	628	24.5	148268	380	354000	
23.91				41.8	128424	562	20.9	149702	328	354000	
29.34				34.1	136553	487	17.0	151592	271	354000	
36.00				27.8	112783	328.	13.9	118909	173	284000	
SL18003											
70.59	21.3	134034	298	14.2	151371	225	7.1	186360	138	390000	54
82.58	18.2	154298	294	12.1	174257	221	6.1	191895	122	390000	
91.98	16.3	159208	272	10.9	179801	205	5.4	195050	111	390000	
104.7	14.3	162452	244	9.6	183464	184	4.8	198896	100	390000	
112.9	13.3	154324	215	8.9	158211	147	4.4	165083	77	390000	
122.6	12.2	168189	215	8.2	187096	160	4.1	203725	87	390000	
143.5	10.5	156205	171	7.0	160139	117	3.5	173690	63	354000	
162.0	9.3	123329	120	6.2	126436	82	3.1	135546	43.8	284000	
184.6	8.1	159053	135	5.4	163058	93	2.7	170142	48.3	390000	
215.9	6.9	160172	117	4.6	166380	81	2.3	184770	44.8	354000	
SL18004											
288.0	5.2	196317	107	3.5	208734	76	1.7	231806	42.1	390000	38
320.8	4.7	199545	98	3.1	212166	69	1.6	235618	38.5	390000	
365.0	4.1	203479	88	2.7	216349	62.1	1.4	240264	34.5	390000	
417.0	3.6	207622	78	2.4	219397	55.1	1.2	230314	28.9	390000	
464.5	3.2	211036	71	2.2	220853	49.8	1.1	234101	26.4	390000	
519.8	2.9	214655	65	1.9	228231	46.0	1.0	253460	25.5	390000	
571.4	2.6	217755	59.9	1.7	223678	41.0	0.87	241554	22.1	390000	
619.1	2.4	220407	55.9	1.6	234347	39.6	0.81	260252	22.0	390000	
725.5	2.1	225758	48.9	1.4	240038	34.7	0.69	265630	19.2	390000	
778.3	1.9	228172	46.1	1.3	242603	32.6	0.64	269421	18.1	390000	
912.1	1.6	233712	40.3	1.1	248494	28.5	0.55	269387	15.5	390000	
1041	1.4	205734	31.0	1.0	210916	21.2	0.48	220078	11.1	390000	
1067	1.4	226703	33.4	0.94	239056	23.5	0.47	265481	13.0	390000	
1309	1.1	208643	25.0	0.76	213898	17.1	0.38	223190	8.9	390000	
1409	1.1	159231	17.7	0.71	169302	12.6	0.35	188017	7.0	284000	
1531	1.0	210444	21.6	0.65	223754	15.3	0.33	248487	8.5	354000	
1879	0.80	213738	17.9	0.53	227256	12.7	0.27	252377	7.0	354000	
2305	0.65	171533	11.7	0.43	182382	8.3	0.22	202542	4.6	284000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

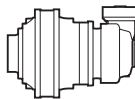
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

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HOURS LIFE



S1800

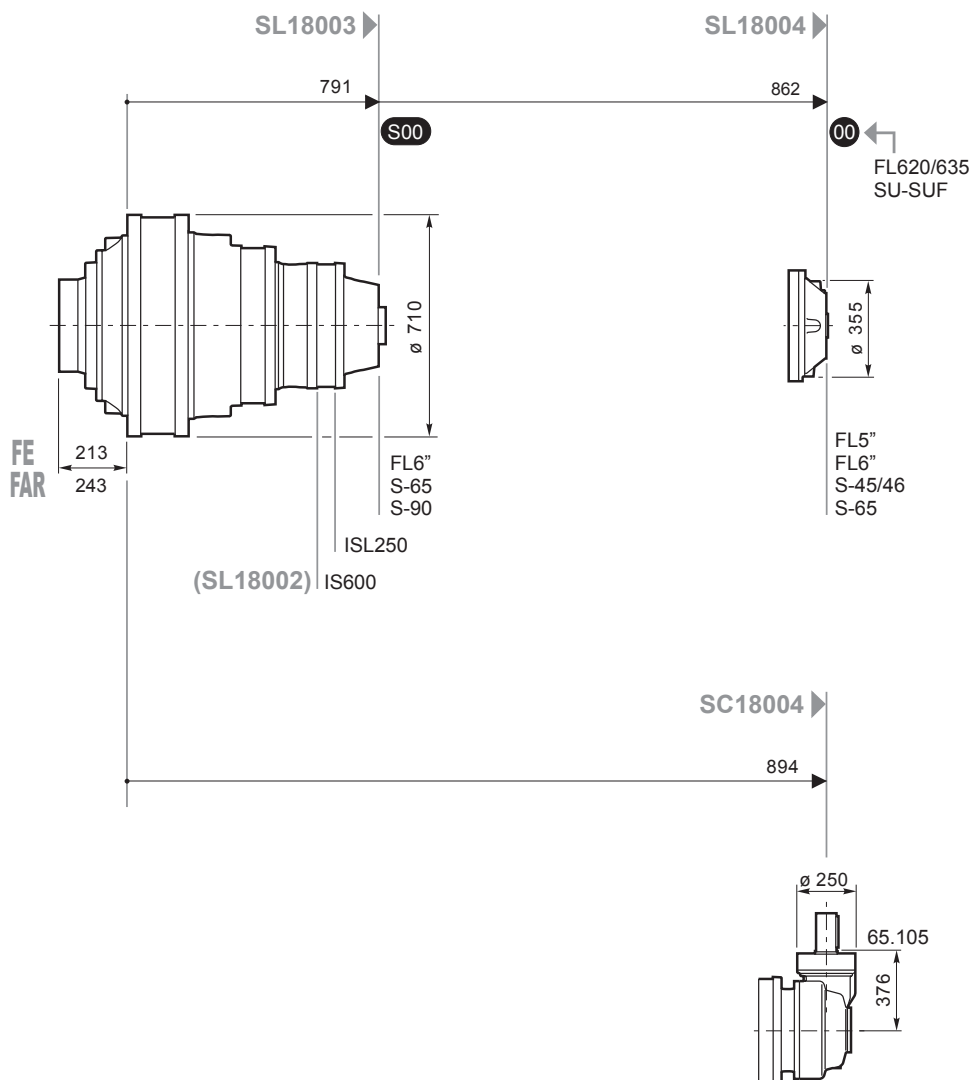
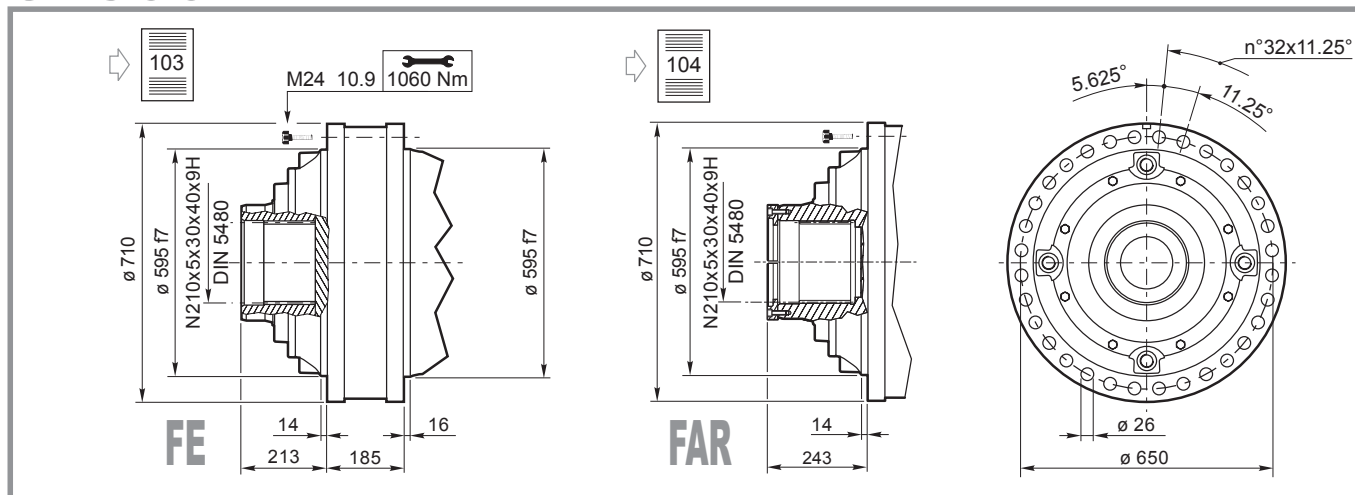
i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SC18004

179.3	8.4	146232	128	5.6	165146	96	2.8	203320	59	390000	30
206.1	7.3	180128	137	4.9	198435	101	2.4	220369	56	390000	
233.6	6.4	190201	128	4.3	202231	91	2.1	220933	49.5	390000	
261.2	5.7	191516	115	3.8	205674	82	1.9	228409	45.8	390000	
268.6	5.6	194255	114	3.7	206541	81	1.9	222831	43.4	390000	
311.5	4.8	198660	100	3.2	211226	71	1.6	224867	37.8	390000	
358.5	4.2	202930	89	2.8	215766	63	1.4	239615	35.0	390000	
358.5	4.2	202930	89	2.8	215766	63	1.4	239615	35.0	390000	
419.4	3.6	207804	78	2.4	219474	55	1.2	230515	28.8	390000	
439.3	3.4	195127	70	2.3	200042	47.7	1.1	208731	24.9	390000	
478.0	3.1	211956	70	2.1	225361	49.4	1.0	250273	27.4	390000	
559.2	2.7	217045	61	1.8	223382	41.8	0.89	240767	22.5	390000	
654.2	2.3	185046	44.4	1.5	196750	31.5	0.76	218498	17.5	354000	
686.0	2.2	200536	45.9	1.5	205587	31.4	0.73	214518	16.4	390000	
802.7	1.9	190861	37.3	1.2	202933	26.5	0.62	221918	14.5	354000	
984.7	1.5	196851	31.4	1.0	209302	22.3	0.51	228883	12.2	354000	
1208	1.2	155564	20.2	0.83	165404	14.3	0.41	183687	8.0	284000	

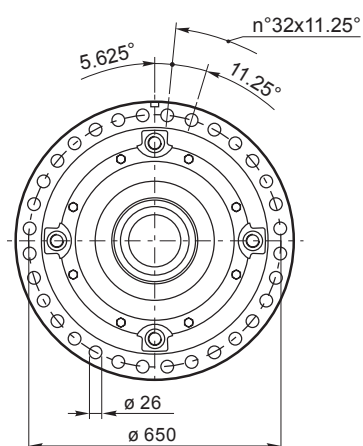
S1800

FE - FAR



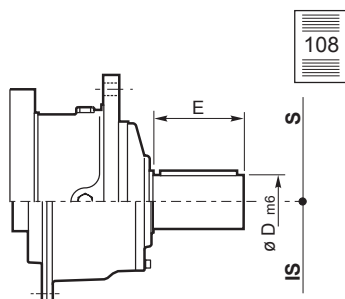
FL620/635
FL5"
FL6"
SU-SUF



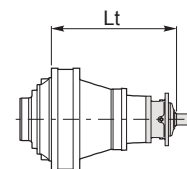


S1800

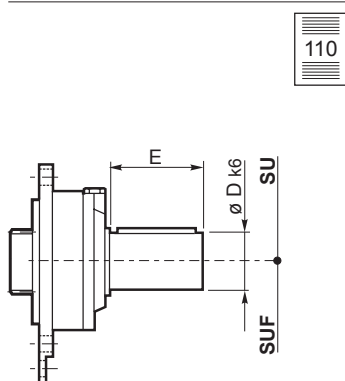
S-45/46, S-65, S-90, ISL250, IS600



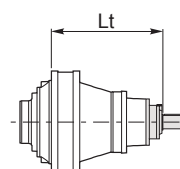
	S-45CR1	S-46C1	S-65CR1	S-90CR1	ISL250	IS600
D m6	65	65	80	90	90	110
E	105	105	130	170	130	210
	Lt					
SL18002						805
SL18003			983.5	989.5	861	
SL18004	992	1033	1031			



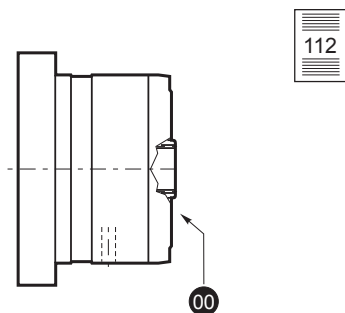
SU-SUF



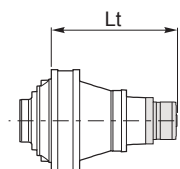
	SU/SUF.1	SU/SUF.2	SU/SUF.3
D m6	28	40	48
E	50	58	82
	Lt		
SL18004	922	922	922



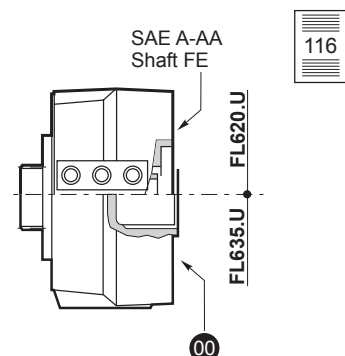
FL5", FL6"



	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL18003						911
SL18004	962	962	962	975.5	975.5	989.5

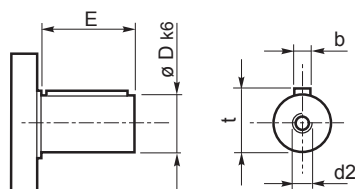


FL620/635

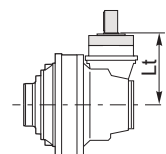


	FL620.U	FL635.U
	Lt	
SL18004	966.5	953.5

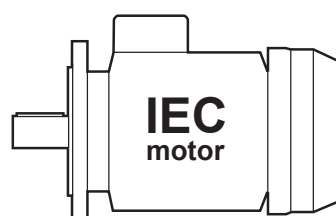
65.105



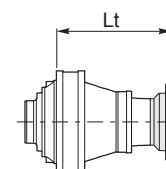
	65.105
Dk6	65 m6
E	105
b	18
t	69
d2	M20x42
	Lt
SC18004	376



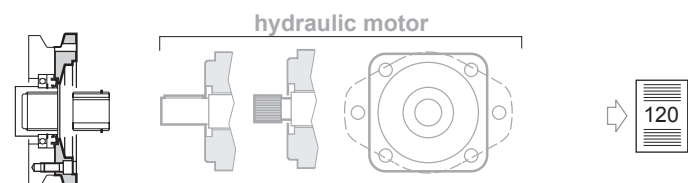
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt						
SL18004			957	962	962	1001	1029



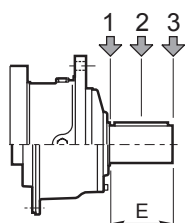
SAE J 744C, NEMA Adaptors



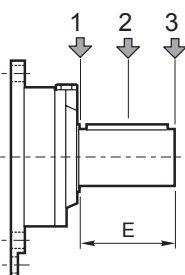
Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada

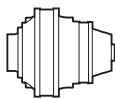


Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-45CR1	105	10000	6000	4000	5000	3000	2000
S-46C1	105	14000	8800	6400	7000	4400	3200
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL250	130	7631	4302	2995	3824	2156	1501
IS600	210	54366	36909	26346	27248	18498	13204



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
SU1/SUF1	50	3000	2000	1500	1400	1000	700
SU2/SUF2	58	3000	2000	1500	1400	1000	700
SU3/SUF3	82	3000	1700	1200	1400	800	600

S2500



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HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SL25001

4.18							120	142542	1786	570000	
4.89			*				102	146649	1570	487000	
6.00							83	147340	1286	386000	

SL25002

17.47							28.6	179560	538	570000	
20.44							24.5	203328	521	487000	
23.91			*				20.9	205295	450	487000	100
29.34							17.0	207887	371	487000	
36.00							13.9	164459	239	386000	

SL25003

70.59				14.2	221727	329	7.1	259215	192	570000	
82.58				12.1	212290	269	6.1	221512	140	487000	
89.46				11.2	238059	279	5.6	266789	156	570000	
104.8				9.5	249660	249	4.8	273266	136	570000	
112.9		*		8.9	221446	205	4.4	231065	107	570000	
128.6				7.8	239305	195	3.9	249701	102	570000	70
143.5				7.0	219608	160	3.5	238191	87	487000	
162.0				6.2	172847	112	3.1	185302	60	386000	
184.6				5.4	228231	129	2.7	238146	68	570000	
215.9				4.6	228166	111	2.3	253386	61	487000	

SL25004

278.8	5.4	268334	151	3.6	285306	107	1.8	316843	59	570000	
326.2	4.6	274777	132	3.1	292157	94	1.5	314783	51	570000	
365.0	4.1	279490	120	2.7	297168	85	1.4	316961	45.5	570000	
417.8	3.6	285266	107	2.4	303309	76	1.2	321595	40.3	570000	
471.8	3.2	290550	97	2.1	308927	69	1.1	343075	38.1	570000	
495.5	3.0	292713	93	2.0	309515	65	1.0	329991	34.9	570000	
551.9	2.7	297527	85	1.8	311569	59	0.91	335417	31.8	570000	
629.0	2.4	303472	76	1.6	322666	54	0.79	358333	29.8	570000	
735.8	2.0	309326	66	1.4	317117	45.1	0.68	350335	24.9	570000	50
786.3	1.9	313890	63	1.3	333744	44.5	0.64	370634	24.7	570000	
919.8	1.6	313589	54	1.1	326294	37.1	0.54	362362	20.6	570000	
990.2	1.5	270183	42.9	1.0	287271	30.4	0.50	319025	16.9	487000	
1128	1.3	309005	43.0	0.89	316787	29.4	0.44	330548	15.3	570000	
1296	1.2	281396	34.1	0.77	299193	24.2	0.39	332265	13.4	487000	
1384	1.1	251916	28.6	0.72	265868	20.1	0.36	295256	11.2	570000	
1620	0.93	291055	28.2	0.62	309465	20.0	0.31	343672	11.1	487000	
1987	0.75	229293	18.1	0.50	243795	12.8	0.25	270744	7.1	386000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

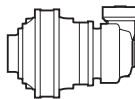
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

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S2500

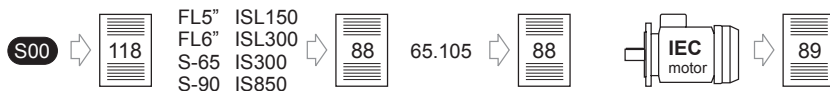
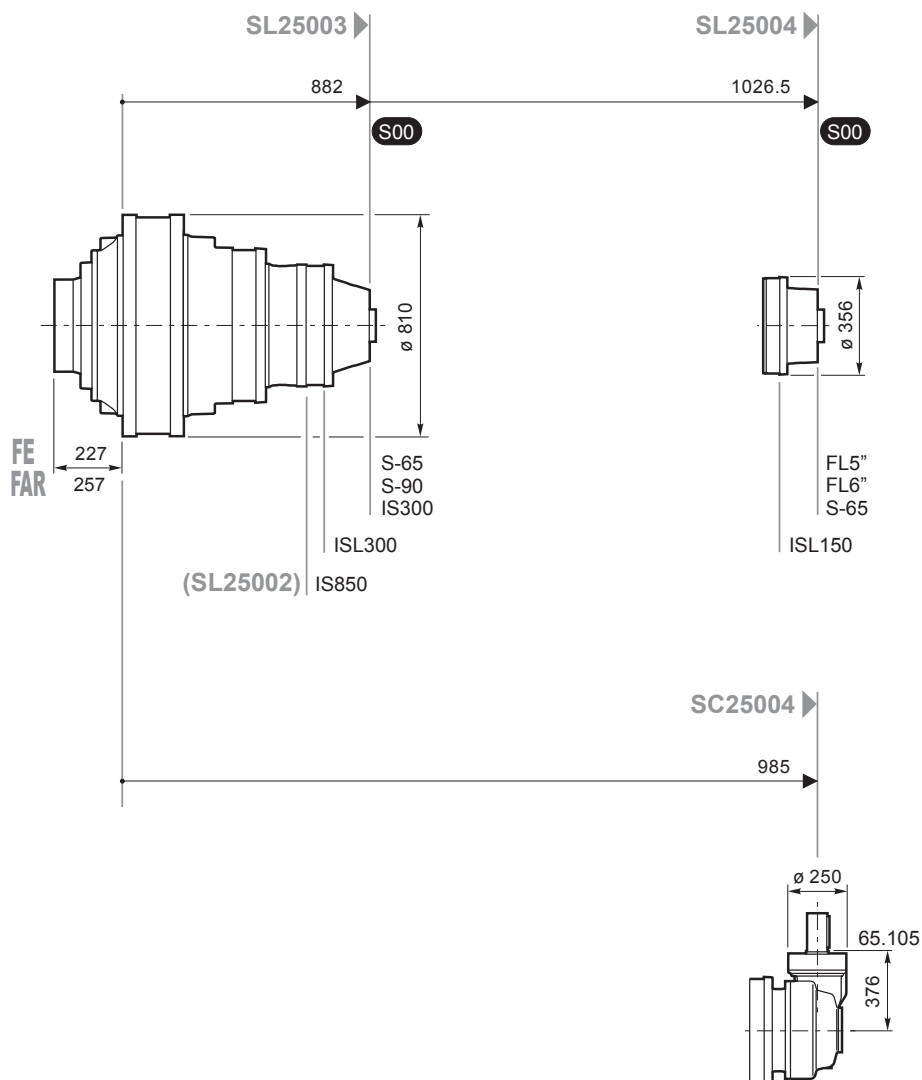
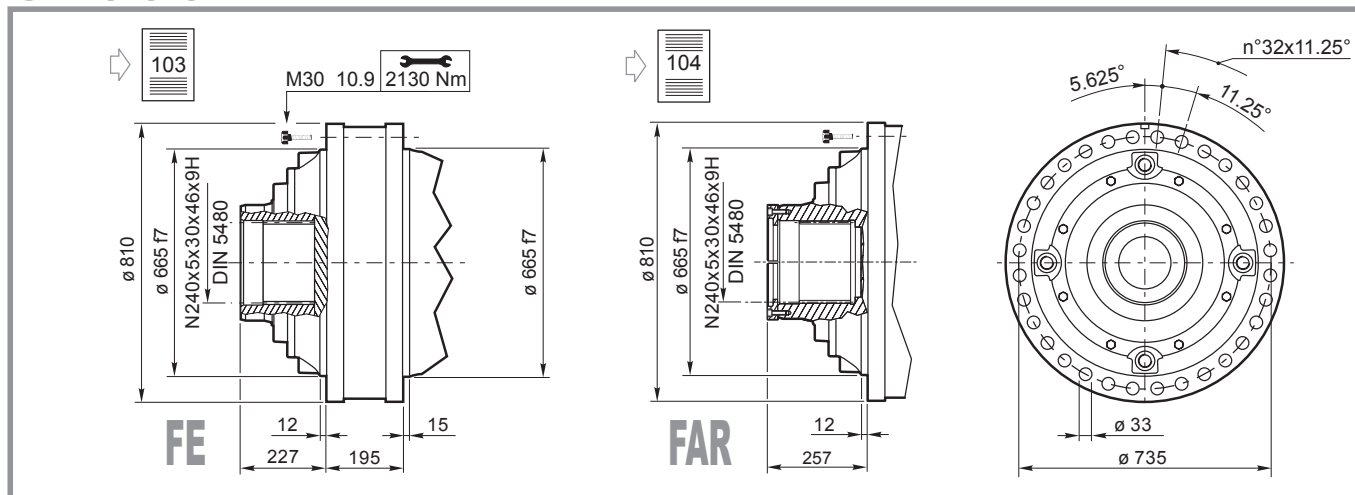
i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

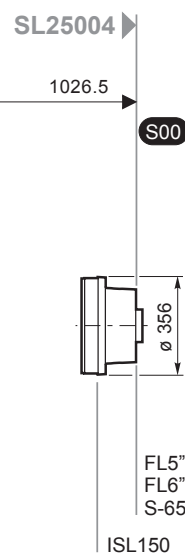
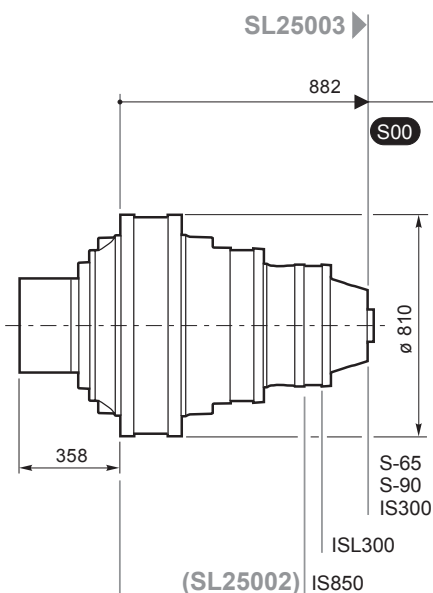
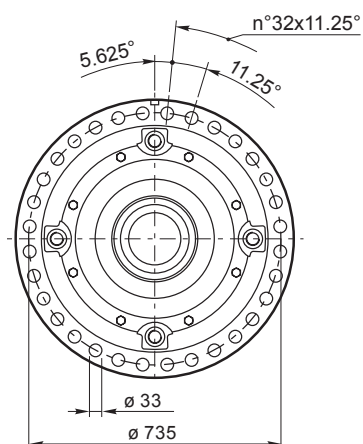
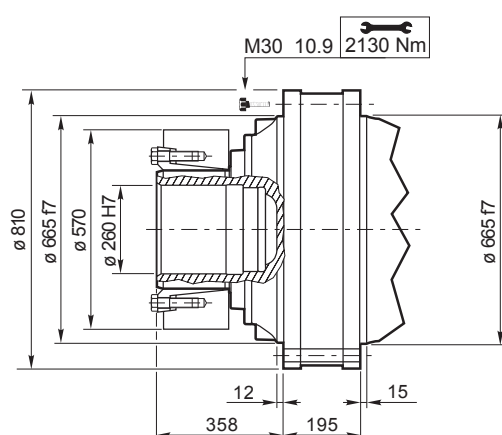
SC25004

179.3	8.4	146232	128	5.6	165147	96	2.8	203320	59	570000	40
206.1	7.3	180129	137	4.9	203428	103	2.4	250449	64	570000	
229.6	6.5	200639	137	4.4	226590	103	2.2	278966	64	570000	
261.2	5.7	228282	137	3.8	257810	103	1.9	313733	63	570000	
268.6	5.6	234718	137	3.7	265079	103	1.9	311053	61	570000	
306.1	4.9	267518	137	3.3	289365	99	1.6	321350	55	570000	
358.1	4.2	278687	122	2.8	296313	87	1.4	316591	46.3	570000	
382.1	3.9	281434	116	2.6	296429	81	1.3	309306	42.4	570000	
439.3	3.4	287433	103	2.3	298975	71	1.1	311962	37.2	570000	
478.0	3.1	278687	92	2.1	309546	68	1.0	343763	37.7	570000	
559.2	2.7	298124	84	1.8	311822	58	0.89	336090	31.5	570000	
654.2	2.3	253764	61	1.5	269815	43.2	0.76	299639	24.0	487000	
686.0	2.2	299715	69	1.5	307263	46.9	0.73	320611	24.5	570000	
802.7	1.9	261739	51	1.2	278294	36.3	0.62	309056	20.2	487000	
984.7	1.5	269954	43.1	1.0	287028	30.5	0.51	318755	16.9	487000	
1208	1.2	212669	27.6	0.83	226120	19.6	0.41	251114	10.9	386000	

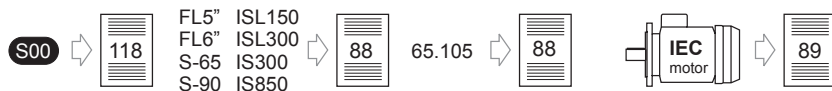
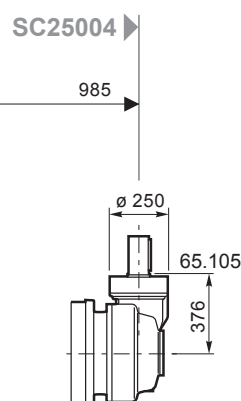
S2500

FE - FAR



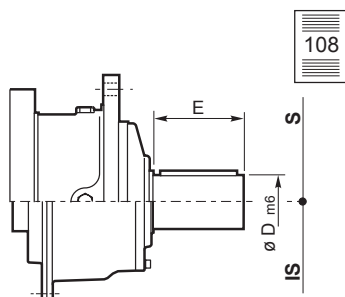


(SL25002) IS850



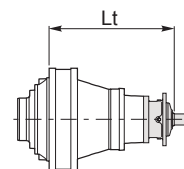
S2500

S-65, S-90, ISL150, ISL300, IS300, IS850



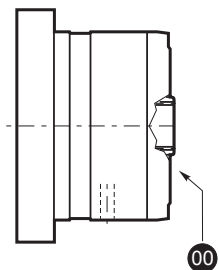
108

	S-65CR1	S-90CR1	ISL150	ISL300	IS300	IS850
D m6	80	90	90	90	100	110
E	130	170	130	130	210	210
	Lt					
SL25002						919
SL25003	1074.5	1080.5		952	1060	
SL25004	1218.5		1096.5			

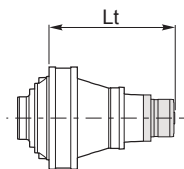


FL5", FL6"

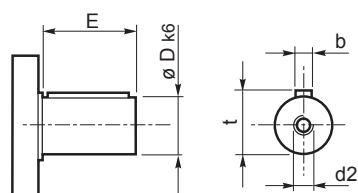
112



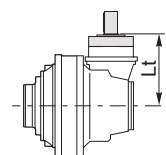
	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL25004	1105.5	1105.5	1105.5	1119	1119	1133



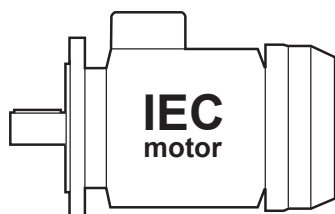
65.105



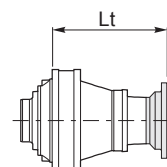
	63.105
Dk6	65 m6
E	105
b	18
t	69
d2	M20x42
	Lt
SC25004	966.5



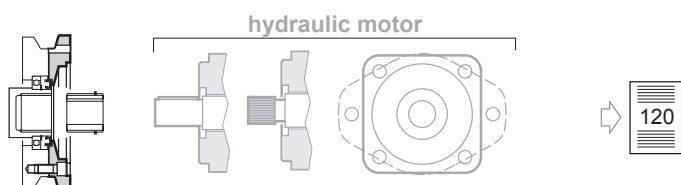
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt						
SL25004				1101.5	1101.5	1101.5	1131.5



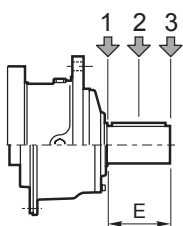
SAE J 744C, NEMA Adaptors



Carichi radiali sugli alberi entrata
Radial loads on input shafts

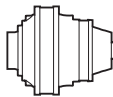
Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484
IS850	210	56261	39088	29352	28197	19590	14711

S3500



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HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

SL35001

4.18							120	186583	2337	810000	
4.89			*				102	191960	2055	694000	
6.00							83	199552	1741	551000	

SL35002

17.47							28.6	286564	859	810000	
20.44							24.5	297161	761	810000	
23.91			*				20.9	292706	641	694000	115
29.34							17.0	296403	529	694000	
36.00							13.9	234491	341	551000	

SL35003

73.04				13.7	354321	508	6.8	369712	265	810000	
104.8				9.5	362265	362	4.8	388938	194	810000	
116.9				8.6	309209	277	4.3	329262	147	694000	
122.6		*		8.2	365768	312	4.1	398278	170	810000	82
143.5				7.0	313114	229	3.5	339610	124	694000	
176.0				5.7	317068	189	2.8	350282	104	694000	
216.0				4.6	250840	122	2.3	275961	67	551000	

SL35004

288.5	5.2	383892	209	3.5	408173	148	1.7	453292	82	810000	
322.8	4.6	390476	190	3.1	415173	135	1.5	461065	75	810000	
369.6	4.1	398545	169	2.7	423753	120	1.4	470593	67	810000	
414.1	3.6	405464	154	2.4	431110	109	1.2	478764	61	810000	
463.4	3.2	412418	140	2.2	438503	99	1.1	486975	55	810000	
512.6	2.9	418771	128	2.0	445257	91	0.98	494475	51	810000	
542.1	2.8	422322	122	1.8	449033	87	0.92	498667	48.2	810000	
640.8	2.3	433146	106	1.6	460542	75	0.78	511449	41.8	810000	60
735.8	2.0	442303	94	1.4	470278	67	0.68	522262	37.2	810000	
786.3	1.9	446758	89	1.3	475015	63	0.64	527522	35.1	810000	
919.8	1.6	457486	78	1.1	486422	55	0.54	540190	30.8	810000	
954.7	1.6	292619	48.1	1.0	311127	34.1	0.52	345519	18.9	551000	
1076	1.4	390096	57	0.93	414770	40.4	0.46	460616	22.4	694000	
1296	1.2	306464	37.1	0.77	325848	26.3	0.39	361866	14.6	551000	
1620	0.93	316984	30.7	0.62	337033	21.8	0.31	374289	12.1	551000	

(*)

Consultare il Servizio Tecnico Brevini

Please consult Brevini

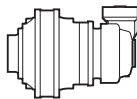
Wenden Sie sich an den Technischen Kundendienst Brevini

Consulter le service technique Brevini

Contacte con el Servicio Técnico de Brevini

Consultar o Serviço Técnico da Brevini

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HOURS LIFE



S3500

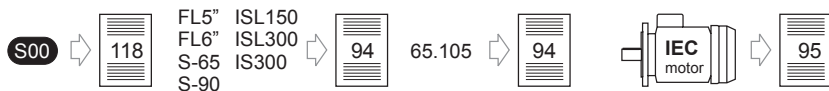
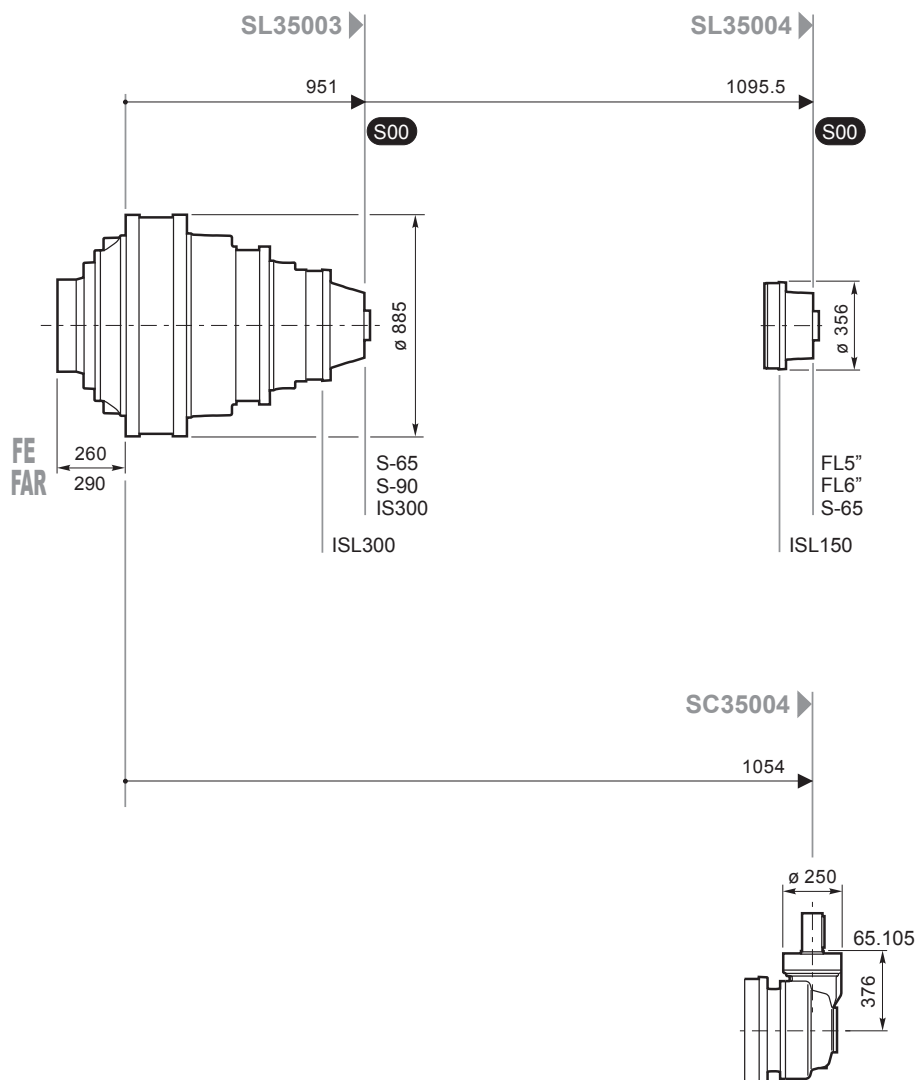
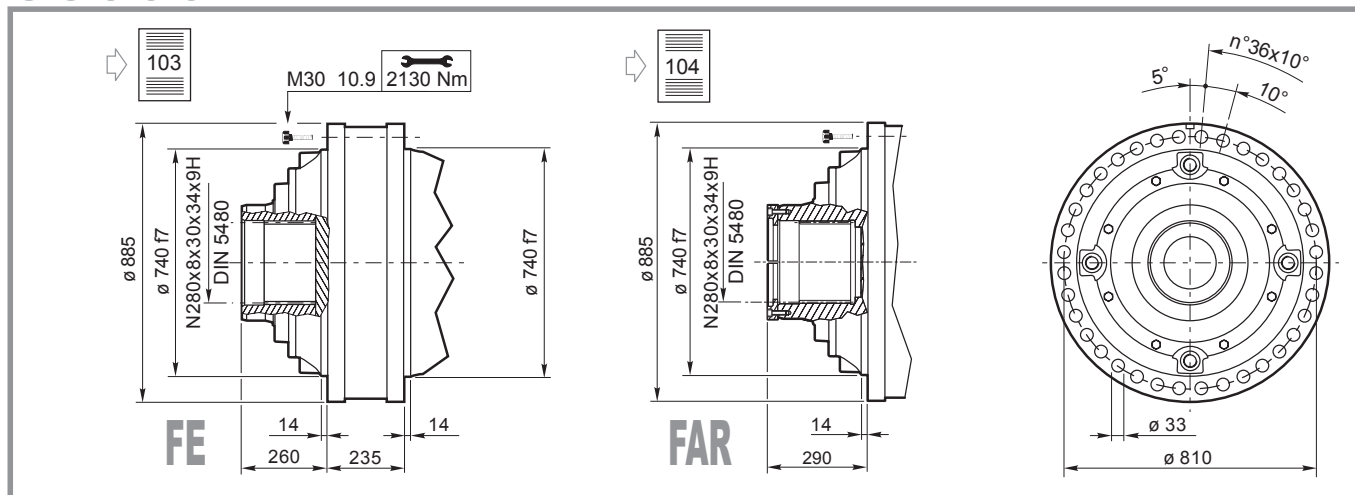
i_{eff}	n_1 [rpm]									T_{2MAX} [Nm]	P_T [kW]
	1500			1000			500				
	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]	n_2 [rpm]	T_2 [Nm]	P_2 [kW]		

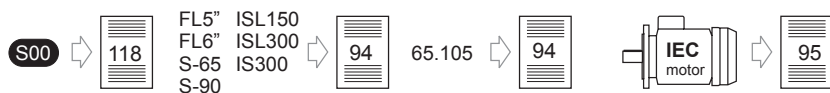
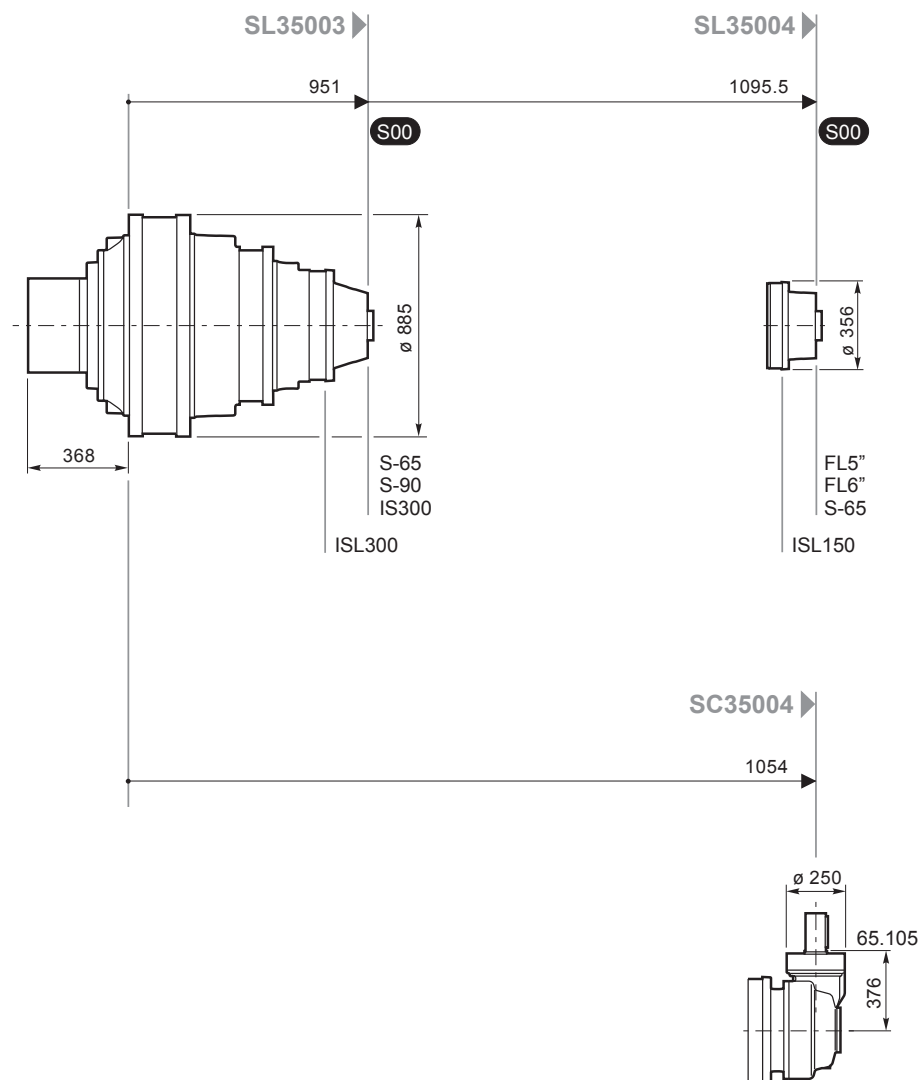
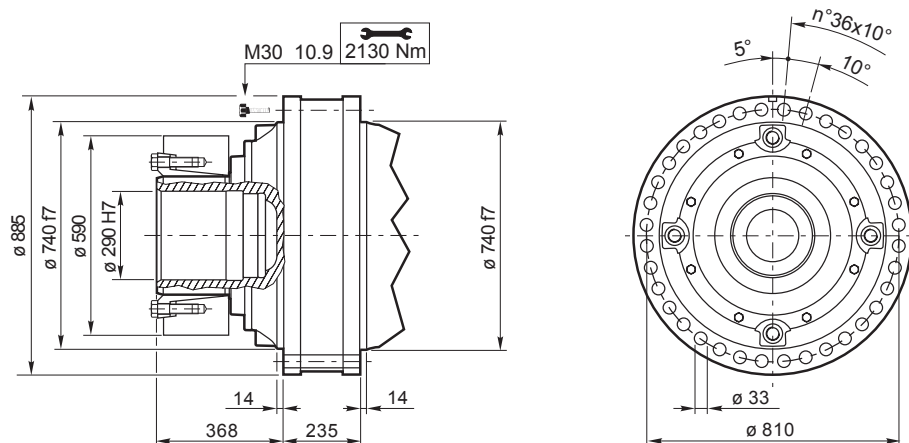
SC35004

185.5	8.1	151300	128	5.4	170869	96	2.7	210366	59	810000	40
213.3	7.0	186370	137	4.7	210478	103	2.3	259129	64	810000	
249.5	6.0	218027	137	4.0	246228	103	2.0	303143	64	810000	
291.9	5.1	255062	137	3.4	288052	103	1.7	354634	64	810000	
306.1	4.9	267519	137	3.3	302121	103	1.6	367806	63	810000	
358.1	4.2	312959	137	2.8	351183	103	1.4	390002	57	694000	
418.9	3.6	338224	127	2.4	359616	90	1.2	399367	49.9	694000	
439.4	3.4	351543	126	2.3	360397	86	1.1	376053	44.8	810000	
514.0	2.9	348853	107	1.9	370918	76	0.97	411918	42.0	694000	
559.2	2.7	326025	92	1.8	368193	69	0.89	417204	39.1	694000	
654.2	2.3	361814	87	1.5	384698	62	0.76	427221	34.2	694000	
686.2	2.2	361289	83	1.5	370388	57	0.73	397550	30.3	810000	
802.7	1.9	373185	73	1.2	396788	52	0.62	440647	28.7	694000	
985.0	1.5	294003	46.9	1.0	312598	33.2	0.51	347152	18.5	551000	

S3500

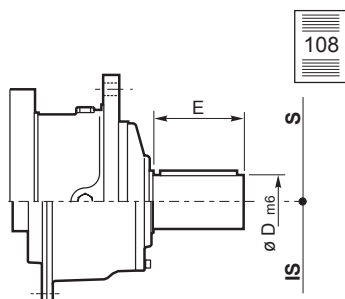
FE - FAR





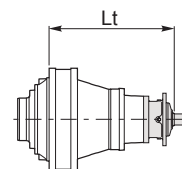
S3500

S-65, S-90, ISL150, ISL300, IS300

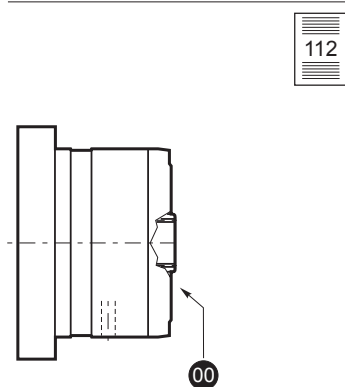


108

	S-65CR1	S-90CR1	ISL150	ISL300	IS300
D m6	80	90	90	90	100
E	130	170	130	130	210
	Lt				
SL35003	1143.5	1149.5		1021	1129
SL35004	1287.5		1165.5		

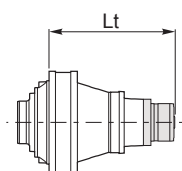


FL5", FL6"

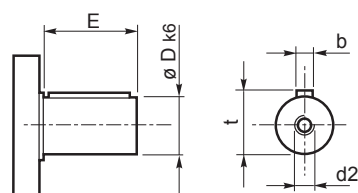


112

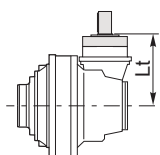
	FL250.4C FL250.6C	FL350.6C FL350.8C	FL450.6C FL450.8C	FL650.10C FL650.12C FL650.14C	FL750.10C FL750.12C FL750.14C	FL960.12C FL960.14C FL960.16C FL960.18C
	Lt					
SL35004	1174.5	1174.5	1174.5	1188	1188	1202



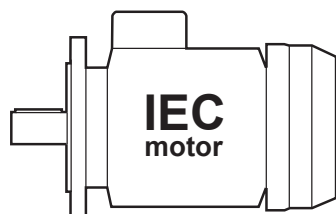
65.105



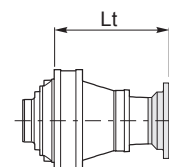
	63.105
Dk6	65 m6
E	105
b	18
t	69
d2	M20x42
	Lt
SC35004	378



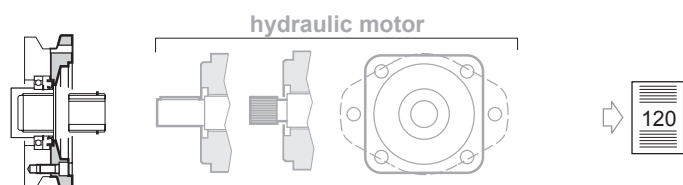
PAM IEC



	IEC80-90	IEC100-112	IEC132	IEC160	IEC180	IEC200	IEC225
	Lt						
SL35004					1170.5	1170.5	1200.5



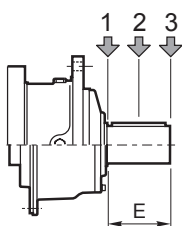
SAE J 744C, NEMA Adaptors



Carichi radiali sugli alberi entrata
Radial loads on input shafts

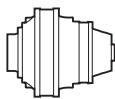
Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL150	130	7631	4302	2995	3824	2156	1501
ISL300	130	7631	4302	2995	3824	2156	1501
IS300	210	48814	33068	22914	24465	16573	11484

S5000



10000
HOURS LIFE

i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		

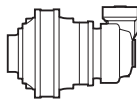
SL50003

76.01	19.7	428141	887	13.2	484649	668	6.6	511731	352	1100000	100
88.92	16.9	471922	834	11.2	492649	580	5.6	522649	308	1100000	
104.0	14.4	483882	731	9.6	498202	502	4.8	536721	270	1100000	
109.1	13.7	458962	661	9.2	499894	480	4.6	541061	260	1100000	
120.8	12.4	413737	538	8.3	426013	369	4.1	457258	198	1100000	
127.6	11.8	491094	604	7.8	505477	415	3.9	555554	228	1100000	
148.2	10.1	419915	445	6.7	432262	306	3.4	473447	167	1100000	
156.6	9.6	474948	476	6.4	490609	328	3.2	517256	173	1100000	
181.8	8.3	426125	368	5.5	438558	253	2.8	490129	141	1100000	

SL50004

307.1	4.9	535259	274	3.3	573053	195	1.6	609705	104	1100000	75
342.0	4.4	545094	250	2.9	583487	179	1.5	617925	95	1100000	
389.1	3.9	557071	225	2.6	596196	160	1.3	627896	84	1100000	
400.1	3.7	559680	220	2.5	598965	157	1.2	630063	82	1100000	
420.2	3.6	564309	211	2.4	602363	150	1.2	633902	79	1100000	
468.1	3.2	574604	193	2.1	603811	135	1.1	642416	72	1100000	
490.9	3.1	579208	185	2.0	604451	129	1.0	646215	69	1100000	
515.6	2.9	583978	178	1.9	605109	123	0.97	650143	66	1100000	
558.6	2.7	591835	166	1.8	606183	114	0.90	656599	62	1100000	
598.6	2.5	497885	131	1.7	532956	93	0.84	598047	52	1100000	
653.5	2.4	602846	145	1.6	614426	98	0.79	669425	54	1100000	
704.7	2.1	533003	119	1.4	548979	82	0.71	595167	44	1100000	
803.0	1.9	605612	118	1.2	630329	82	0.62	686619	45	1100000	
939.3	1.6	611187	102	1.1	642687	72	0.53	699983	39	1100000	
1091	1.4	550531	79	0.92	588884	57	0.46	660106	32	1100000	
1153	1.3	552424	75	0.87	574624	52	0.43	648065	29	1100000	
1338	1.1	569590	67	0.75	609137	47	0.37	682586	27	1100000	

10000
HOURS LIFE

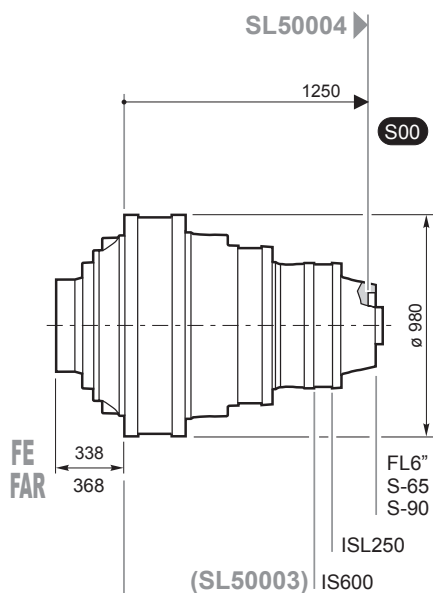
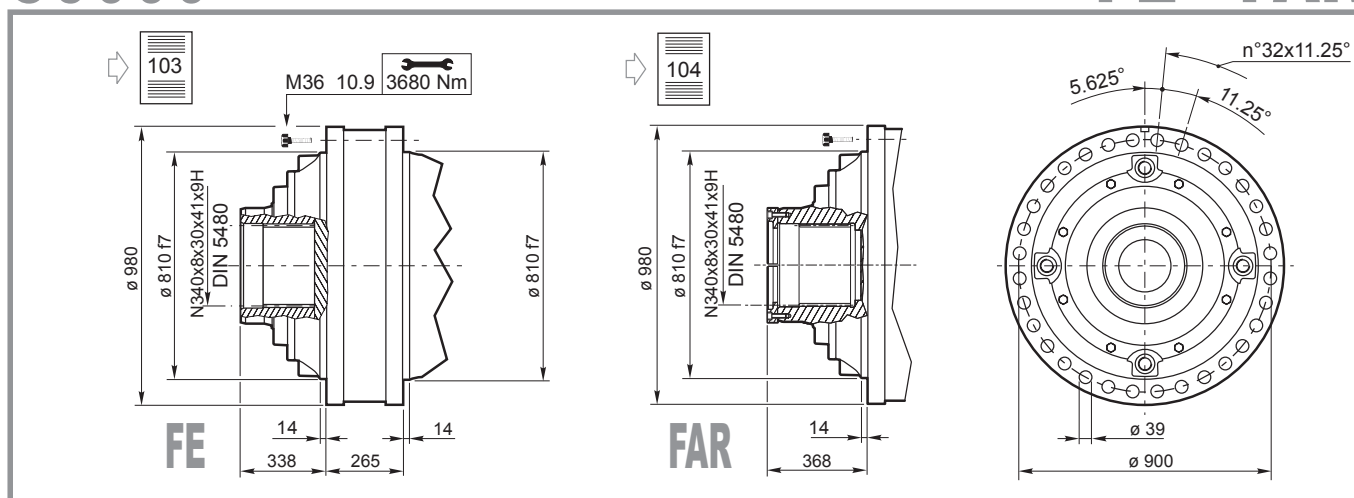


S5000

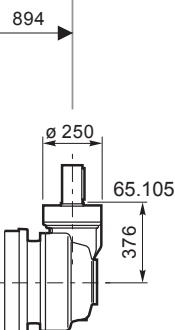
i _{eff}	n ₁ [rpm]									T _{2MAX} [Nm]	P _T [kW]
	1500			1000			500				
	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]	n ₂ [rpm]	T ₂ [Nm]	P ₂ [kW]		
SC50005											
779.9	1.9	605221	122							1100000	50
912.4	1.6	608980	105							1100000	
1050	1.4	619616	93							1100000	
1156	1.3	627152	85							1100000	
1310	1.1	636900	76							1100000	
1459	1.0	645451	70							1100000	

S5000

FE - FAR



SC50005

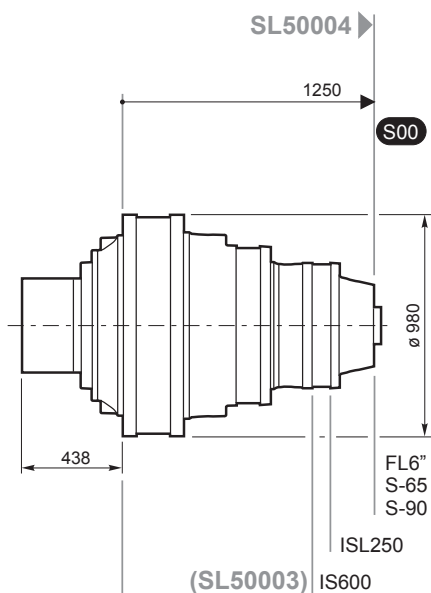
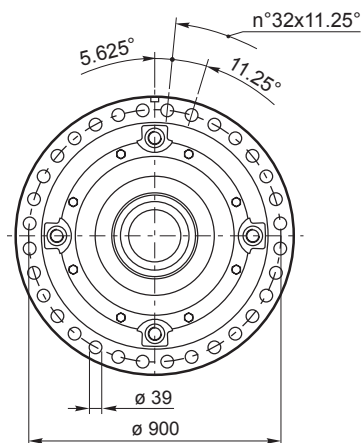
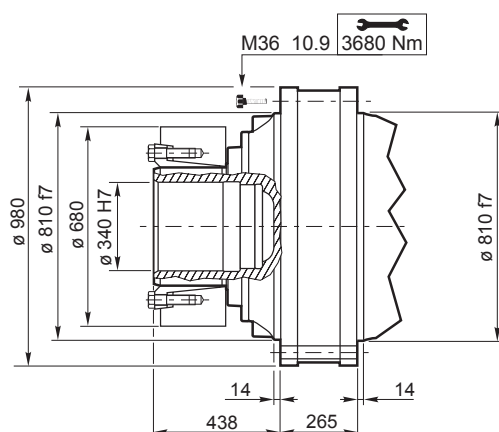


FL6"
S-65
S-90
ISL250
IS600



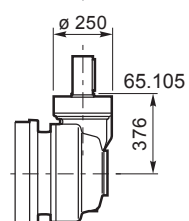
65.105





SC50005

1353



FL6"
S-65
S-90
ISL250
IS600

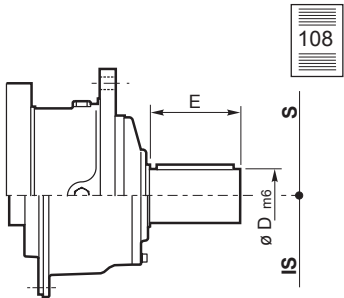


65.105

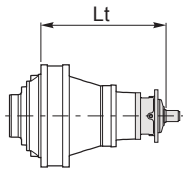


S5000

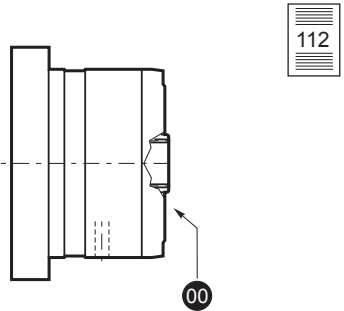
S-65, S-90, ISL250, IS600



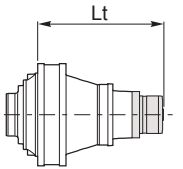
	S-65CR1	S-90CR1	ISL250	IS600
D m6	80	90	90	110
E	130	170	130	210
	Lt			
SL50003				1264
SL50004	1443	1449	1320	



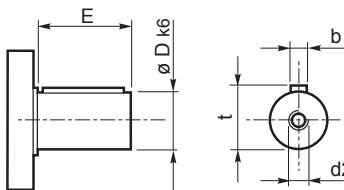
FL6”



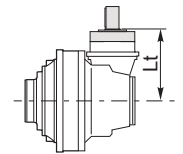
	FL960.12C - FL960.14C - FL960.16C - FL960.18C
	Lt
SL50004	1370



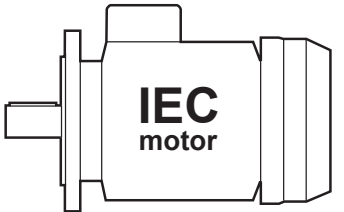
65.105



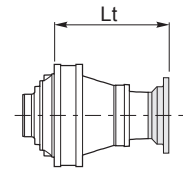
	65.105
Dk6	65 m6
E	105
b	18
t	69
d2	M20x42
	Lt
SC50005	376



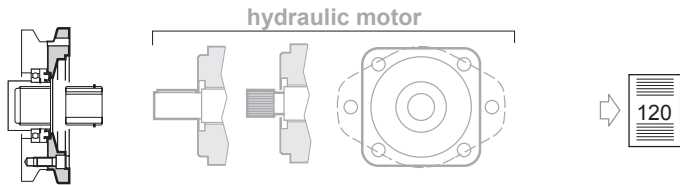
PAM IEC



	IEC280
	Lt
SL50004	1355



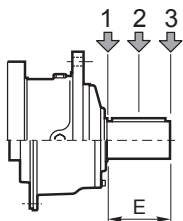
SAE J 744C, NEMA Adaptors



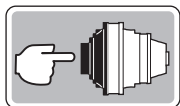
Carichi radiali sugli alberi entrata
Radial loads on input shafts

Radiallasten auf den Antriebswellen
Charges radiales sur les arbres d'entrée

Cargas sobre los ejes de entrada
Cargas radiais nos eixos de entrada



Type	E	Fr [N]					
		$n_1 \cdot h = 10^7$			$n_1 \cdot h = 10^8$		
		1	2	3	1	2	3
S-65CR1	130	23800	15500	9600	11900	7800	4800
S-90CR1	170	29700	17000	10000	14800	8500	5000
ISL250	130	7631	4302	2995	3824	2156	1501
IS600	210	54366	36909	26346	27248	18498	13204



5. USCITE - ENTRATE

5. OUTPUT - INPUT

5. ANTRIEBE - ABTRIEBE

FE

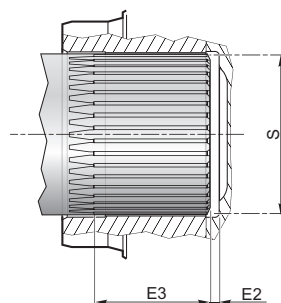
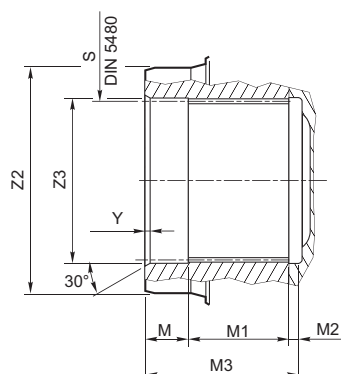
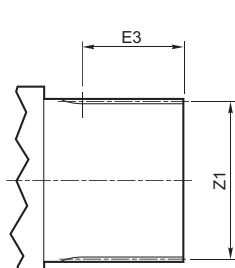
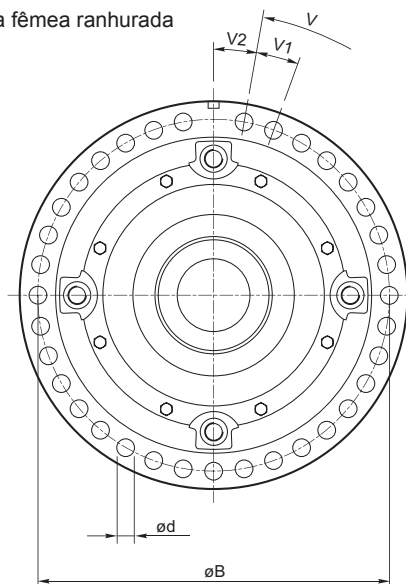
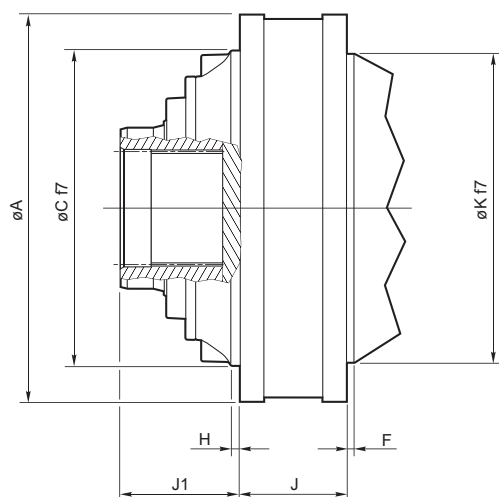
Uscita femmina scanalata
Splined female output
Hohlwellenabtrieb mit Keilnut

5. SORTIES - ENTRÉES

5. SALIDAS - ENTRADAS

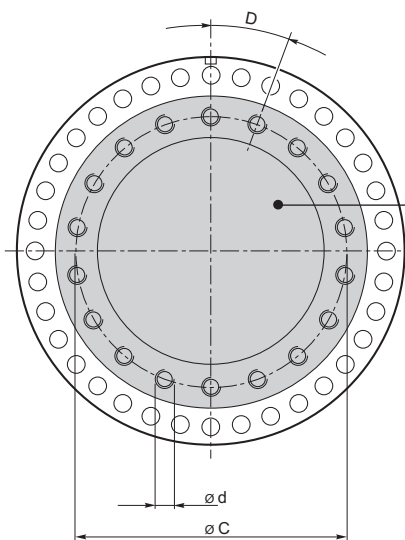
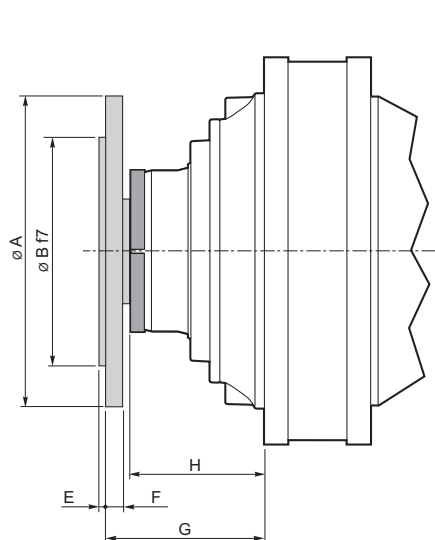
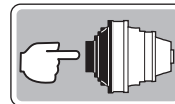
5. SAÍDAS - ENTRADAS

Sortie femelle cannelée
Salida hembra acanalada
Saída fêmea ranhurada



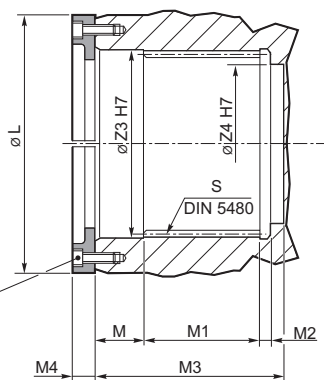
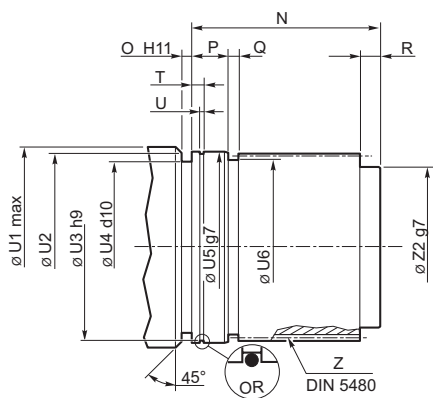
	A	B	C	d	E2	E3	F	H	J	J1	K	M	M1	M2	M3
S300	445	400	370	15.5	2	>90	12	10	124	117	365	15	90	—	105
S400	445	400	370	15.5	10	>92	12	10	124	140	365	15	90	10	115
S600	510	460	410	22	10	>87	12	12	142	160	415	45	85	10	140
S850	565	510	460	26	10	>107	10	11	156	174	450	45	105	10	160
S1200	635	575	520	26	15	>125	15	12	175	205	520	45	120	15	180
S1800	710	650	595	26	15	>135	16	14	185	213	595	45	130	15	190
S2500	810	735	665	33	15	>145	15	12	195	227	665	50	140	15	205
S3500	885	810	740	33	17	>178	14	14	235	260	740	50	170	17	237
S5000	980	900	810	39	17	>208	14	14	265	338	810	60	200	17	277

	S	V	V1	V2	Y	Z1	Z2	Z3
S300	N120x5x30x22x9H	n°35x10°	10°	10°	1x45°	W120x5x30x22x8g	165	122
S400	N140x5x30x26x9H	n°35x10°	10°	10°	3x30°	W140x5x30x26x8g	185	142
S600	N150x5x30x28x9H	n°28x12.857°	12.857°	6.428°	5x30°	W150x5x30x28x8g	218	152
S850	N170x5x30x32x9H	n°28x12.857°	12.857°	6.428°	5x30°	W170x5x30x32x8g	235	172
S1200	N200x5x30x38x9H	n°32x11.25°	11.25°	5.625°	5x30°	W200x5x30x38x8g	275	202
S1800	N210x5x30x40x9H	n°32x11.25°	11.25°	5.625°	5x30°	W210x5x30x40x8g	297	212
S2500	N240x5x30x46x9H	n°32x11.25°	11.25°	5.625°	5x30°	W240x5x30x46x8g	338	242
S3500	N280x8x30x34x9H	n°36x10°	10°	5°	5x30°	W280x8x30x34x8g	358	282
S5000	N340x8x30x41x9H	n°32x11.25°	11.25°	5.625°	5x30°	W340x8x30x41x8g	435	342



Flangia ruota (a richiesta)
Driving flange (on request)
Radnabenflansch (auf anfrage)
Flasque de roue (sur demande)
Brida se la rueda (bajo demanda)
Flange de roda (sob consulta)

	code
S300	9008238
S400	9005880
S600	9005939
S850	9005821
S1200	9006563
S1800	9006601
S2500	9008239
S3500	9007702
S5000	9006094

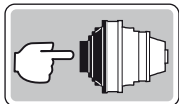


S300 ÷ S850	23.5 ÷ 25 Nm
S1200 ÷ S1800	47 ÷ 50 Nm
S2500 ÷ S5000	81 ÷ 86 Nm

* per viti classe 10.9
* for screw class 10.9
* für Schrauben klasse 10.9
* pour vis classe 10.9
* por tornillos clase 10.9
* para parafusos classe 10.9

	A	B	C	d*	D	E	F	G	H	L	M	M1	M2	M3	M4	N	O	OR
S300	360	220	300	M30	12x30°	10	30	177	137	165	15	90	—	117	20	115	9	113.97x2.62
S400	360	220	300	M30	14x25.71°	10	30	200	160	185	15	90	10	135	20	133	9	133.02x2.62
S600	400	260	340	M30	18x20°	10	30	220	180	218	45	85	10	157	20	155	9	145.72x2.62
S850	450	310	395	M30	22x16.36°	10	35	260	194	235	45	105	10	173	20	171	9	164.77x2.62
S1200	510	375	450	M30	22x16.36°	10	35	280	225	275	45	120	15	198	20	196	9	190.9x3.53
S1800	585	445	530	M30	30x12°	10	40	294	233	300	45	130	15	208	20	206	9	202.79x3.53
S2500	655	480	580	M36	24x15°	10	40	317	257	324	50	140	15	227	30	225	11	234.54x3.53
S3500	730	545	650	M36	30x12°	10	50	360	290	358	50	170	17	259	30	257	12	266.29x3.53
S5000	800	620	730	M36	36x10°	10	50	425	368	430	60	200	17	320	30	318	13	304.39x3.53

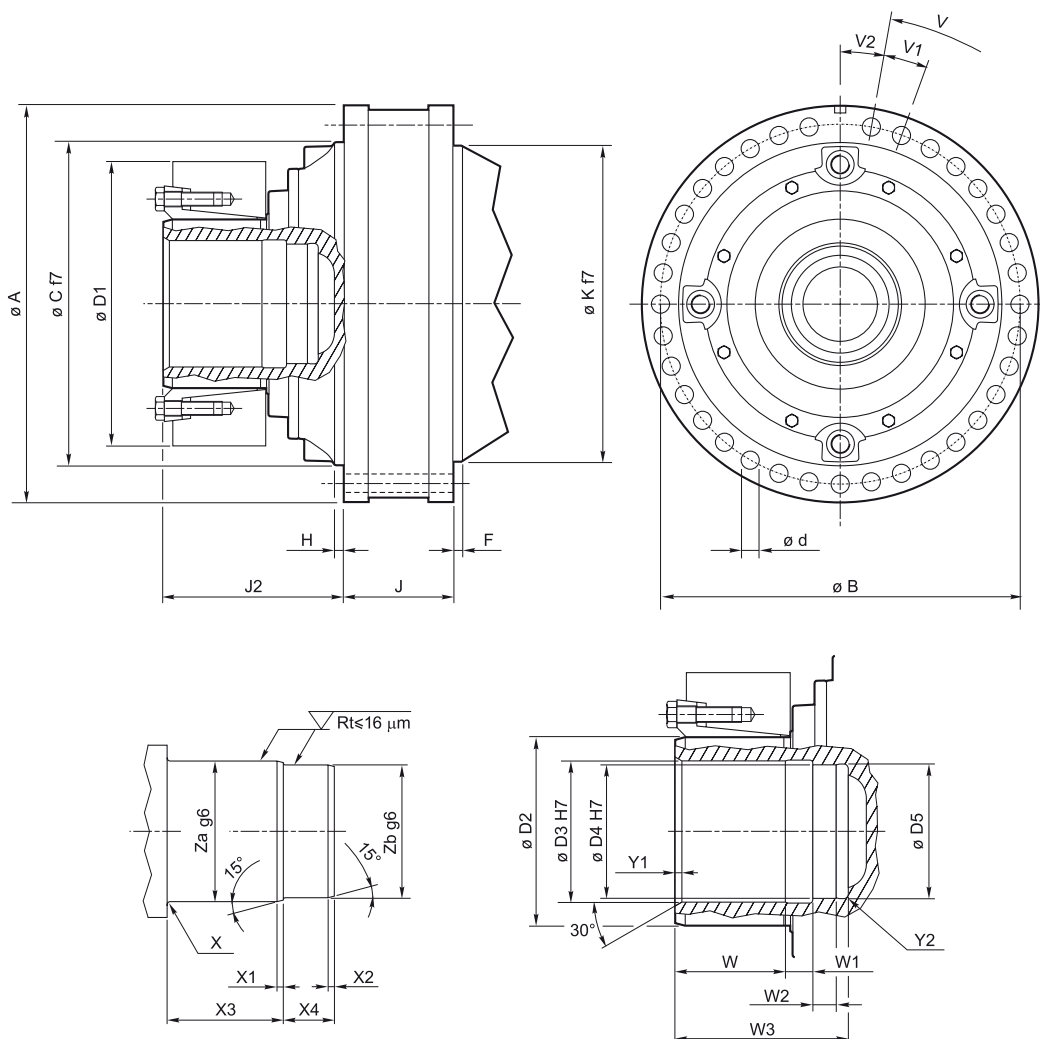
	P	Q	R	S	T	U	U1	U2	U3	U4	U5	U6	Z	Z2	Z3	Z4
S300	14	8	11.5	N120x5x30x22x9H	8.6	3.6	120	115	117.8	102	122	107	W120x5x30x22x8g	105	122	105
S400	14	10	26	N140x5x30x26x9H	8.6	3.6	140	130	137.8	122	142	127	W140x5x30x26x8g	120	142	120
S600	33	10	22	N150x5x30x28x9H	11	3.6	160	150	147.8	134	152	137	W150x5x30x28x8g	122	152	122
S850	33	10	18	N170x5x30x32x9H	11	3.6	180	170	167.8	154	172	157	W170x5x30x32x8g	145	172	145
S1200	33	10	28	N200x5x30x38x9H	12	4.8	220	206	196.4	189	202	187	W200x5x30x38x8g	170	202	170
S1800	33	10	28	N210x5x30x40x9H	12	4.8	240	226	206.4	199	212	197	W210x5x30x40x8g	180	212	180
S2500	38	10	36	N240x5x30x46x9H	12	4.8	260	246	236.4	228	242	227	W240x5x30x46x8g	220	242	220
S3500	38	10	34	N280x8x30x34x9H	12	4.8	300	280	276.4	264	282	260	W280x8x30x34x8g	235	282	235
S5000	45	15	58	N340x8x30x41x9H	14	4.8	360	340	336.4	320	342	320	W340x8x30x41x8g	320	342	320



FS

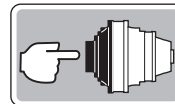
Uscita femmina per giunti ad attrito
Female output for friction couplings
Hohlwellenabtrieb für Reibungskupplungen

Sortie femelle pour accouplements à friction
Salida hembra para empalmes por rozamiento
Saída fêmea para juntas de atrito



	A	B	C	d	D1	D2	D3	D4	D5	F	H	J	J2	K
S300	445	400	370	15.5	320	185	140	130	132	12	10	124	178	365
S400	445	400	370	15.5	320	185	140	130	132	12	10	124	208	365
S600	510	460	410	22	370	220	165	155	157	12	12	142	235	415
S850	565	510	460	26	405	240	180	170	172	10	11	156	257	450
S1200	635	575	520	26	460	280	220	210	212	15	12	175	315	520
S1800	710	650	595	26	485	300	240	230	232	16	14	185	322	595
S2500	810	735	665	33	570	340	260	250	252	15	12	195	358	665
S3500	885	810	740	33	590	360	290	280	282	14	14	235	368	740
S5000	980	900	810	39	680	420	340	330	332	14	14	265	438	810

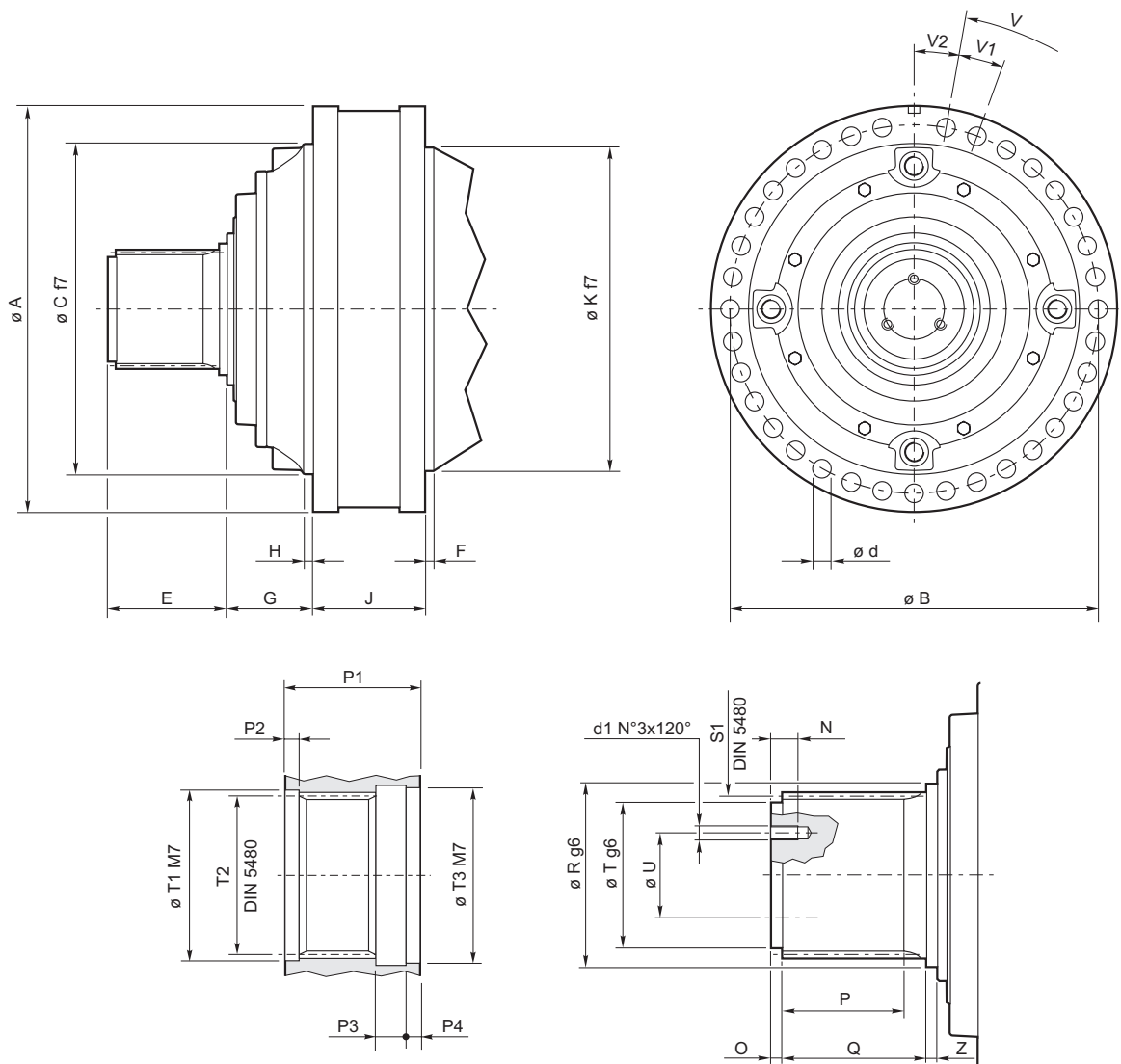
	V	V1	V2	W	W1	W2	W3	X	X1	X2	X3	X4	Y1	Y2	Za	Zb
S300	n°35x10°	10°	10°	83	27	30	150	R 2 max	4	4	87	57	4	R 3.5	140	130
S400	n°35x10°	10°	10°	110	25	22	167	R 2.5 max	4	4	114	47	5	R 3.5	140	130
S600	n°28x12.857°	12.857°	6.428°	132	28	25	200	R 4 max	5	5	137	53	6	R 5	165	155
S850	n°28x12.857°	12.857°	6.428°	140	35	30	220	R 4 max	5	5	145	65	5	R 6	180	170
S1200	n°32x11.25°	11.25°	5.625°	179	40	32	269	R 4 max	5	5	184	72	8	R 10	220	210
S1800	n°32x11.25°	11.25°	5.625°	181	40	32	271	R 4 max	5	5	186	72	8	R 10	240	230
S2500	n°32x11.25°	11.25°	5.625°	211	45	37	311	R 4 max	5	5	216	82	8	R 10	260	250
S3500	n°36x10°	10°	5°	218	45	40	323	R 4 max	5	5	223	85	8	R 12	290	280
S5000	n°32x11.25°	11.25°	5.625°	260	45	40	365	R 4 max	5	5	265	85	8	R 12	340	330



MP

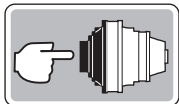
Uscita maschio scanalato
Splined male output
Keilnut-Abtriebswellenstumpf

Sortie mâle cannelée
Salida macho acanalada
Saída macho ranhurada



	A	B	C	d	d1	E	F	G	H	J	K	N	O	P
S300	445	400	370	15.5	M14	130	12	117	10	132	365	27	10	85
S400	445	400	370	15.5	M14	140	12	145	10	124	365	27	13	90
S600	510	460	410	22	M14	150	12	152	12	145	415	27	12	95
S850	565	510	460	26	M14	170	10	163	11	156	450	27	15	115

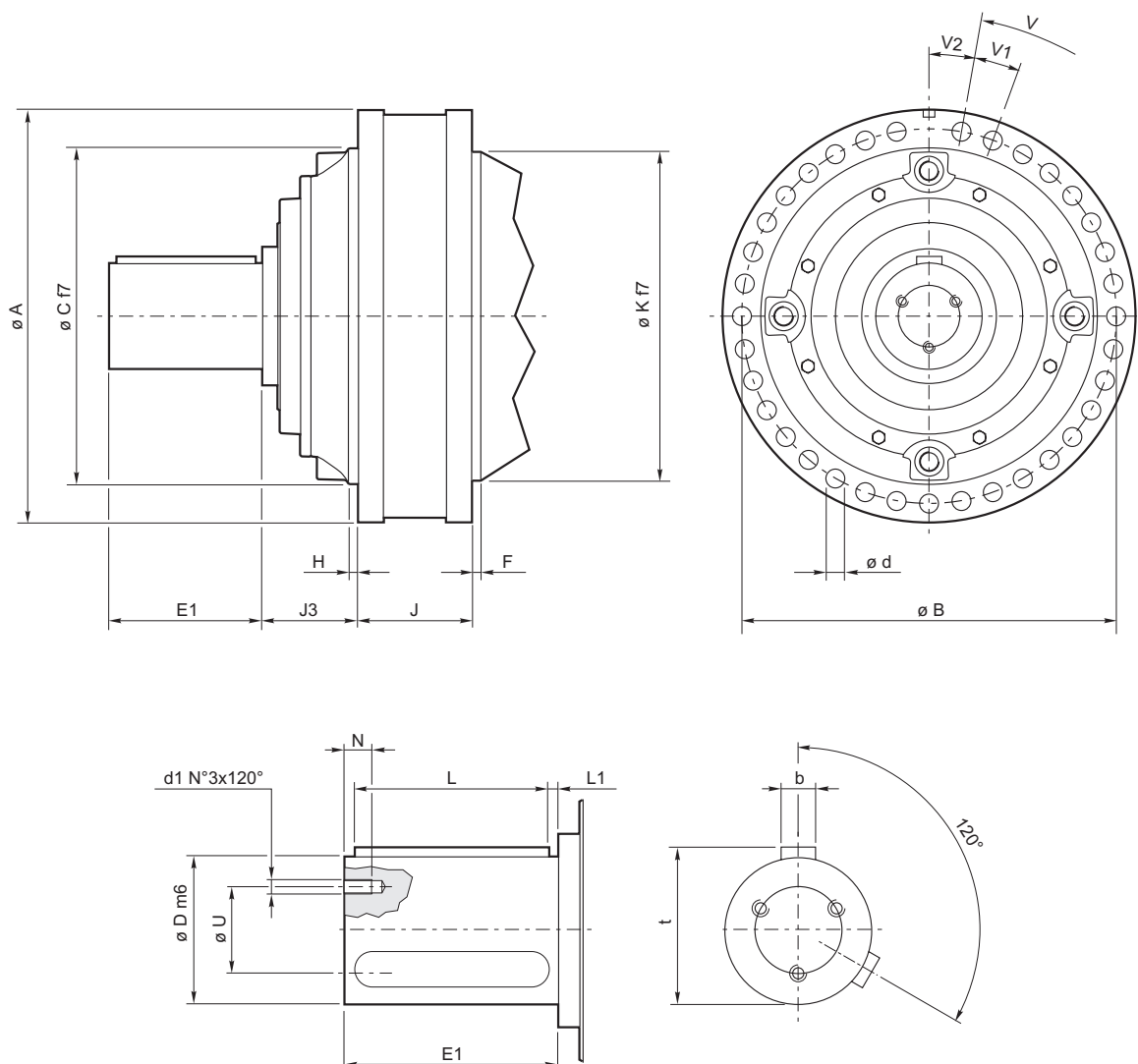
	P1	P2	P3	P4	Q	R	S1	T	T1	T2	T3	U	V	V1	V2	Z
S300	130	10	15	21	105	120	W120x3x30x38x8f	100	121	N120x3x9H	120	75	n°35x10°	10°	10°	15
S400	140	13	20	18	109	130	W130x3x30x42x8f	110	131	N130x3x9H	130	85	n°35x10°	10°	10°	18
S600	150	12	18	27	123	151	W150x5x30x28x8f	120	151	N150x5x9H	151	95	n°28x12.857°	12.857°	6.428°	15
S850	170	15	17	25	140	171	W170x5x30x32x8f	140	171	N170x5x9H	171	112	n°28x12.857°	12.857°	6.428°	15



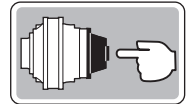
MP1

Uscita maschio cilindrico
Cylindrical male output
Zylindrischer Abtriebswellenstumpf

Sortie mâle cylindrique
Salida macho cilíndrico
Saída macho cilíndrico



	A	B	b	C	D	d	d1	E1	F	H	J	J3	K	L	L1	N	t	U	V	V1	V2
S300	445	400	32	370	120	15.5	M14	210	12	10	132	117	365	200	5	27	127	75	n°35x10°	10°	10°
S400	445	400	32	370	130	15.5	M14	220	12	10	124	145	365	200	10	27	137	85	n°35x10°	10°	10°
S600	510	460	40	410	160	22	M14	240	12	12	145	152	415	220	10	27	169	120	n°28x12.857°	12.857°	6.428°
S850	565	510	40	460	170	26	M14	240	10	11	156	163	450	220	10	27	179	125	n°28x12.857°	12.857°	6.428°



SUPPORTI MASCHIO IN ENTRATA

INPUT MALE SHAFTS

ANTRIEBSWELLENSTÜMPFE

Gli alberi di entrata descritti di seguito sono utilizzati quando il motore di azionamento, generalmente elettrico, è collegato all'albero di entrata mediante giunto elastico, o puleggia e cinghie.

La normale posizione di montaggio è con l'asse orizzontale; per altre posizioni di montaggio, occorre regolare la lubrificazione. Si prega di consultare il Servizio Tecnico Brevini per maggiori dettagli. La velocità massima di lavoro è generalmente 1800 min⁻¹.

Gli alberi tipo ISL sono specifici per utilizzo con giunto elastico.

Questi tipi si prestano all'uso su specifiche grandezze di riduttori, come indicato nelle corrispondenti tavole dimensionali.

Input shafts described below are used when the driving motor, which is usually electric, is connected to the input shaft by flexible coupling or belts and pulleys. Normal mounting position is with horizontal axis; for different positions the lubrication solution must be adjusted: please consult Brevini technical staff for more details. Max working speed is generally 1800 min⁻¹.

The input shafts ISL are suitable for connection with elastic coupling

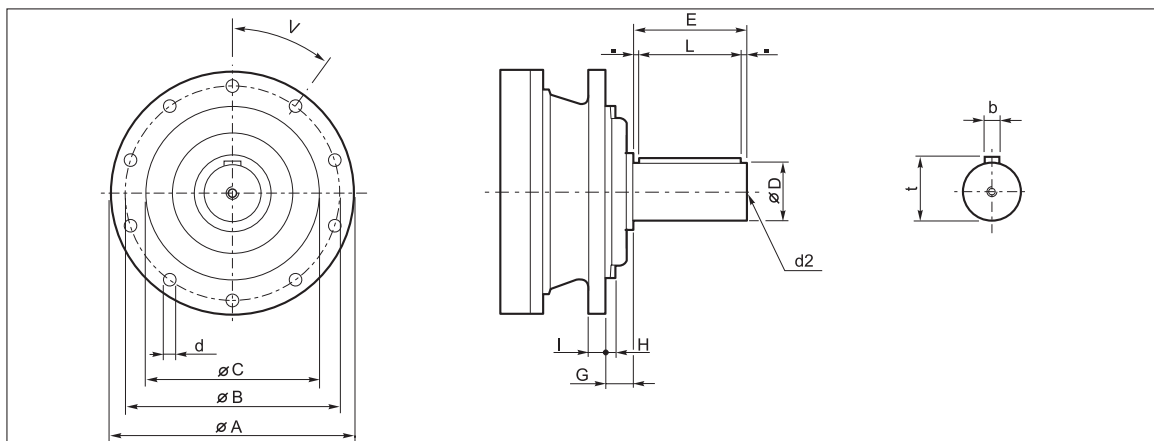
These types are suitable for using on specific gears types, as shown in the dimensional table of each gear size.

Die im Folgenden beschriebenen Antriebswellen werden eingesetzt, wenn der normalerweise elektrische Antriebsmotor mittels einer elastische Kupplung oder mithilfe von Riemenscheiben und Riemen angeschlossen wird.

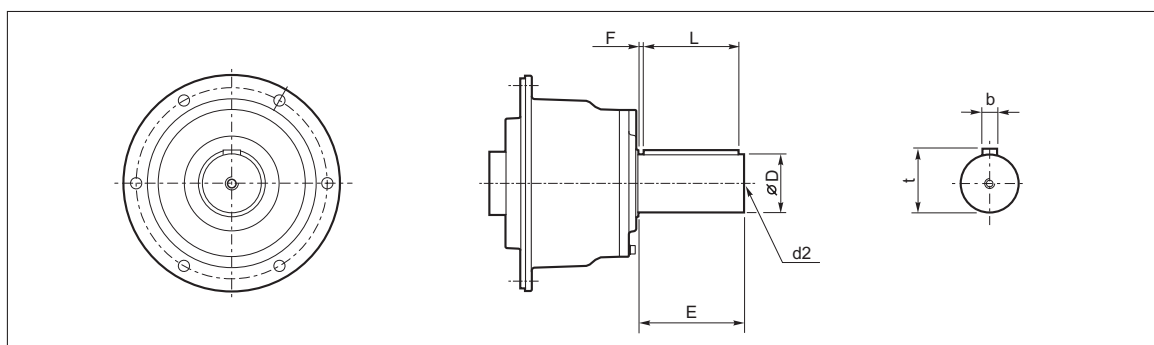
Die normale Einbaulage ist horizontal; für andere Einbaupositionen muss die Schmierung eingestellt werden. Wenden Sie sich für weitere Einzelheiten an den Technischen Kundendienst Brevini. Die maximale Betriebsdrehzahl beträgt meist 1800 min⁻¹.

Die ISL - Wellen sind spezifisch für den Einsatz mit elastischen Kupplungen bestimmt.

Diese Typen eignen sich für die Verwendung auf ganz bestimmten Getriebegrößen, wie Sie den betreffenden Maßbildern entnehmen können.

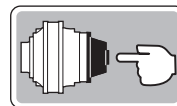


	A	B	C f7	D m6	E	G	H	I	L	b	d	d2 DIN332	t	V
S-45CR1	220	195	150	65	105	15	5	16	90	18	14	M20x42	69	n°10x36°
S-46C1	272	245	175	65	105	39	10	18	90	18	14	M20x42	69	n°10x36°
S-65CR1	280	250	200	80	130	40	14.5	20	110	22	16	M20x42	85	n°10x36°
S-90CR1	325	295	230	90	170	36	5	25	160	25	18	M24x50	95	n°12x30°



	D m6	E	t	b	F	L	d2 DIN332
ISL150	90	130	95	25	10	110	M24x50
ISL250							
ISL300							

	D m6	E	t	b	F	L	d2 DIN332
IS300	100	210	106	28	10	180	M24x50
IS600	110	210	116	28	10	180	M24x50
IS850	110	210	116	28	10	180	M24x50



Supporti maschio per entrata universale

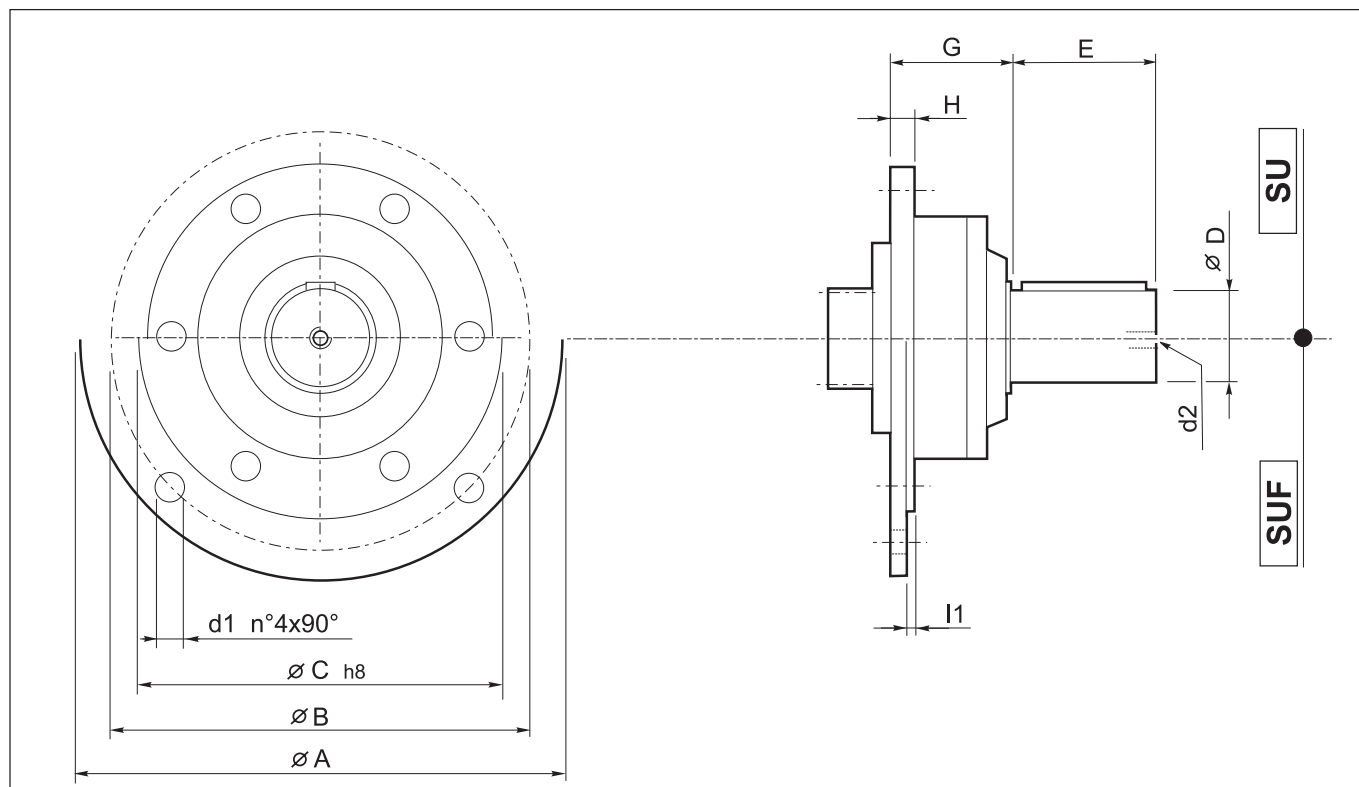
Male shafts for universal input

Wellenstümpfe für Universalantriebe

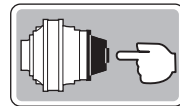
I tipi SU sono generalmente utilizzati con un giunto elastico, possono essere montati direttamente su qualsiasi tipo di riduttore con entrata universale 00 e possono essere forniti separatamente. Vedere la sezione relativa ai riduttori per dimensioni e carichi radiali.

These types generally used in combination with a flexible coupling. They fit directly onto any type of gear unit with universal input type 00 and can be supplied separately. See gearbox sections for dimensions and radial loads.

Die Typen der Baureihe SU werden gewöhnlich mit einer elastischen Kupplung verwendet, können direkt auf jede Getriebeart mit Universalantrieb 00 montiert werden und sind separat lieferbar. Für Abmessungen und Radiallasten siehe Abschnitt Getriebe.



	A	B	C	D	d1	d2	E	G	H	I1	Codice / Code
SU1	—	—	—	28	—	M10x22	50	60	12	—	C1129800420
SU2	—	—	—	40	—	M10x22	58	60	12	—	C1129800380
SU3	—	—	—	48	—	M10x25	82	60	12	—	C1129800910
SUF1	250	215	180	28	13	M10x22	50	60	12	3	C1131900420
SUF2	250	215	180	40	13	M10x22	58	60	12	3	C1131900380
SUF3	250	215	180	48	13	M10x25	82	60	12	3	C1131900910



FRENI LAMELLARI A BAGNO D'OLIO

I riduttori di questo catalogo possono essere dotati in entrata di freno a dischi multipli a bagno d'olio ad apertura idraulica.

Freni negativi

Questi freni agiscono sotto la spinta di una serie di molle su coppie di dischi alternati fissi e mobili; lo sbloccaggio avviene per effetto della pressione idraulica nel pistone. Hanno quindi un funzionamento "negativo"; sono da impiegare come freni di stazionamento, non per frenatura dinamica. Tali prestazioni, con margine di accuratezza +/- 10% sono sempre calcolate con contropressione 0; in caso contrario la coppia frenante viene percentualmente ridotta nel rapporto contropressione/pressione min. apertura. Per la selezione, occorre tenere conto di due condizioni:

1) Coppia freno $\times i_{eff} >$ Coppia richiesta in uscita;

2) Coppia freno $\times i_{eff} < 1.1 T_{2max}$

Ricordiamo che le alte velocità di rotazione, oppure prolungati funzionamenti con asse verticale, possono generare elevati aumenti di temperatura: in questi casi, contattare il Servizio Tecnico Commerciale BREVINI per opportuni consigli in merito. Per la lubrificazione, si consigliano oli minerali resistenti al calore ed all'invecchiamento, di viscosità ISO VG 32, indice di viscosità pari o superiore a 95. Gli oli idraulici sono generalmente idonei; nel capitolo relativo alla lubrificazione sono riportati quelli consigliati.

MULTIDISC BRAKES IN OIL

The gear units in this catalogue can be supplied with multidisc brakes, in oil, hydraulically released.

Negative brakes

These brakes are actuated by a series of coil springs pressing together alternate fixed and rotating discs. The braking torque is released by mean of an hydraulic pressure supplied from outside. This means that they work as "negative" brakes and are intended for safety or parking only, when the input shaft is not rotating. These performances, with +/- 10% accuracy margins, are always calculated without back pressure; otherwise the braking torque is reduced as a percentage of the ratio back pressure/minimum opening pressure. When carrying out the selection, the following two conditions must be taken into account:

1) Braking torque $\times i_{eff} >$ required output torque;

2) Braking torque $\times i_{eff} < 1.1 T_{2max}$

We remind you that high rotation speed, or extended running with vertical axis, can generate considerable temperature increases; in such cases please apply to BREVINI technical staff for advice. For lubrication we recommend to use mineral oils heat and aging resistant, having viscosity ISO VG 32 and viscosity index at least 95; hydraulic oils are usually suitable (for recommended types see lubrication chapter).

LAMELLENBREMSEN IM ÖLBAD

Die Getriebe des vorliegenden Katalogs können mit im Ölbad laufenden Lamellenbremsen mit hydraulischer Spreizung ausgestattet werden.

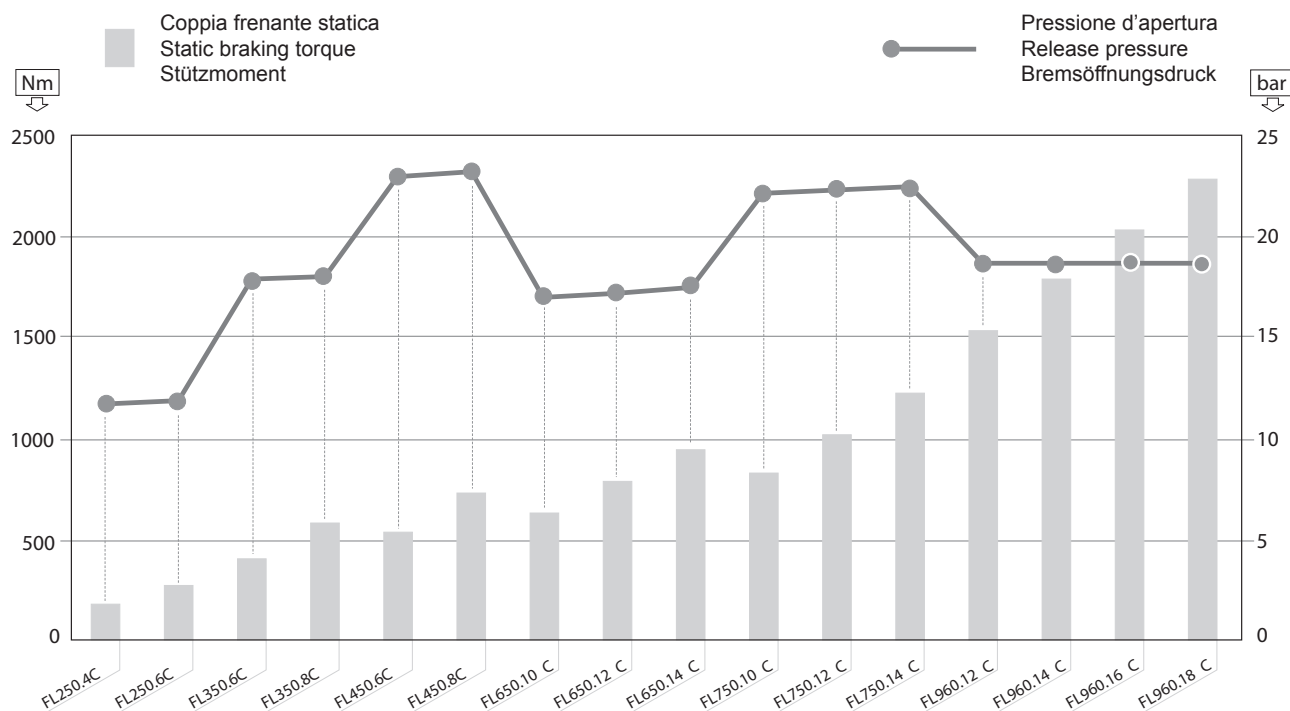
Negative Bremsen

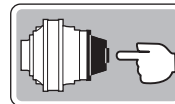
Die Bremsen wirken unter dem Druck einer Reihe von Federn auf abwechselnd fixe und bewegliche Scheibenpaare; das Lösen der Bremse erfolgt durch den hydraulischen Druck im Kolben. Sie haben demnach eine "negative" Funktion; sie werden als Feststellbremsen benutzt und dienen nicht zum dynamischen Abbremsen. Diese Leistungen werden bei einer Genauigkeitsmarge von +/- 10% mit einem Gegendruck von 0 berechnet; anderenfalls wird das Bremsmoment prozentual im Verhältnis Gegendruck/Mindestöffnungsdruck reduziert. Bei der Auswahl sind zwei Bedingungen zu berücksichtigen:

1) Bremsmoment $\times i_{eff} >$ erforderliches Abtriebsdrehmoment;

2) Bremsmoment $\times i_{eff} < 1.1 T_{2max}$

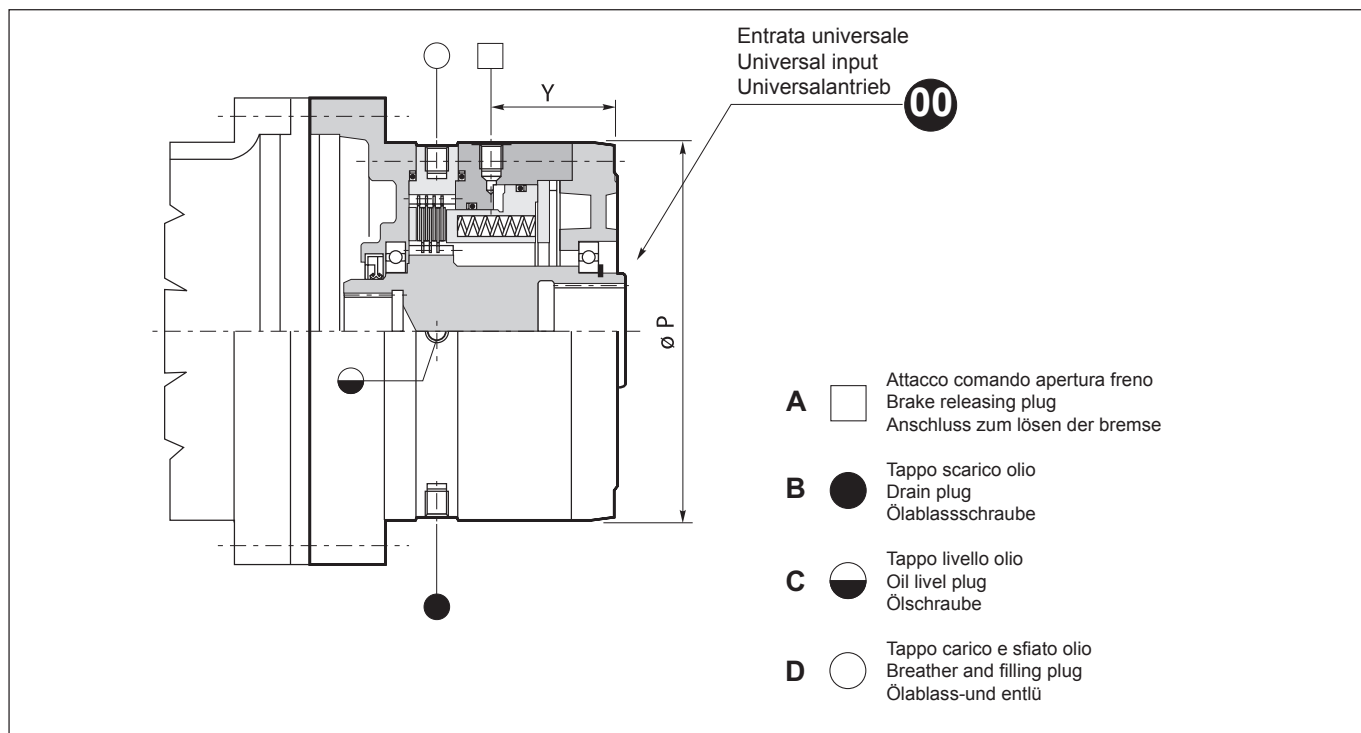
Es wird daran erinnert, dass hohe Drehzahlen oder lange Betriebszeiten mit vertikaler Achse zu starken Temperaturerhöhungen führen können: Wenden Sie sich in diesem Fall an den technischen Kundendienst BREVINI, der Sie diesbezüglich gerne berät. Zur Schmierung sollten wärme- und alterungsbeständige Mineralöle mit Viskosität ISO VG 32 verwendet werden (Viskositätsindex gleich oder höher als 95). Die Hydrauliköle sind normalerweise geeignet; im Kapitel "Schmierung" werden die empfohlenen Ölsorten aufgeführt.



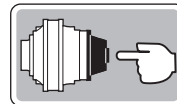


		T [Nm]	P [bar]	Pmax [bar]	Vo [l]		Va [cm³] lamelle nuove new discs Neue Lamellen
					orizzontale horizontal horizontal	verticale vertical vertical	
FL250	FL 250.4C	181	13.28	315	0.3	0.6	15
	FL 250.6C	278	13.28	315	0.3	0.6	15
FL350	FL 350.6C	417	19.92	315	0.3	0.6	15
	FL 350.8C	571	19.92	315	0.3	0.6	15
FL450	FL 450.6C	540	25.59	315	0.3	0.6	15
	FL 450.8C	737	25.59	315	0.3	0.6	15
FL650	FL 650.10C	642	19.92	315	0.5	1.0	15
	FL 650.12C	792	19.92	315	0.5	1.0	15
	FL 650.14C	949	19.92	315	0.5	1.0	15
FL750	FL 750.10C	834	25.59	315	0.5	1.0	15
	FL 750.12C	1027	25.59	315	0.0	1.0	15
	FL 750.14C	1229	25.59	315	0.5	1.0	15
FL960	FL 960.12C	1528	21.98	315	1.2	2.4	22
	FL 960.14C	1783	21.98	315	1.2	2.4	22
	FL 960.16C	2038	21.98	315	1.2	2.4	22
	FL 960.18C	2293	21.98	315	1.2	2.4	22

T: Coppia statica media / Medium static torque / Mittleres Stützmoment
P: Pressione apertura freno / Brake release pressure / Bremsöffnungsdruck
Pmax: Pressione max. / Max pressure / Höchstdruck
Vo: Volume olio / Oil quantity / Ölmenge
Va: Volume olio per comando apertura freno / Oil quantity for brake release control / Bremsölmenge zum Lösen der Bremse



	P	Y	ATTACCHI / PLUGS / ANSCHLÜSSE				Kg
			A	B	C	D	
FL 250	195	67	M12X1.5	R 1/4"	R 1/4"	R 1/4"	24
FL 350	195	67	M12X1.5	R 1/4"	R 1/4"	R 1/4"	24
FL 450	195	67	M12X1.5	R 1/4"	R 1/4"	R 1/4"	26
FL 650	195	67	M12X1.5	R 1/4"	R 1/4"	R 1/4"	36
FL 750	195	67	M12X1.5	R 1/4"	R 1/4"	R 1/4"	37
FL 960	225	72.5	M12X1.5	R 1/4"	R 1/4"	R 1/4"	42



	T [Nm]	P [bar]	P _{max} [bar]	Vo [l]		Va [cm ³] lamelle nuove new discs Neue Lamellen
				orizzontale horizontal horizontal	verticale vertical vertical	
FL620.U	271	24.9	210	0.1	0.2	10
FL635.U	377	13.6	315	0.1	0.2	10

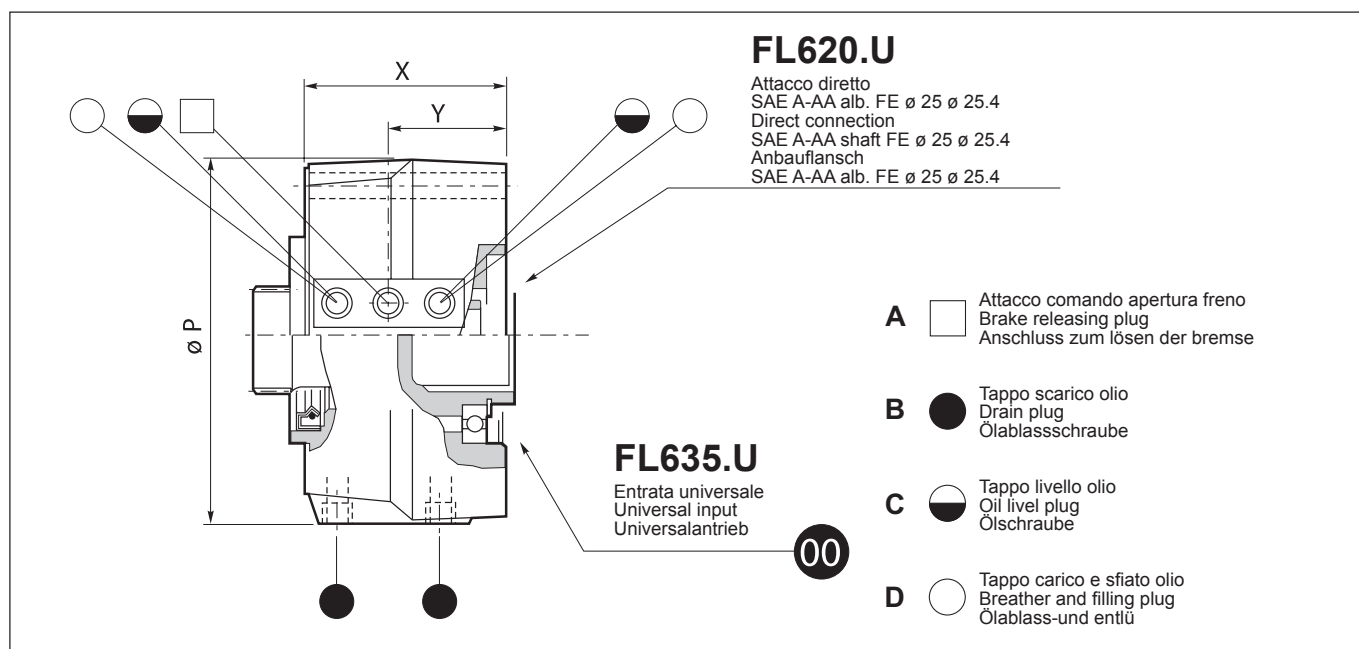
T: Coppia statica media / Medium static torque / Mittleres Stützmoment

P: Pressione apertura freno / Brake release pressure / Bremsöffnungsdruck

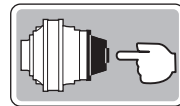
P_{max}: Pressione max. / Max pressure / Höchstdruck

Vo: Volume olio / Oil quantity / Ölmenge

Va: Volume olio per comando apertura freno / Oil quantity for brake release control / Bremsölmenge zum Lösen der Bremse



	P	X	Y	ATTACCHI / PLUGS / ANSCHLÜSSE				Kg	Codice / Code / Code
				A	B	C	D		
FL 620.U	161	104.5	46	M10x1	R 1/8"	R 1/8"	R 1/8"	8	C1103704120 (alb. FE ø 25) C1103704120 (alb. FE ø 25.4)
FL 635.U	165	91	59	M12x1.5	R 1/4"	R 1/4"	R 1/4"	9	C1109200160



ENTRATE UNIVERSALI

UNIVERSAL INPUTS

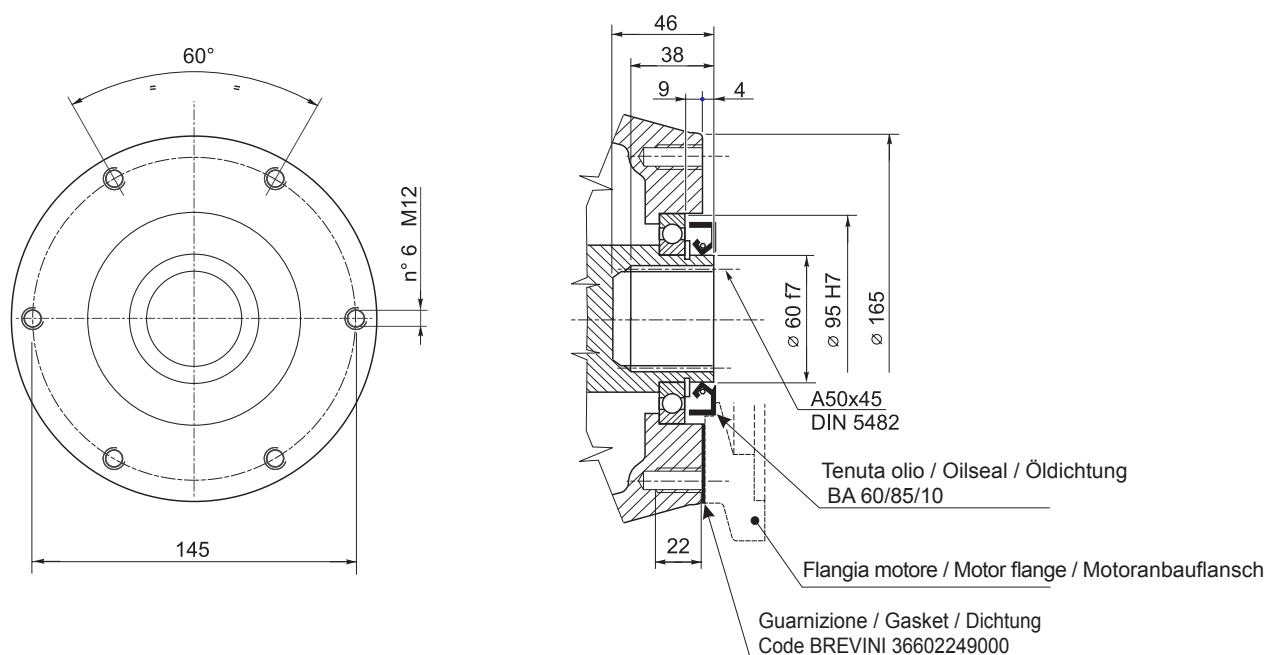
UNIVERSALANTRIEBE

L'entrata universale è una configurazione che, montata in ingresso ai riduttori, permette di accoppiare le più diverse tipologie di motorizzazioni tramite una flangia e un manicotto di adattamento appositi. Esistono due diverse dimensioni di entrata universale in funzione delle grandezze montate come stadio in ingresso sui riduttori. L'applicabilità può essere dedotta dalle tavole dimensionali.

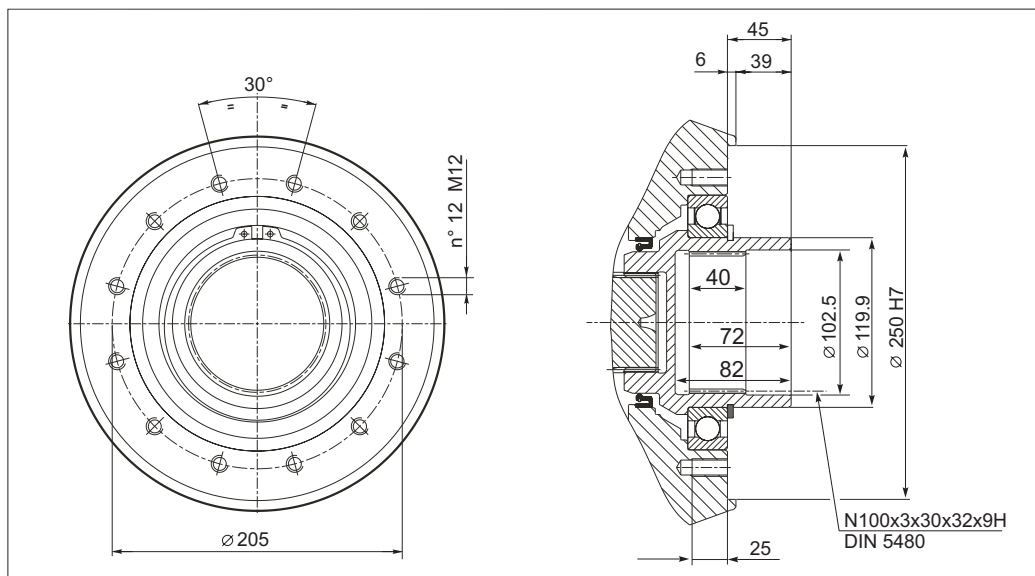
The universal input is a configuration mounted on the gear unit input, enabling the coupling of many types of motorizations by means of a special flange and adapter coupling. Two different universal input sizes are available according to the sizes mounted as input stage on the gear units. The universal input configuration can be used whether an external lamellar brake is fitted to the gearbox input. Applicability can be obtained from the dimensional tables.

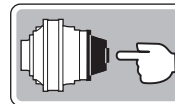
Der Universalantrieb ist eine Anordnung, die am Getriebeeingang montiert wird und die ermöglicht, die unterschiedlichsten Motortypen mithilfe eines Flansches oder einer Adapterhülse anzukoppeln. Je nach der auf den Getrieben montierten Antriebsstufen stehen zwei verschiedene Größen des Universalantriebs zur Verfügung. Die Eignung kann den Maßbildern entnommen werden.

00



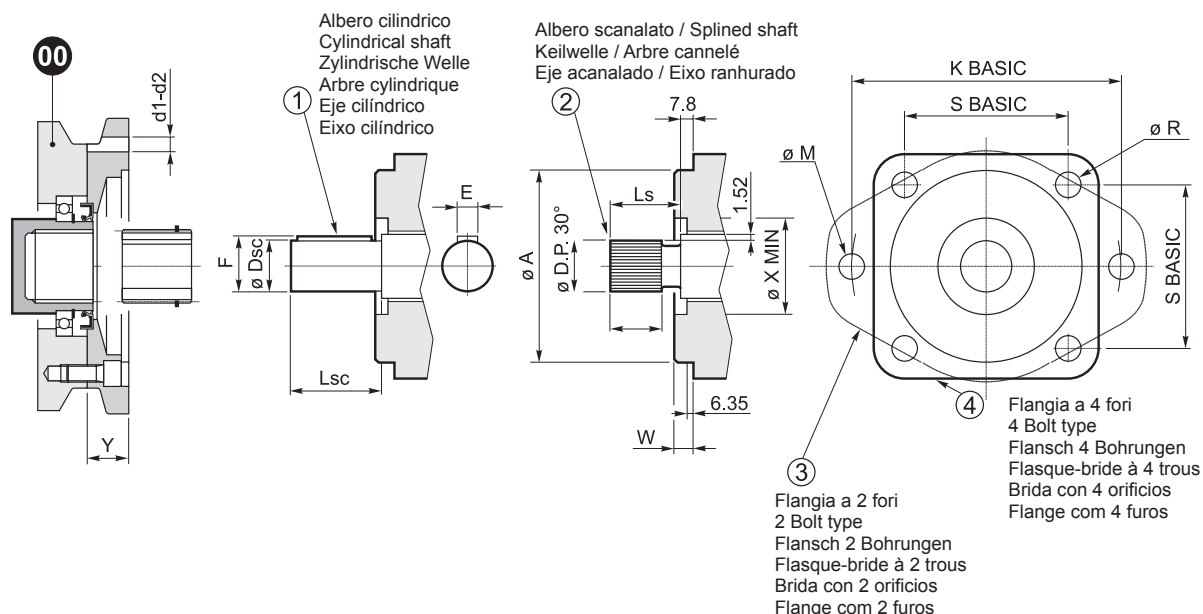
S00





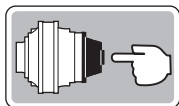
FLANGIATURA MOTORI SAE J 744C
ADAPTORS FOR MOTORS SAE J 744C
ANFLANSCHEN DER MOTOREN SAE J 744C

FLASQUAGE AU MOTEURS SAE J 744C
BRIDAS DE LOS MOTORES SAE J 744C
ADAPTORS FOR MOTORS SAE J 744C



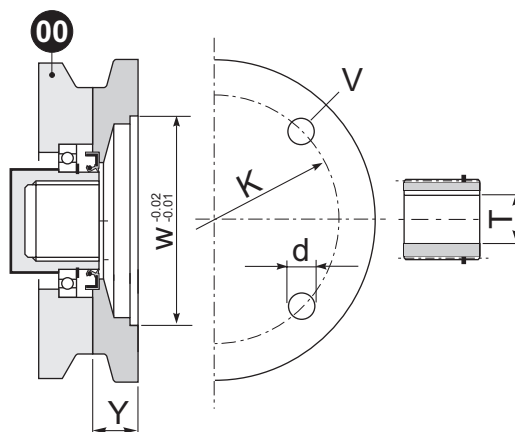
SAE	Ø A	W	Ø X MIN	K basic	Ø M	S basic	Ø R	ALBERO SCANALATO / SPLINED SHAFT KEILWELLE / ARBRE CANNELE EJE ACANALADO / EIXO RANHURADO				ALBERO CILINDRICO / CYLINDRICAL SHAFT ZYLINDRISCHE WELLE / ARBRE CYLINDRIQUE EJE CILÍNDRICO / EIXO CILÍNDRICO			
								Nr.Denti / No.Teeth Anz. Zähne / Nbre dents Dientes / N.º dentes	30° D.P.	LS	LA MIN.	Ø DSC	LSC	F	E
A	82.55	6.35	—	106.4	13	75.22	—	9	16/32	24	7.6	15.88	24	17.6	4
B	101.6	9.65	50.8	146	14.3	89.8	14.3	13	16/32	33.3	10.2	22.22	33.3	24.95	6.35
B-B	101.6	9.65	50.8	146	14.3	89.8	14.3	15	16/32	38.1	12.7	25.4	38.1	28.1	6.35
C	127.0	12.7	63.5	181	17.5	114.5	14.3	14	12/24	47.6	15.2	31.75	47.6	35.2	7.8
C-C	127.0	12.7	63.5	181	17.5	114.5	14.3	17	12/24	54	17.8	38.1	54	42.25	9.525
D	152.4	12.7	70	228.6	20.6	161.6	20.6	13	8/16	66.67	20.3	44.45	66.67	49.3	11.1
E	165.1	15.87	70	317.5	27	224.5	20.6	13	8/16	66.67	20.3	44.45	66.67	49.3	11.1

SAE	Y	No. Bolt	CODICE DI ORDINAZIONE / ORDERING CODE BESTELLNUMMER / CODE DE COMMANDE CÓDIGO PARA EL PEDIDO / CÓDIGO DE PEDIDO					
			Flangia con d1 / Flange with d1 / Flansch mit d1 Flasque-bride avec d1 / Brida con d1 / Flange com d1			Flangia con d2 / Flange with d2 / Flansch mit d2 Flasque-bride avec d2 / Brida con d2 / Flange com d2		
			d1 Metric / Metric Metrisch / Métrique Métrico / Métrico	Albero scanalato Splined shaft Keilwelle Arbre cannelé Eje acanalado Eixo ranhurado	Albero cilindrico Cylindrical shaft Zylindrische Welle Arbre cylindrique Eje cilíndrico Eixo cilíndrico	d2 Pollici / Inch Zoll / Pouces Pulgadas / Polegadas	Albero scanalato Splined shaft Keilwelle Arbre cannelé Eje acanalado Eixo ranhurado	Albero cilindrico Cylindrical shaft Zylindrische Welle Arbre cylindrique Eje cilíndrico Eixo cilíndrico
A	25	2 - 4	M10 T.U. 15	61125502680	61125500900	3/8 0.59 Min Full Thread	61147702680	61147700900
B	25	2 - 4	M12 T.U. 25	61125700580	61125700460	1/2 - 13 1.00 Min Full Thread	61143900580	61143900460
B-B	25	2 - 4	M12 T.U. 25	61125701940	61125700500	1/2 - 13 1.00 Min Full Thread	61143901940	61143900460
C	28	2	M16 T.U. 20	61101801480	61101800510	5/8-11 0.78 Min F.T.	61145301480	61145300510
		4	M14 T.U. 20			1/2-13 0.78 Min F.T.		
C-C	79	2	M16 T.U. 20	61101802540	61101801750	5/8-11 0.78 Min F.T.	61145302540	61145301750
		4	M14 T.U. 20			1/2-13 0.78 Min F.T.		
D	93	2 - 4	M18 T.U. 20	61103501930	61103501720	3/4 - 10 1.00 Min Full Thread	61147801930	61147801720
E	93	2 - 4	Æ 22 T.U. 30	61118201930	61118201720	Ø 0.875 1.11 Min	61118201930	61118201720



FLANGIATURA MOTORI - NEMA
ADAPTORS FOR MOTORS - NEMA
ANFLANSCHEN DER MOTOREN - NEMA

FLASQUAGE AU MOTEURS - NEMA
BRIDAS DE LOS MOTORES - NEMA
ADAPTORS FOR MOTORS - NEMA



NEMA Grandezza motore Motor size Motorgröße Grandeur moteur Tamaño del motor Tamanho do motor	FLANGE ATTACCO MOTORE INPUT FLANGE ADAPTER MOTORANBAUFLANSCH FLASQUES-BRIDES POUR MOTEUR BRIDAS DEL MOTOR FLANGE ENGATE MOTOR					MANICOTTO / COUPLING KUPPLUNG / MANCHON OU MOYEU MANGUITO ACOPLAMIENTO / LUVA ACOPLAMENTO		ORDERING CODE CODICE DI ORDINAZIONE ORDERING CODE BESTELLNUMMER CODE DE COMMANDE CÓDIGO PARA EL PEDIDO CÓDIGO DE PEDIDO
						T		
	W	V	d	K	Y	Diametro / Diameter Durchmesser / Diamètre Diámetro / Diâmetro	Linguetta / Key Passfeder / Clavette Lengüeta / Lingüeta	
143/145 TD	9	4	0.55	10	1.18	0.875	0.187	61135501060
182/184 TC	8.5	4	0.55	7.25	1.18	1.125	0.25	61130800070
182/184 TD	9	4	0.55	10	1.18	1.25	0.25	61135502200
210 TD	9	4	0.55	10	1.18	1.375	0.312	61135502500
213/215 TC	8.5	4	0.55	7.25	1.81	1.375	0.312	61130802500

Dimensioni in pollici / Inch dimensions / Abmessungen in Zoll / Dimensions en pouces / Dimensiones en pulgadas / Dimensões em polegadas

Oltre alle flangiature riportate in tabella sono disponibili altri modelli a richiesta
 Most requested electric motor adapters are displayed. Other input flange and shaft adapters are available on request
 Neben den in der Tabelle aufgeführten Flanschadaptern sind weitere auf Anfrage erhältlich
 Aux flasques-bridés indiqués dans le tableau viennent s'ajouter d'autres modèles sur demande
 Además de las bridas indicadas en la tabla, Brevini Riduttori puede suministrar diferentes modelos bajo pedido
 Além dos flanges indicados na tabela, estão disponíveis outros modelos a pedido



6. STATO DI FORNITURA

I riduttori sono verniciati esternamente con fondo epossidico sintetico blu "RAL 5010", salvo di verse disposizioni contrattuali. La protezione è idonea a resistere a normali ambienti industriali anche esterni e consente ulteriori finiture con vernici sintetiche.

Nel caso si prevedano particolari condizioni ambientali aggressive, bisogna utilizzare delle verniciature speciali.

Le parti esterne lavorate del riduttore come le estremità degli alberi cavi e non, piani di appoggio, centraggi ecc. vengono protetti con olio (tectyl) antiossidante. Le parti interne delle carcasse dei riduttori sono verniciate con vernice antiolio e i cinematismi sono protetti con olio antiossidante.

Tutti i riduttori, salvo diverse indicazioni contrattuali, **vengono forniti senza lubrificazione**: come indicato da un'apposita etichetta adesiva allegata al riduttore stesso per evidenziarne lo stato.

I prodotti Brevini Riduttori S.p.A. vengono imballati e spediti, secondo i casi, in casse o su pallets.

Tutti i prodotti Brevini, salvo diverse indicazioni contrattuali, **vengono imballati con imballi idonei per resistere a normali ambienti industriali**.

Ogni riduttore Brevini viene fornito con specifico manuale di "Installazione e Manutenzione". Dichiarazione del fabbricante e l'attestato di Conformità – UNI EM10204-2.1

6. SUPPLY CONDITION

The gear units are painted externally with synthetic primer in blue "RAL 5010", unless otherwise specified in the contract. The protection is suitable for withstanding normal industrial environments (also external) and can be finished with synthetic paints. If particular aggressive ambient conditions are foreseen, special painting is required.

The worked external parts of the gear unit, such as the ends of the hollow and solid shafts, support tables, centerings, etc., must be protected with antioxidant oil (tectyl). The parts inside the gear unit casings are painted with oil-proof paint and the kinematic mechanisms are protected with antioxidant oil. Unless otherwise specified in the contract, **all the gear units are supplied without lubrication**: as specified by a special sticker placed on the unit for indicating its condition.

Brevini Riduttori S.p.A. products are packed and shipped in boxes or on pallets, as required.

Unless otherwise specified in the contract, all Brevini products **are packed with packing suitable for withstanding normal industrial environments**.

Every Brevini gear unit comes with a specific "Installation and Maintenance" manual. Manufacturer's declaration and certificate of Conformity – UNI EM10204-2.1.

6. LIEFERBEDINGUNGEN

Die Außenseite der Getriebe ist mit Epoxidharz blau "RAL 5010" lackiert, soweit vertraglich nicht anders vereinbart. Der Schutz ist für normale Industrieumgebungen und Außenbereiche geeignet und gestattet zusätzliche Überlackierung mit Synthetiklacken. Bei Einsatz unter besonders aggressiven Umgebungsbedingungen müssen Speziallacke verwendet werden.

Die bearbeiteten Außenteile des Getriebes wie die Stümpfe der Hohlwellen und Wellen, Stützflächen, Zentrieransätze usw. werden mit einem Film oxidationshemmenden Öls (Tectyl) geschützt. Die Innenteile der Getriebegehäuse werden mit schmierölfechten Lacken lackiert und die Getriebe sind durch oxidationshemmendes Öl geschützt.

Alle Getriebe, soweit vertraglich nicht anders vereinbart, **werden ohne Schmieröl geliefert**: ein Aufkleber auf dem Getriebe weist auf den Zustand desselben hin.

Die Produkte Brevini Riduttori S.p.A. werden in Kisten oder auf Paletten geliefert und versandt.

Alle Produkte Brevini, soweit vertraglich nicht anders vereinbart, **werden in Verpackung geliefert, die für normale Industrieumgebungen ausreichend sind**.

Alle Getriebe Brevini sind mit einem spezifischen "Installations- und Wartungshandbuch", mit Herstellererklärung und Konformitätsbescheinigung – UNI EM10204-2.1 versehen.

7. CONDIZIONI DI STOCCAGGIO

Nel caso occorra immagazzinare il prodotto per un periodo superiore ai 2 mesi attenersi a quanto segue:

Proteggere gli alberi e i centraggi con pellicola di grasso e/o liquidi protettivi anticorrosione.

Rimpire totalmente il riduttore e l'eventuale freno lamellare con oli adeguati.

Immagazzinare in luogo asciutto e con temperatura compresa fra i -5 °C e +30 °C.

Proteggere i colli dallo sporco, dalla polvere e dall'umidità.

Per immagazzinamento prolungato oltre i 6 mesi decade l'efficienza per le tenute rotanti. Si consiglia un controllo periodico facendo ruotare gli ingranaggi interni a mano ruotando l'albero in entrata, in presenza di freno lamellare negativo, bisogna sbloccare il freno, con pompa idraulica o similare (per pressione di apertura freno vedi capitolo freni). L'eventuale sostituzione all'atto del l'avviamento delle guarnizioni è consigliata.

7. STORING CONDITIONS

If the product is to be stored for more than 2 months, carry out as follows:

Protect the shafts and centerings with a film of grease and/or anticorrosive protection liquids.

Completely fill the gear unit and possible multidisc brake with suitable oils.

Store in a dry place with temperature of between -5 °C and +30 °C.

Protect the packages from dirt, dust and damp.

When storing for more than 6 months the rotating seals will loose efficiency.

It is advisable to carry out a periodical check, manually turning the internal gears, turning the input shaft; with negative multidisc brake, release the brake, with hydraulic pump or similar (for brake release pressure see the chapter Brakes). Possible replacement of the gaskets on starting is advisable.

7. LAGERBEDINGUNGEN

Gehen Sie bei einer Lagerung des Produktes für einen Zeitraum von mehr als 2 Monaten wie folgt vor:

Schützen Sie die Wellen und die Zentrieransätze mit einer dünnen Fettschicht und/oder Rostschutzmitteln.

Füllen Sie das Getriebe und die eventuelle Lamellenbremse ganz mit den empfohlenen Ölsorten.

Lagern Sie die Getriebe an einem trockenen Ort mit einer Temperatur von -5 °C bis +30 °C.

Schützen Sie die Ware vor Schmutz, Staub und Feuchtigkeit.

Bei Lagerung von mehr als 6 Monaten verlieren die Wellendichtungen ihre Wirksamkeit. Überprüfen Sie regelmäßig die Getriebe, indem Sie die Zahnräder von Hand mithilfe der Antriebswelle drehen; sollte eine Lamellenbremse eingebaut sein, muss die Bremse mit einer Hydraulikpumpe oder ähnlichem freigesetzt werden (für den Öffnungsdruck der Bremse siehe das Kapitel Bremsen). Bei der Inbetriebnahme sollte die Dichtung möglichst ersetzt werden.



8. INSTALLAZIONE

L'installazione dei riduttori deve essere realizzata con cura e professionalità impiegando personale adeguatamente istruito e tecnicamente preparato.

La predisposizione al funzionamento deve avvenire rispettando tutte le indicazioni tecniche contenute nel Disegno Dimensionale dedicato.

Tutte le operazioni di installazione debbono essere ispirate ai massimi livelli di sicurezza:

- 1) nei confronti dell'incolumità degli operatori e di terzi
- 2) nei confronti di un corretto funzionamento del riduttore a ingranaggi
- 3) nei confronti della sicurezza di esercizio

A questo proposito ricordiamo che:

- E' assolutamente vietata ogni manipolazione arbitraria al riduttore e a tutti gli accessori eventualmente predisposti all'origine.
- Tutte le operazioni di sollevamento e trasporto debbono essere effettuate evitando gli urti alle estremità d'albero ed utilizzando apposite cinghie di sospensione o j golfari opportunamente predisposti. verificando che i mezzi di sollevamento siano dotati di sufficiente portata.
- E' assolutamente vietato eseguire lavori di saldatura sui riduttori.
- Qualsiasi lavoro di installazione o manutenzione deve essere eseguito con il riduttore fermo. Quindi è buona norma assicurarsi che non possano verificarsi inserimenti non intenzionali della forza motrice.
- Per quanto riguarda il lato entrata, frequentemente, i motori elettrici od idraulici sono applicati con noto sistema di flangiatura Universale Brevini (Vedere il capitolo Entrata Universale). Si ricorda che la grandezza "00" viene normalmente impiegata per motori di peso fino a 100 kg circa e coppia di 1000 Nm massimo. Nel caso di motori più pesanti si può ricorrere alla flangiatura universale S00, se disponibile, oppure a flangiate specifiche contattando il Servizio Tecnico Commerciale Brevini.
- Nel caso di collegamenti che implicano l'impiego di parti rotanti come alberi, giunti o pulegge con cinghie, è obbligatorio prevedere adeguate protezioni antinfortunistiche.

Nel caso di riduttori montati a flangia si consiglia di osservare queste prescrizioni:

Le strutture a cui vanno fissati devono essere rigide. con superfici di appoggio lavorate a macchina ben piane e prive di verniciatura, normali all'asse azionato, e con centraggi a tolleranza H8;

Le superfici a contatto debbono essere preventivamente sgrassate in modo perfetto.

8. INSTALLATION

The gear units must be carefully installed by suitably trained technical personnel.

Preparation for operation must occur in compliance with all the technical specifications given in the dedicated Dimensional Drawing.

All installation operations must comply with maximum safety regarding:

- 1) safety of operators and third parties
- 2) correct operation of the reduction gear unit
- 3) operational safety

In this respect, remember that:

- Any arbitrary tampering with the gear transmission and any accessories possibly originally arranged is strictly prohibited.
- All lifting and carrying operations must be carried out avoiding impacts on the shaft ends, using special lifting straps or the eye-bolts specially arranged, making sure that the lifting equipment is of adequate capacity.
- Welding work on the transmissions is absolutely prohibited.
- Any installation or maintenance work must be carried out with the unit stopped; therefore it is a good rule to prevent the possibility of accidental engaging of the driving power.
- Regarding the input side, often the electric or hydraulic motors are mounted with the well-known Brevini Universal flange coupling system (See the chapter Universal Input). Remember that size "00" is normally used for motors of weights up to approx. 100 kg and max. torque 1000 Nm. With heavier motors, universal flange S00 (if available) or specific flange couplings can be used: contact the Brevini Technical Commercial Service.
- With connections involving the use of revolving parts such as shafts, joints or pulleys with belts, adequate accident-prevention guards must be provided.

With flange-mounted gear units, it is advisable to comply with the following requirements:

The structures to which they are fixed must be rigid, with perfectly flat machined unpainted support surfaces, normal with driven shaft, and with centerings to tolerance H8.

The contact surfaces must be duly and perfectly greased.

8. INSTALLATION

Die Installation der Getriebe muss sorgfältig und professionell durch technisch ausgebildete Fachkräfte ausgeführt werden.

Die Vorbereitung zur Inbetriebnahme muss entsprechend den technischen Angaben der betreffenden Maßbilder erfolgen.

Bei allen Installationsarbeiten sind immer die erforderlichen Sicherheitsmaßnahmen zu ergreifen:

- 1) Sicherheit für Techniker und Dritte
- 2) Sicherer Getriebelauf Zahnräder
- 3) Betriebssicherheit

Diesbezüglich wird daran erinnert, dass:

- Jede willkürliche Veränderung der Getriebe und des eventuell werkseitig vorgerüsteten Zubehörs ist strengstens untersagt.
- Beim Anheben und Transport sind Stöße gegen die Wellenstümpfe zu vermeiden und Transportriemen oder die eigens vorgerüsteten Ösenschrauben zu verwenden. Kontrollieren Sie immer, dass das Hebezeug eine ausreichende Tragfähigkeit aufweist.
- Es ist strengsten verboten, an den Getrieben Schweißarbeiten auszuführen.
- Installations- und Wartungsarbeiten dürfen nur bei stehendem Getriebe durchgeführt werden; es hat sich daher bewährt, sich zuvor immer zu vergewissern, dass der Antrieb nicht unvohergesehen anlaufen kann.
- Antriebsseitig werden die Elektro- oder Hydraulikmotoren oft mit dem bekannten Brevini - System der Flanschverbindungen angebaut (siehe Kapitel "Universalantriebe"). Es wird daran erinnert, dass die Größe "00" gewöhnlich für Motoren bis zu einem Gewicht von ca. 100 kg und mit maximalem Drehmoment von 1000 Nm eingesetzt wird. Bei schwereren Motoren können die Universalverbindung S00 (falls verfügbar) oder spezielle Flanschverbindungen verwendet werden; wenden Sie sich diesbezüglich an die technische Verkaufsberatung Brevini.
- Bei Verbindung mithilfe von rotierenden Teilen wie Wellen, Kupplungen und Riemenscheiben ist die Installation von Unfallschutzverkleidungen gesetzlich vorgeschrieben.

Bei angeflanschten Getrieben sollten die folgenden Vorschriften beachtet werden: Sie dürfen nur an starren Strukturen befestigt werden mit ebenen maschinellenbearbeiteten unlackierten Auflageflächen, gewöhnlich an der angetriebenen Achse und mit Zentrieransätzen mit Toleranz H8;

Die Kontaktflächen müssen zuvor sorgfältig entfettet werden.



Deve essere curato l'allineamento tra il riduttore e l'albero da comandare, soprattutto nel caso di riduttori con uscita femmina scanalata che, ricordiamo, non accettano carichi esterni;

Per il fissaggio devono essere impiegate viti di classe minimo 10.9 con serraggio al 75% dello snervamento.

Durante il montaggio debbono essere assolutamente evitati urti assiali violenti che potrebbero danneggiare i cuscinetti interni

Gli organi di comando da calettare sull'albero cilindrico in uscita devono essere lavorati come da indicazioni riportate nel capitolo: "Configurazioni uscite".

The unit must be carefully aligned with the driven shaft, especially with gear units with female splined output shaft which, it must be remembered, do not take external loads.

For fixing, use screws of class min. 10.9 with tightening at 75% yielding.

During assembly, violent axial impacts must absolutely be avoided since they could damage the internal bearings. The control parts to be fitted on the cylindrical output shaft must be worked according to the specifications given in the chapter: "Output configurations".

Die Ausrichtung zwischen Getriebe und angetriebener Welle ist äußerst sorgfältig vorzunehmen, besonders bei Hohlwellen mit Keilnut, die, wie bekannt ist, keinen externen Belastungen ausgesetzt werden dürfen;

Für die Befestigung sind Schrauben mit Mindestklasse 10.9 und Anziehmoment von 75% der Streckgrenze zu verwenden. Bei der Montage sind unbedingt heftige Stöße gegen die Achsen zu vermeiden, durch die die inneren Lager beschädigt werden können.

Die Organe, die auf die zylindrische Abtriebswelle aufgezogen werden, müssen entsprechend den Anweisungen im Kapitel:

NOTA:

In caso di riduttori ortogonali, con albero maschio in ingresso, può verificarsi alla installazione che l'asse di ingresso sia deviato rispetto alla sua posizione ideale.

Per ovviare a questa situazione si consiglia:

- nel caso di collegamenti tramite giunti in grado di recuperare disallineamenti, di misurare il disallineamento esistente, di verificare il disallineamento accettabile dal giunto e nel caso in cui il valore sia maggiore di spessorare il motore per rientrare nei giochi ammissibili
- nel caso di collegamento tramite organi meccanici che non consentano recupero di giochi di procedere all'allineamento del motore tramite spessoramenti.

NB:

With right-angle gear units, with male input shaft, on installation the input shaft may possibly not be in its ideal position.

To avoid this situation:

- with connections by means of joints allowing alignment adjustment, measure the existing misalignment, check the acceptable misalignment with the joint and if the value is greater, shim the motor to bring it within permissible play
- with connection by means of mechanical parts not allowing take-up of play, align the motor by shimming.

HINWEIS:

Bei Winkelgetrieben mit Antriebswellenstumpf kann es vorkommen, dass beim Einbau die Antriebswelle von der idealen Position abweicht.

Gehen Sie in diesem Fall auf folgende Weise vor:

- Messen Sie bei Verwendung von Kupplungen, die in der Lage sind, die Fluchtungsabweichung auszugleichen, den bestehenden Fluchtungsfehler und stellen Sie die für die Kupplung maximal zulässige Abweichung fest; falls der Wert höher sein sollte, setzen Sie beim Motor Unterlegscheiben ein, bis das zulässige Spiel wieder hergestellt ist.
- nel caso di collegamento tramite orBei Verbindung mithilfe von mechanischen Organen, die keine Spielwiederherstellung erlauben, den Motor mithilfe von Unterlegscheiben ausrichten.

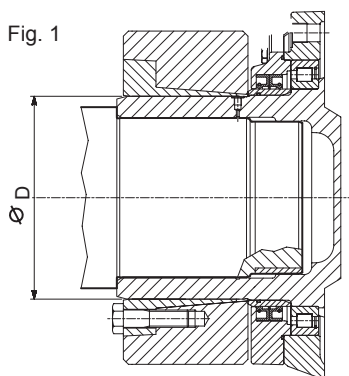


9. GIUNTI AD ATTRITO

I giunti ad attrito sono montati sull'albero dell'uscita FS.

Riportiamo di seguito le caratteristiche e gli accorgimenti da considerare per un corretto montaggio e smontaggio di questi organi ai quali è affidata la trasmissione del moto.

Fig. 1



9. FRICTION COUPLINGS

The friction couplings are mounted on FS output shaft. Given below are the characteristics and measures to be considered for correct assembly and disassembly of these parts used for the transmission of motion.

9. REIBUNGSKUPPLUNG

Die Reibungskupplungen sind auf der Abtriebswelle FS montiert.

Im Folgenden werden die Merkmale und die Anweisungen aufgeführt, die beim Ein- und Ausbau dieser Organe zur Bewegungsübertragung zu berücksichtigen sind.

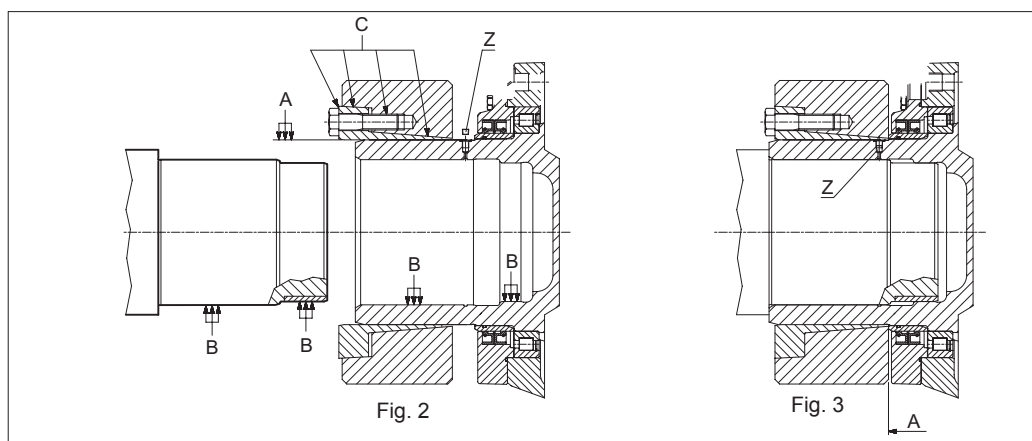
	T_N [Nm]	D [mm]	T_{GN} [Nm]	Tipo di giunto Coupling Type Kupplungsart	Codice Brevini Brevini code Code Brevini
S300	34000	185	72200	3009-185X320	448J43GT800
S400	48000	185	96000	3208-185X320	448J43GT900
S600	64000	220	139000	3208-220X370	448J43GU000
S850	90000	240	187000	3208-240X405	448J43GU100
S1200	133000	280	355000	3208-280X460	448J43GU200
S1800	190000	300	397000	3208-300X485	448J43GU300
S2500	260000	340	604000	3208-340X570	448J43GU400
S3500	370000	360	766000	3208-360X590	448J43GU500
S5000	510000	420	1163000	3208-420X680	448J43G0011

T_N = Coppia nominale riduttore / Gear unit nominal torque / Nenndrehmoment Getriebe
 T_{GN} = Coppia nominale giunto / Joint nominal torque / Nenndrehmoment Kupplung
D = Diametro albero / Hub diameter / Wellendurchmesser

MONTAGGIO

ASSEMBLY

EINBAU



1) Pulire e sgrassare accuratamente l'albero e la sua sede (Fig.2 punti B). Per facilitare i successivi smontaggi, è consigliabile realizzare il centraggio piccolo dell'albero mediante una bronza opportunamente lavorata (Fig. 3).

2) Lubrificare la sede del giunto (Fig.2 punto A). Quando è nuovo, non occorre smontare il giunto per ingrassarlo. Solo in caso di ripristino di un giunto usato, è consigliabile ingrassare le zone C.

3) Montare il giunto sul riduttore senza serrare le viti e lasciando lo spazio necessario a togliere il tappo (Fig.3 punto Z) che consente lo sfiato dell'aria durante l'accoppiamento del riduttore sull'albero della macchina.

1) Carefully clean and remove all grease from the shaft and its seat (Fig.2 points B). To facilitate subsequent disassembly, it is advisable to execute the small shaft centering by means of a suitably worked bushing (Fig.3).

2) Lubricate the joint seat (Fig.2 point A). When new, the joint does not have to be disassembled for greasing. Greasing of areas C is advisable only when reinstalling a used joint.

3) Fit the joint on the gear unit without tightening the screws and leave enough space for removing the cap (Fig.3 point Z) which allows air bleeding when fitting the gear unit on the machine shaft.

1) Die Welle und ihre Aufnahme sorgfältig reinigen und entfetten (Abb.2, Punkt B). Um den späteren Ausbau zu erleichtern, sollte die Welle mittels eines passend bearbeiteten Gleitlagers zentriert werden (Abb. 3).

2) Den Sitz der Kupplung schmieren (Abb.1, Punkt A). Eine neue Kupplung braucht zum Einfetten nicht ausgebaut zu werden. Nur bei Überholung einer gebrauchten Kupplung muss der Bereich C geschmiert werden.

3) Die Kupplung auf das Getriebe montieren, ohne die Schrauben festzuziehen, und genug Freiraum lassen, um den Stopfen (Abb.3, Punkt Z) entfernen zu können, der während des Aufsetzens des Getriebes auf die Welle das Entlüften ermöglicht.



Se la posizione di montaggio è verticale ed il relativo albero è rivolto verso il basso, assicurarsi che il giunto non possa sfilarsi e cadere. In tutti i casi, non serrare mai le viti prima di avere infilato l'albero nella sua sede.

If the mounting position is vertical and the relative shaft is facing downwards, make sure the joint cannot slip off and fall. In all cases, never tighten the screws before fitting the shaft in its seat.

Bei vertikalem Einbau mit nach unten gerichteter Welle ist sicher zu stellen, dass die Kupplung fest sitzt und nicht herausfallen kann. Auf keinen Fall die Schrauben festziehen, bevor die Welle in die eigene Aufnahme eingeführt ist.

- 4) Inserire l'albero nella sua sede. Il montaggio deve avvenire senza interferenza alcuna e questo è possibile solo con un preciso allineamento riduttore – albero. realizzabile mediante l'ausilio di opportune attrezzature di sollevamento.

- 4) Fit the shaft in its seat. Assembly must occur without any interference and this is only possible with exact gear unit/shaft alignment, carried out with the aid of suitable lifting equipment.

- 4) Die Welle in ihren Sitz einsetzen. Der Einbau muss ohne Schwierigkeiten erfolgen, Getriebe – und Welle müssen daher perfekt ausgerichtet sein. Dazu sollten geeignete Hubmittel verwendet werden.

ATTENZIONE! Il montaggio deve essere effettuato senza applicare forze assiali, colpi o urti che potrebbero danneggiare i cuscinetti del riduttore.

CAUTION! Assembly must be carried out without applying axial forces, blows or impacts that could damage the gear unit bearings.

ACHTUNG! Bei der Montage keine Axialkräfte oder Schläge und Stöße anwenden, die die Getriebelager beschädigen können.

- 5) Rimettere il tappo (Fig.2 punto Z) per proteggere l'accoppiamento dalla formazione di ossidazioni e arretrare il giunto nella posizione finale (Fig.3 punto A) prima di iniziare a serrare le viti.

- 5) Refit the cap (Fig.2 point Z) to protect the coupling from oxidation and move the joint in the final position (Fig.3 point A) before tightening the screws.

- 5) Den Stopfen (Abb.2, Punkt Z) zum Schutz gegen Oxidation wieder einsetzen und die Kupplung vor dem Festziehen der Schrauben bis in die endgültige Position zurückschieben (Abb.3, Punkt A).

- 6) Avvitare progressivamente le viti in sequenza, secondo uno schema circolare, con opportuna chiave dinamometrica, scelta secondo la distanza "X" di progettazione e tarata alla coppia di serraggio indicata nella tabella. Effettuare l'ultima passata tarando la chiave ad una coppia più alta del 3-5% rispetto a quella indicata. **Tarare nuovamente la chiave alla coppia indicata in tabella ed assicurarsi che nessuna vite possa essere ulteriormente avvitata, in caso contrario ripetere la procedura dal punto 5. Il montaggio è completo e corretto se le superfici frontali dell'anello interno ed esterno si trovano sullo stesso piano.** Non è necessario ricontrollare la coppia di serraggio dopo l'entrata in servizio del giunto.

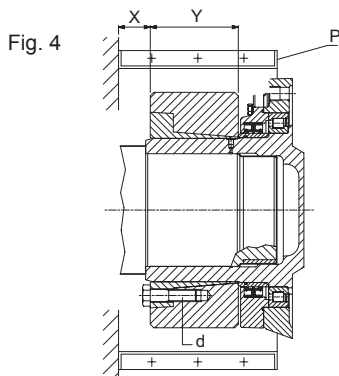
- 6) Tighten the screws gradually in a circular sequence, using a suitable torque wrench, chosen according to design distance "X" and set to the driving torque given in the table. Carry out the last tightening, setting the wrench to a torque of 3-5% higher than that given. **Set the wrench to the torque specified in the table and make sure that no screws can be further tightened, otherwise repeat the procedure from point 5. Assembly is complete and correct if the front surfaces of the inner and outer ring are on the same level.** The driving torque does not have to be checked after the joint has gone into operation.

- 6) Die Schrauben nacheinander reihum mit einem Drehmomentschlüssel anziehen, der je nach dem Abstand der Projektvorgaben "X" auszuwählen und dem in der Tabelle angegebenen Anziehmoment einzustellen ist. Einen letzten Durchgang ausführen und dafür den Schlüssel auf ein Anziehmoment einstellen, das 3-5% höher als das angegebene ist. **Den Schlüssel wieder auf das in der Tabelle angeführte Anziehmoment einstellen und sich vergewissern, dass es danach nicht möglich ist, die Schrauben weiter anzuziehen; anderenfalls ist das Verfahren ab Punkt 5 zu wiederholen. Der Einbau ist vorschriftsmäßig ausgeführt, wenn sich die gegenüberliegenden Flächen des Innen- und Außenringes auf derselben Ebene befinden.** Nach der Inbetriebnahme der Kupplung braucht das Anziehmoment nicht erneut kontrolliert zu werden.

- 7) Proteggere la zona del giunto con opportuno carter in lamiera, (Fig.4 punto P) se si prevede che pietre, sabbia o altro materiale possano danneggiare il giunto o le guarnizioni di tenuta del riduttore.

- 7) Protect the joint area with the special sheet casing, (Fig.4 point P) if there is the risk of stones, sand or other material that could damage the joint or the gear unit seals.

- 7) Falls Gefahr besteht, dass Steine, Sand oder anderes Material die Kupplung oder die Getriebedichtungen beschädigen können, ist der Kupplungsbe- reich durch eine geeignete Blechverkleidung zu schützen (Abb.4, Punkt P).



	Tipo giunto Coupling type Kupplungsart	Y			X [mm] per tipo di chiave for type of wrench für Schlüsseltyp		
			d	T [Nm]			
S300	3009-185x320	85	M16	290	50	100	58
S400	3208-185x320	112	M20	490	55	115	58
S600	3208-220x370	134	M20	490	55	115	58
S850	3208-240x405	144	M20	490	55	115	58
S1200	3208-280x460	172	M24	840	65	120	70
S1800	3208-300x485	176	M24	840	65	120	70
S2500	3208-340x570	206	M27	1250	—	125	85
S3500	3208-360x590	210	M27	1250	—	125	85
S5000	3208-420x680	246	M27	1250	—	125	85



SMONTAGGIO

DISASSEMBLY

AUSBAU

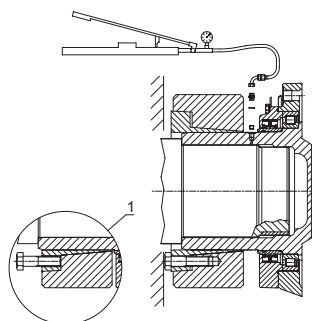


Fig. 5

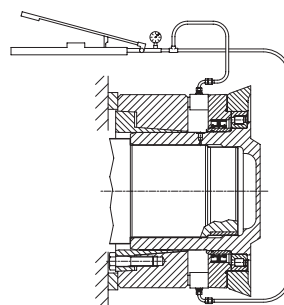


Fig. 6

1) Allentare le viti in sequenza e in più passate, fino a che il giunto si possa muovere sul mozzo. **ATTENZIONE:** non svitare completamente le viti fino a quando gli anelli non si siano separati da soli. Le elevate forze assiali potrebbero causare uno smontaggio violento, con conseguente pericolo per gli operatori.

2) Nel caso gli anelli non si separassero spontaneamente dopo avere allentato le viti, trasferirne alcune nei fori di estrazione dell'anello interno (Fig.5 dettaglio 1) e avvitandole, separare quest'ultimo dall'anello esterno.

3) Fare scorrere il giunto assialmente come da fig.5 per permettere l'utilizzo del foro G 1/8" che consente l'immissione di olio in pressione (max. 1000 bar) al fine di facilitare lo smontaggio del riduttore dall'albero della macchina. Se con l'utilizzo del metodo descritto, il riduttore non si libera, in quanto l'accoppiamento dell'albero non assicura la tenuta della pressione, allora si può agire nel modo rappresentato nella fig. 6. Se lo spazio a disposizione lo permette, utilizzando appositi spintori idraulici, occorre fare reazione su n°2 borchie a 180° che si trovano sui coperchi porta tenute, senza superare i seguenti carichi assiali:

1) Loosen the screws in repeated sequence until the joint can be moved on the hub. **IMPORTANT:** do not undo the screws completely until the rings separate on their own. High axial forces could cause a violent removal, with subsequent danger for operators.

2) If the rings do not separate on their own after loosening the screws, transfer some of them to the extraction holes of the inner ring (Fig.5 detail 1) and, tightening them, separate the inner ring from the outer ring.

3) Slide the joint axially as shown in fig.5 to allow use of the hole G 1/8" for the introduction of pressurized oil (max. 1000 bar) to facilitate removing the gear unit from the machine shaft. If, on using the method described, the gear unit cannot be freed, because the shaft coupling does not ensure pressure tightness, operate as shown in fig. 6. Available space permitting, using the special hydraulic pushers, operate on two bosses at 180° located on the seal covers, without exceeding the following axial loads:

1) Die Schrauben nacheinander in mehreren Durchgängen lockern, bis die Kupplung auf der Nabe bewegt werden kann. **ACHTUNG:** die Schrauben erst völlig herausdrehen, wenn sich die Ringe selbstständig trennen. Die beträchtlichen Axialkräfte können zu einem heftigen und für die Arbeiter gefährlichen Ablösen führen.

2) Falls sich die Kupplungsringe nach dem Entfernen der Schrauben nicht von selbst lösen sollten, einige Schrauben in die Abzugsbohrungen des Innenrings einsetzen (Abb.5, Ausschnitt 1) und durch Festziehen derselben den Innen- vom Außenring trennen.

3) Die Kupplung axial verschieben (siehe Abb.5), um die Bohrung G 1/8" benutzen zu können, die das Einfüllen von Öl unter Druck (max. 1000 bar) gestattet, um den Ausbau des Getriebes von der Maschinenwelle zu erleichtern. Sollte es nicht möglich sein, mit dem beschriebenen Verfahren das Getriebe freizusetzen, da die Passung der Welle nicht dicht genug für den Druck ist, kann auf die in Abb. 6 dargestellte Weise vorgegangen werden. Bei ausreichendem Platz können hydraulische Stößel eingesetzt werden, die 180° zu einander auf 2 Auflagen angeordnet werden, die sich auf dem Deckel der Dichtungshalter befinden; dabei dürfen die folgenden Axiallasten nicht überschritten werden:

Carico assiale / Axial load / Achslast [N]							
S300	S400	S600	S850	S1200	S1800	S2500	S3500
30000	30000	45000	50000	70000	80000	100000	115000

4) Se lo smontaggio del riduttore avviene dopo diverso tempo dalla messa in funzione, bisogna rimuovere il giunto dal mozzo, separare gli anelli conici e togliere eventuali residui di sporco o ruggine da tutte le superfici interessate al calettamento. Prima di installare nuovamente l'unità di bloccaggio, pulirla accuratamente e ripristinare la lubrificazione come indicato nella fig. 2 (punti C).

4) If the gear unit is disassembled some time after start-up, it is necessary to remove the joint from the hub, separate the tapered rings and clean any residuals of dirt or rust from all the surfaces relative to fitting. Before refitting the clamping unit, carefully clean it and lubricate as shown in fig. 2 (points C).

4) Erfolgt der Ausbau des Getriebes sehr lange nach der Inbetriebnahme, müssen die Kupplung von der Nabe abgezogen und die Kegelringen getrennt werden; anschließend sorgfältig die Oberflächen der drehfesten Verbindung reinigen und eventuellen Schmutz, Rost usw. entfernen. Vor dem Wiedereinbau der Verkeilung dieselbe sorgfältig reinigen und schmieren, wie in der Abbildung 2 (Punkt C) gezeigt wird.



10. BRACCIO DI REAZIONE

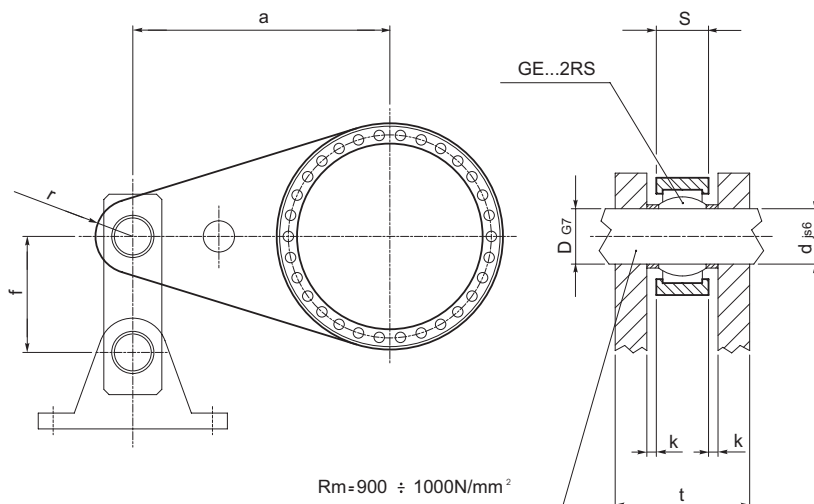
INDICAZIONI PER LA COSTRUZIONE E ANCORAGGIO DEL BRACCIO DI REAZIONE

10. TORQUE ARM

INSTRUCTIONS FOR TORQUE ARM CONSTRUCTION AND ANCHORING

10. SCHUBSTREBE

ANWEISUNGEN FÜR DEN BAU UND DIE MONTAGE DER SCHUBSTREBE



	a min [mm]	s [mm]	r min [mm]	f min [mm]	GE...2RS	D d [mm]	k [mm]	t min [mm]
S300	600	30	45	150	35	35	4	70
S400	700	32	50	160	40	40	4	72
S600	800	32	50	180	40	40	4	72
S850	1000	35	55	200	45	45	4	81
S1200	1000	40	65	230	50	50	5	90
S1800	1200	50	75	250	60	60	5	104
S2500	1400	55	85	300	70	70	5	115
S3500	1600	60	95	350	80	80	5	120
S5000	2000	70	105	380	90	90	7.5	135

MONTAGGIO DEL BRACCIO DI REAZIONE

- 1) Il punto di ancoraggio del braccio di reazione deve essere flottante in tutte le direzioni. Quindi si raccomanda l'impiego di snodi sferici in tutti i collegamenti.
- 2) Si consiglia l'impiego di snodi sferici tipo "long life" con superfici d'attrito protette con PTFE. In alternativa possono essere usati giunti del tipo "acciaio su acciaio" prevedendo la possibilità di una operazione di ingrassaggio periodica.
- 3) La biella di ancoraggio deve essere parallela al braccio di reazione per garantire, a vuoto, il gioco laterale K che garantisce libertà di movimento alla struttura in caso di deformazione.
- 4) Il supporto fisso a cui è collegata la seconda estremità della biella deve garantire un ancoraggio adeguato al carico.

TORQUE ARM ASSEMBLY

- 1) The torque arm anchorage point must be floating in all directions. Therefore ball joints must be used in all connections.
- 2) It is advisable to use long life ball joints, protecting rubbing surfaces with PTFE. Alternatively, "steel to steel" type joints can be used, providing for the possibility of periodical greasing.
- 3) The anchorage connecting rod must be parallel to the torque arm in order to guarantee, unloaded, the side clearance K which ensures free movement of the structure in the event of deformation.
- 4) The fixed support to which the second end of the connecting rod is connected must ensure adequate anchorage for the load.

MONTAGE DER SCHUBSTREBE

- 1) Der Festpunkt der Schubstrebe muss nach allen Richtungen schwimmend gelagert werden. Daher wird der Einsatz von Kugelgelenken empfohlen.
- 2) Am besten geeignet sind "langlebige" Kugelgelenke mit durch PTFE geschützten Reibungsflächen. Alternativ können Gelenke des Typs "Stahl auf Stahl" verwendet werden, die jedoch regelmäßig geschmiert werden müssen.
- 3) Die Verbindungsstange muss parallel zur Schubstrebe liegen, damit lastfrei das seitliche Spiel K gegeben ist, das die Bewegungsfreiheit der Struktur bei Verformung gewährleistet.
- 4) Die feste Lagerung des anderen Endes der Verbindungsstange muss eine angemessene Lastverankerung garantieren.



5) Il braccio di reazione e la relativa biella possono avere soluzioni di progetto diverse da quelle proposte, ma è tassativo rispettare i seguenti accorgimenti:

- Il braccio di reazione deve essere perfettamente dritto
- Se si prevedono pezzi saldati, occorre sabbare, normalizzare e correggere di macchina utensile eventuali deformazioni
- La superficie di contatto del braccio di reazione in corrispondenza della flangiatra al riduttore, deve essere perfettamente piana
- Prima di collegare il braccio di reazione al riduttore, eliminare accuratamente ogni traccia di grasso dalle superfici a contatto.

ATTENZIONE Non eseguire alcun lavoro di saldatura che coinvolga il riduttore nemmeno come messa a terra!

6) Usare sempre la chiave dinamometrica per serrare le viti di collegamento.

7) Il disegno fornisce solo un esempio indicativo, poiché, la configurazione corretta, dipende dal senso di rotazione del riduttore. Infatti, durante il lavoro, è consigliabile che la biella risulti in trazione e non in compressione. Quindi può essere conveniente il montaggio dal lato opposto, relativamente alla raffigurazione. In caso di necessità, a causa di ingombri specifici, la biella può essere montata verso l'alto.

8) Quando si esegue un montaggio tramite giunto calettatore ad attrito e braccio di reazione, occorre ricordare che i pesi del riduttore, del braccio di reazione e di tutti gli elementi ad essi collegati, inducono carichi e momenti ribaltanti che vengono sopportati dai cuscinetti del portasatelliti dello stadio d'uscita. Quindi la posizione relativa di tutte le masse che concorrono alla trasmissione della potenza deve essere valutata in sede di progetto al fine di rendere minimo il valore delle risultanti su detti cuscinetti. Per le stesse ragioni è chiaro che si deve limitare al massimo il peso dei componenti collegati al riduttore, valutando accuratamente gli spessori delle strutture effettivamente necessarie a reggere gli sforzi e decentrando tutti gli elementi che non sono funzionali alla trasmissione di potenza. Una progettazione impropria, può accorciare la vita dei riduttori causando cedimenti prematuri dei cuscinetti e degli ingranaggi a causa di eventuali eccessive deformazioni elastiche degli stadi e determinare la possibilità di slittamento e grippaggio del giunto ad attrito.

5) The torque arm and relevant connecting rod can have different design solutions to those proposed, but the following arrangements must be respected.

- The torque arm must be perfectly straight
- If welded parts are provided for, any deformations must be sanded, normalized and machine tool corrected
- The contact area of the torque arm at the flanging with the reduction unit must be perfectly flat
- Before connecting the torque arm to the gear unit, carefully remove all traces of grease from the contact surfaces.

WARNING Do not carry out any welding work involving the gear unit, even as an earthing!

6) Always use a torque wrench for tightening the connection screws.

7) The drawing is only by way of example, since the correct configuration depends on the gear unit rotation direction. In fact, during work it is advisable for the connecting rod to be in traction and not compression. Therefore mounting on the opposite side with respect to that represented may be convenient. If necessary, due to specific encumbrance the connecting rod can be assembled upwards.

8) When carrying out an assembly by means of friction coupling and torque arm, remember that the weights of the gear unit, the torque arm and all the elements connected to them, bring about loads and tipping moments that are supported by the output stage planetary carrier bearings. Therefore the relative position of all the masses involved in transmitting power must be appraised in the design phase, in order to minimize the resultant value on the bearings. Likewise, the weight of the components connected to the gear unit must be limited, carefully appraising the hicknesses of the structures actually necessary for supporting the stresses, and decentralizing all the elements not involved in power transmission. An incorrect design can shorten the life of the bearing and gears due to possible excessive elastic deformation of the stages and determine the possibility of slipping and seizing of the friction coupling.

5) Die Schubstrebe und die Verbindungsstange können andere rojektlösungen als die beschriebene aufweisen, müssen jedoch in jedem Fall die folgenden Bedingungen einhalten

- Die Schubstrebe muss perfekt gerade sein
- Bei Schweißstellen müssen eventuelle Verformungen sandgestrahlt, normalisiert und mit Werkzeugmaschinen nachgearbeitet werden
- Die Kontaktfläche der Schubstrebe auf Höhe der Flanschverbindung mit dem Getriebe muss perfekt eben sein
- Vor der Verbindung der Schubstrebe mit dem Getriebe sorgfältig alle Fettrückstände von den Kontaktflächen entfernen.

ACHTUNG Keine Schweißarbeiten am Getriebe ausführen, nicht einmal für die Erdung!

6) Verwenden Sie beim Anziehen der Schrauben immer den Drehmoment-schlüssel.

7) Die Zeichnung stellt nur ein Beispiel vor, da die genaue Konfiguration immer von der Drehrichtung des Getriebes abhängt. Während der Arbeit sollte die Schubstange immer unter Zug- und nicht unter Schubbedingungen stehen. Es kann daher angebracht sein, die Montage in Bezug auf die Abbildung auf der anderen Seite vorzunehmen. Bei Bedarf infolge besonderer Abmessungen kann die Schubstrebe in nach oben gerichteter Stellung montiert werden.

8) Bei einem Einbau mittels Reibungskupplung und Schubstrebe darf nicht vergessen werden, dass das Gewicht des Getriebes, der Schubstrebe und aller damit verbundenen Bauteile Lasten und Kippmomente verursachen, die auf den Lagern des Planetenrad-trägers der Abtriebsstufe lasten. Die Anordnung aller Gewichte, die an der Leistungsübertragung beteiligt sind, muss daher bei der Planung genau bewertet werden, um die Auswirkungen auf die genannten Lager zu minimieren. Aus denselben Gründen muss das Gewicht der mit dem Getriebe verbundenen Bauteile so weit wie möglich begrenzt werden; dabei ist die Stärke der Strukturen, die effektiv erforderlich ist, um den anfallenden Kräften standzuhalten, zu berücksichtigen und sind alle Elemente, die für die Leistungsübertragung nicht unerlässlich sind, zu verlagern. Eine schlechte Planung kann die Lebensdauer der Getriebe verkürzen, zu inem frühzeitigen Nachgeben der Lager und Zahnräder führen infolge von außergewöhnlichen Verformungen der Stufen und das Rutschen und Festfressen der Reibungskupplung verursachen.

11. LUBRIFICAZIONE

I riduttori Brevini vengono forniti privi di lubrificante; l'utilizzatore è tenuto ad effettuare il corretto riempimento prima della messa in moto della macchina.

Caratteristiche fondamentali degli oli

I parametri importanti da considerare quando si sceglie il tipo di olio sono:

- la viscosità alle condizioni nominali di funzionamento
- gli additivi

Lo stesso olio, deve lubrificare sia i cuscinetti che gli ingranaggi e tutti questi componenti convivono all'interno della stessa scatola, in condizioni di funzionamento diverse. Consideriamo i singoli parametri.

Viscosità

La viscosità nominale è riferita ad una temperatura di 40 °C, ma diminuisce velocemente all'aumentare della temperatura. Se la temperatura di funzionamento è compresa tra 50 °C e 70 °C, si può scegliere una viscosità nominale secondo la seguente tabella indicativa, scegliendo la viscosità più elevata quando si prevede la temperatura più alta.

n_2 [rpm]	50° C	70° C
> 20	VG 150	VG 220
>5	VG 220	VG 320
< 5	VG 320	VG 460

Particolare attenzione bisogna fare agli stadi in uscita molto caricati e con velocità molto basse (<1 giro/min). In questi casi bisogna ricorrere sempre ad oli con viscosità elevata e con una buona carica di additivazione Extreme Pressure (EP).

Additivi

Oltre ai normali additivi antischiuma ed antiossidanti, è importante utilizzare oli lubrificanti con additivi in grado di conferire proprietà EP (extremepressure) ed anti-usura, secondo ISO 6743-6 L-CKC o DIN 51517-3 CLP. Chiaramente quindi occorre ricercare prodotti con caratteristiche EP tanto più forti (tipo MOBILGEAR SHC) quanto più lenta è la velocità del riduttore. È opportuno ricordare che, i composti chimici sostitutivi della lubrificazione idrodinamica, si formano a scapito della carica EP originale. Quindi, in presenza di velocità molto basse e carichi elevati, è importante rispettare gli intervalli di manutenzione per non deprimere eccessivamente le caratteristiche lubrificanti dell'olio.

11. LUBRICATION

Brevini gear units are supplied without lubricant; therefore the user must carry out correct filling before starting the machine.

Fundamental characteristics of the oils

The important parameters to consider when choosing the type of oil are:

- viscosity at nominal operating conditions
- additives

The oil must lubricate the bearings and the gears and all these components work inside the same box, in different operating conditions. We will consider the individual parameters.

Viscosity

Nominal viscosity is referred to a temperature of 40 °C, but rapidly decreases with an increase in temperature. If the operating temperature is between 50 °C and 70 °C, a nominal viscosity can be chosen according to the following guide table, choosing the highest viscosity if the highest temperature is foreseen.

11. SCHMIERUNG

Die Brevini - Getriebe werden ohne Schmieröl geliefert; der Benutzer muss dieselben vor der Inbetriebnahme der Maschine mit der vorschrittmäßigen Schmierölmenge füllen.

Grundlegende schmieröleigenschaften

Bei der Schmierölauswahl sind die folgenden wichtige Parameter zu berücksichtigen:

- Viskosität bei Nennbetriebsbedingungen
- Additive

Dasselbe Öl muss sowohl Lager wie auch Zahnräder schmieren und diese Bauteile funktionieren zusammen in demselben Gehäuse unter unterschiedlichen Betriebsbedingungen. Nachfolgend werden die einzelnen Parameter kurz beschrieben.

Viskosität

Die Nennviskosität bezieht sich auf eine Temperatur von 40 °C und nimmt mit der Zunahme der Temperatur rasch ab. Liegt die Betriebstemperatur zwischen 50 °C und 70 °C, kann eine Nennviskosität laut folgender Tabelle gewählt werden, wobei bei sehr hoher Temperatur die höchste Viskosität zu wählen ist.

Special attention must be paid to very loaded output stages and with very low speeds (<1 rpm). In such cases, always use high viscosity oils and with a good amount of Extreme Pressure (EP) additive.

Additives

In addition to the normal antifoaming and antioxidant additives, it is important to use lubricating oils with additives that provide EP (extremepressure) and anti-wear properties, according to ISO 6743-6 L-CKC or DIN 51517-3 CLP. Therefore it will be necessary to find products with EP characteristics all the stronger (type MOBILGEAR SHC) the slower the gear unit speed. It should be remembered that the chemical compounds replacing hydrodynamic lubrication are formed to the detriment of the original EP load. Therefore, with very low speeds and high loads it is important to respect the maintenance periods so as not to excessively diminish the lubricating characteristics of the oil.

Besonders vorsichtig muss man bei Abtriebsstufen unter hohen Lasten und mit niedriger Drehzahl (<1 U/min) sein. In diesen Fällen muss immer Schmieröl mit hoher Viskosität und einer ausreichenden Menge an E.P. Additiven eingesetzt werden.

Additive

Neben den normalen Entschäumern und Oxidationshemmern müssen Schmieröle E.P. Additive (Extrem-Pressure) und verschleißhemmende Wirkstoffe laut ISO 6743-6 L-CKC oder DIN 51517-3 CLP enthalten. Es ist offensichtlich, dass dabei Produkte mit E.P. Eigenschaften (Typ MOBILGEAR SHC) zu wählen sind, die um so ausgeprägter sein müssen, je langsamer die Getriebedrehzahl ist. Es wird daran erinnert, dass sich die chemischen Substitutionsverbindungen der hydrodynamischen Schmierung zu Lasten des ursprünglichen EP-Gehalts bilden. Es ist daher bei sehr niedrigen Drehzahlen und hohen Belastungen sehr wichtig, dass die Wartungszeiträume zur Vermeidung einer übermäßigen Verschlechterung der Schmieröleigenschaften genau eingehalten werden.

Tipi di oli

Gli oli disponibili appartengono generalmente a tre grandi famiglie.

- 1) Oli minerali
- 2) Oli sintetici Poli-Alfa-Olefine
- 3) Oli sintetici Poli-Glicole

La scelta più appropriata è generalmente legata alle condizioni di impiego.

I riduttori non particolarmente caricati e con un ciclo di impiego discontinuo senza escursioni termiche importanti, possono certamente essere lubrificati con olio minerale.

Nei casi di impiego gravoso, quando i riduttori saranno prevedibilmente caricati molto ed in modo continuativo, con conseguente prevedibile innalzamento della temperatura, è bene utilizzare lubrificanti sintetici tipo polialfaolefine (PAO).

Gli oli di tipo poliglicole (PG) sono da utilizzare strettamente nel caso di applicazioni con forti strisciamenti fra i contatti, ad esempio nelle viti senza fine. Debbono essere impiegati con grande attenzione poiché non sono compatibili con gli altri oli e sono invece completamente miscibili con l'acqua. Questo fenomeno è particolarmente pericoloso poiché non si nota, ma deprime velocemente le caratteristiche lubrificanti dell'olio.

Oltre a questi già menzionati, ricordiamo che esistono gli oli idraulici e gli oli per l'industria alimentare.

I primi vengono usati per il comando dei freni negativi. Per una maggiore tutela dell'ambiente sottolineiamo l'esistenza di alcuni tipi biodegradabili.

I secondi trovano specifico impiego nell'industria alimentare in quanto sono prodotti speciali non nocivi alla salute.

Vari produttori forniscono oli appartenenti a tutte le famiglie con caratteristiche molto simili. Più avanti proponiamo una tabella comparativa tra le marche più note.

Types of oils

The oils available generally belong to three big families.

- 1) Mineral oils
- 2) Poly-Alpha-Olefin synthetic oils
- 3) Poly-Glycol synthetic oils

The most suitable choice is generally tied to the conditions of use.

Gear units that are not particularly loaded and with a discontinuous operating cycle, without considerable temperature ranges, can certainly be lubricated with mineral oil.

In cases of heavy use, when the gear units are very loaded and in a continuous way, with resultant temperature increase, it is best to use polyalphaolefin synthetic lubricants (PAO).

Polyglycol oils (PG) are to be used strictly in the case of applications with heavy sliding between contacts, e.g. in worms. They must be employed with great care since they are not compatible with the other oils but are completely mixable with water. This phenomenon is particularly dangerous, since it is not noticed, but rapidly diminishes the lubricating characteristics of the oil.

In addition to the above, there are also hydraulic oils and oils for the food industry.

The former are used for the command of negative brakes. For better environmental protection there are several biodegradable types.

The latter have a specific use in the food industry since they are special products that are not harmful to the health.

Various producers supply oils belonging to all the families with very similar characteristics. A comparison table of the best known brands is given later on.

Schmierölsorten

Die verfügbaren Ölsorten gehören allgemein zu drei großen Familien

- 1) Mineralöle
- 2) Synthetische Poly-Alpha-Olefin-Öle
- 3) Synthetische Polyglykolöle

Die Auswahl hängt im Allgemeinen von den Einsatzbedingungen ab.

Getriebe, die nicht im Dauerbetrieb laufen und keinen großen Belastungen und großen Temperaturschwankungen ausgesetzt sind, können problemlos mit Mineralölen geschmiert werden.

Bei Einsatz unter erschwerten Bedingungen, bei denen die Getriebe voraussichtlich hohen Lasten im Dauerbetrieb mit der entsprechenden voraussehbaren Temperaturerhöhung ausgesetzt sind, ist es angebracht, synthetische Poly-Alpha-Olefin-Öle (PAO) zu verwenden.

Die Poly-Glykolöle (PG) werden in Anwendungen benutzt, in denen starke Gleitreibungen zwischen den Kontaktflächen auftreten, wie z. B. in Schnecken. Bei ihrer Anwendung ist sehr sorgfältig vorzugehen, da sie mit anderen Schmierölen unverträglich, aber voll mit Wasser vermischbar sind. Das ist besonders gefährlich, weil es unbemerkt erfolgt und sehr schnell die Schmiereigenschaften des Öls verschlechtert.

Neben den erwähnten Ölen gibt es noch Hydrauliköl und Öle für die Lebensmittelindustrie.

Die ersten werden auf Negativbremsen eingesetzt. Zum Umweltschutz weisen wir auf einige biologisch abbaubare Ölsorten hin.

Die zweiten werden von der Lebensmittelindustrie verwendet, da sie nicht gesundheitsschädlich sind.

Einige Hersteller liefern Schmieröle, die allen Familien mit sehr ähnlichen Merkmalen angehören. An anderer Stelle finden Sie eine Vergleichstabelle der bekanntesten Ölmarken.

Contaminazione

Durante il normale funzionamento, a causa del rodaggio delle superfici, è inevitabile che si trasferiscano nell'olio delle microparticelle metalliche. Questa contaminazione, può accorciare la vita dei cuscinetti, mandando in avaria prematura il riduttore. Per limitare e controllare il fenomeno, senza ricorrere a frequenti e costosi cambi d'olio, occorre prevedere l'impiego di un opportuno sistema ausiliario di circolazione dell'olio.

Con questo sistema, si ottiene il doppio vantaggio di controllare il livello di contaminazione con l'impiego di appositi filtri e di stabilizzare la temperatura di funzionamento al livello più adeguato per garantire la viscosità voluta. Infatti, può succedere che la capacità termica specifica del riduttore è insufficiente a garantire un livello di temperatura di funzionamento corretto e stabile. Vedremo più avanti i sistemi ausiliari disponibili presso la Brevini Riduttori.

Per problemi di lubrificazione di riduttori destinati a impieghi particolari sia per la tipologia costruttiva, sia per i parametri di funzionamento, è consigliabile contattare il servizio Tecnico-Commerciale Brevini. A questo proposito ricordiamo che la Brevini Riduttori si avvale di un accordo tecnico con la Exxon Mobil in base al quale si può avere sia una consulenza preventiva mirata all'applicazione, sia il monitoraggio di applicazioni lubrificate con prodotti MOBIL.

Contamination

During normal operation, due to running-in of the surfaces, metallic microparticles will inevitably form in the oil. This contamination can shorten the life of the bearings, resulting in early breakdown of the gear unit. To limit and control this phenomenon, without resorting to frequent and costly oil changes, a suitable auxiliary oil circulating system must be provided.

This system offers the dual advantage of controlling the level of contamination with the use of special filters and stabilizing the operating temperature at a level more suitable for guaranteeing the required viscosity. In fact, the specific thermal capacity of the gear unit is sometimes insufficient to ensure a correct and stable operating temperature level. The auxiliary systems available from Brevini Riduttori will be described later on.

For lubrication problems with gear units intended for particular uses, for construction type and operating parameters, it is advisable to contact the Brevini Technical Commercial service.

In this respect, Brevini Riduttori has a technical agreement with Exxon Mobil for having preventive advice for the specific application, and the monitoring of applications lubricated with MOBIL products.

Verschmutzung

Während des normalen Betriebs entstehen durch den Abrieb der Oberflächen Mikrometallpartikel im Öl. Diese Verschmutzung kann die Lebensdauer der Lager verkürzen und zu einem Ausfall des Getriebes führen. Zur Einschränkung dieser Erscheinung ohne häufigen und kostspieligen Ölwechsel ist der Einbau einer zusätzlichen Filteranlage des Schmieröls empfehlenswert.

Diese Anlage bietet den doppelten Vorteil, einerseits den Grad der Ölverschmutzung zu reduzieren und andererseits die Betriebstemperatur auf einer für die gewünschte Viskosität geeigneten Temperaturstufe zu stabilisieren. Es kann mitunter der Fall eintreten, dass die spezifische Wärmeleistung des Getriebes nicht ausreicht, eine korrekte und stabile Stufe der Betriebstemperatur zu gewährleisten. An anderer Stelle werden die bei Brevini Riduttori verfügbaren Hilfssysteme beschrieben.

Wenden Sie sich bei Schmierproblemen von Getrieben, die sowohl bauseitig wie auch aufgrund der Betriebsparameter für besondere Anwendungen vorgesehen sind, direkt an die technische Verkaufsberatung Brevini.

In diesem Zusammenhang dürfen wir erwähnen, dass Brevini Riduttori eine technische Vereinbarung mit Exxon Mobil abgeschlossen hat, die Ihnen eine gezielte Anwendungsberatung wie auch die Überwachung von Schmieranwendungen mit Produkten MOBIL ermöglicht.

Tabella oli lubrificanti per uso generale
Table of lubricant oils for general use
Tabelle der allaemein verwendeten Schmierole

Tableau des lubrifiants pour emoloi general
Tabla de aceites lubricantes para todos los usos
Tabela de óleos lubrificantes para uso geral

Produttore Manufacturer Hersteller Marque Fabricante Produtor	Oli Minerali Mineral oils Mineralöle Huiles minérales Aceites minerales Óleos minerais			Oli Sintetici Polialfaolefine (PAO) Poly-Alpha-Olefin synthetic oils (PAO) Synthetische Poly-Alpha-Olefin-Öle (PAO) Huiles synthétiques polyalphaoléfinés (PAO) Aceites sintéticos polialfaolefinas (PAO) Óleos sintéticos polialfaolefinas (PAO)			Oli Sintetici Poliglicoli (PG) Polyglycol synthetic oils (PG) Synthetische Polyglykolöle (PG) Huiles synthétiques polyglycoles (PG) Aceites sintéticos poliglicólicos (PG) Óleos sintéticos poliglicóis (PAO)		
	ISO VG 150	ISO VG 220	ISO VG 320	ISO VG 150	ISO VG 220	ISO VG 320	ISO VG 150	ISO VG 220	ISO VG 320
ADDINOL	Transmission Oil CLP 150	Transmission Oil CLP 220	Transmission Oil CLP 320	Eco Gear 150 S	Eco Gear 220 S	Eco Gear 320 S	Luboil RS 150	Luboil RS 220	-
AGIP	Blasia 150	Blasia 220	Blasia 320	-	Blasia SX 220	Blasia SX 320	Blasia S 150	Blasia S 220	Blasia S 320
ARAL	Degol BG 150 Plus	Degol BG 220 Plus	Degol BG 320 Plus	Degol PAS 150	Degol PAS 220	Degol PAS 320	Degol GS 150	Degol GS 220	Degol GS 320
BP	Energol GR-XP 150	Energol GR-XP 220	Energol GR-XP 320	Energol EPX 150	Energol EPX 220	Energol EPX 320	Energol SG 150	Energol SG-XP 220	Energol SG-XP 320
CASTROL	Alpha SP 150	Alpha SP 220	Alpha SP 320	Alphasyn EP 150	Alphasyn EP 220	Alphasyn EP 320	Alphasyn PG 150	Alphasyn PG 220	Alphasyn PG 320
CEPSA	Engranajes HP 150	Engranajes HP 220	Engranajes HP 320	Engranajes HPX 150	Engranajes HPX 220	Engranajes HPX 320	Engranajes HPS 150	Engranajes HPS 220	Engranajes HPS 320
CHEVRON	Ultra Gear 150	Ultra Gear 220	Ultra Gear 320	Tegra Synthetic Gear 150	Tegra Synthetic Gear 220	Tegra Synthetic Gear 320	HiPerSYN 150	HiPerSYN 220	HiPerSYN 320
DEA	Falcon 150	Falcon 220	Falcon 320	Intor 150	Intor 220	Intor 20	Polydea 150	Polydea 220	Polydea 320
ERG	Roxin S EP 150	Roxin S EP 220	Roxin S EP 320	-	-	-	-	-	-
ESSO	Spartan EP 150	Spartan EP 220	Spartan EP 320	Spartan S EP 150	Spartan S EP 220	Spartan S EP 320	Glycolube 150	Glycolube 220	Glycolube 320
FUCHS	Renolin CKC 150	Renolin CKC 220	Renolin CKC 320	Renolin Unisyn CKC 150	Renolin Unisyn CKC 220	Renolin Unisyn CKC 320	Renolin PG 150	Renolin PG 220	Renolin PG 320
LUBRITECH	Gearmaster CLP 150	Gearmaster CLP 220	Gearmaster CLP 320	Gearmaster SYN 150	Gearmaster SYN 220	Gearmaster SYN 320	Gearmaster PGP 150	Gearmaster PGP 220	Gearmaster PGP 320
KLÜBER	Klüberoil GEM 1-150	Klüberoil GEM 1-220	Klüberoil GEM 1-320	Klübersynth EG 4-150	Klübersynth EG 4-220	Klübersynth EG 4-320	Klübersynth GH 6-150	Klübersynth GH 6-220	Klübersynth GH 6-320
LUBMARINE	Epona Z 150	Epona Z 220	Epona Z 320	-	Epona SA 220	Epona SA 320	-	-	-
MOBIL	Mobilgear XMP 150	Mobilgear XMP 220	Mobilgear XMP 320	Mobilgear SHC XMP 150	Mobilgear SHC XMP 220	Mobilgear SHC XMP 320	Glygoyle 22	Glygoyle 30	Glygoyle HE320
MOLIKOTE	L-0115	L-0122	L-0132	L-1115	L-1122	L-1132	-	-	-
NILS	Ripress EP 150	Ripress EP 220	Ripress EP 320	Arcol Synt 150	Arcol Synt 220	Arcol Synt 320	Ripress Synt 150	Ripress Synt 220	Ripress Synt 320
OMV	Gear HST 150	Gear HST 220	Gear HST 320	-	Gear SHG 220	Gear SHG 320	Gear PG 150	Gear PG 220	Gear PG 320
OPTIMOL	Optigear BM 150	Optigear BM 220	Optigear BM 320	Optigear Synthetic A 150	Optigear Synthetic A 220	Optigear Synthetic A 320	Optiflex A 150	Optiflex A 220	Optiflex A 320
PAKELO	Erolube EP-C ISO 150	Erolube EP-C ISO 220	Erolube EP-C ISO 320	Gearsint EP ISO 150	Gearsint EP ISO 220	Gearsint EP ISO 320	Allsint EP-C ISO 150	Allsint EP-C ISO 220	Allsint EP-C ISO 320
PENNZOIL	Super Maxol EP 150	Super Maxol EP 220	Super Maxol EP 320	-	-	-	-	-	-
Q8	Goya 150	Goya 220	Goya 320	El Greco 150	El Greco 220	El Greco 320	Gade 150	Gade 220	Gade 320
ROLOIL	EP/150	EP/220	EP/320	-	-	-	Sincat 150	Sincat 220	Sincat 320
ROYAL PURPLE	-	-	-	Synergy 150	Synergy 220	Synergy 320	-	-	-
SHELL	Omala 150	Omala 220	Omala 320	Omala HD 150	Omala HD 220	Omala HD 320	Tivela S 150	Tivela S 220	Tivela S 320
SINCLAIR	Warrior EP/ NL 150	Warrior EP/ NL 220	Warrior EP/ NL 320	-	-	-	-	-	-
SUNOCO	Sun EP 150	Sun EP 220	Sun EP 320	Duragear 150	Duragear 220	Duragear 320	-	-	-
TAMOIL	Carter EP Lubri- cant 150	Carter EP Lubri- cant 220	Carter Ep Lubri- cant 320	-	-	-	-	-	-
TEXACO	Meropa 150	Meropa 220	Meropa 320	Pinnacle EP 150	Pinnacle EP 220	Pinnacle EP 320	-	Synlube CLP 220	Synlube CLP 320
TOTAL	Carter EP 150	Carter EP 220	Carter EP 320	Carter SH 150	Carter SH 220	Carter SH 320	Carter SY 150	Carter SY 220	Carter SY 320
TRIBOL	1100/150	1100/220	1100/320	1510/150	1510/220	1510/320	800/150	800/220	800/320

**Tabella lubrificanti adatti
per uso alimentare**

(approvati secondo specifiche USDA-H1
e NSF-H1)

**Tabelle dafür den Lebensmittel-
bereich geeigneten Schmieröle**

(zugelassen laut Normen USDA-H1
und NSF-H1)

**Tabla de aceites lubricantes
aprobados para usos alimentarios**

(según especificaciones USDA-H1
y NSF-H1)

**Table of lubricants suitable
for food use**

(approved according to USDA-H1 and
NSF-H1 specifications)

**Tableau des lubrifiants
pour usage alimentaire**

(approuvés selon les spécifications
USDA-H1 et NSF-H1)

**Tabela de lubrificantes
adequados para uso alimentar**

(aprovados conforme as especificações
USDA-H1 e NSF-H1)

Produttore Manufacturer Hersteller Marque Fabricante Produtor	Oli Idrraulici Hydraulic oils Hydrauliköle Huiles hydrauliques Aceites hidráulicos Óleos hidráulicos			Oli per ingranaggi Gear oils Getriebeöle Huiles pour engrenages Aceites para engranajes Óleos para engranagens		
	ISO VG 32	ISO VG 46	ISO VG 68	ISO VG 150	ISO VG 220	ISO VG 320
AGIP	Rocol Foodlube Hi Power 32	-	-	Rocol Foodlube Hi-Torque 150	-	Rocol Foodlube Hi-Torque 320
ARAL	Eural Hyd 32	Eural Hyd 46	Eural Hyd 68	Eural Gear 150	Eural Gear 220	-
BEL-RAY	No-Tox HD Hyd Oil 32	No-Tox HD Hyd Oil 46	No-Tox HD Hyd Oil 68	No-Tox Syn Gear Oil 150	No-Tox Syn Gear Oil 220	No-Tox Syn Gear Oil 320
BP	Enerpar M 32	Enerpar M 46	Enerpar M 68	-	-	-
CHEVRON	Lubricating Oil FM 32	Lubricating Oil FM 46	Lubricating Oil FM 68	-	Lubricating Oil FM 220	-
ESSO	Nuto FG 32	Nuto FG 46	Nuto FG 68	-	Gear Oil FM 220	-
KEYSTONE	Nevastane SL 32	Nevastane SL 46	Nevastane SL 68	Nevastane EP 150	Nevastane EP 220	Nevastane EP 320
KLÜBER	Summit Hysyn FG 32	Summit Hysyn FG 46	Summit Hysyn FG 68	Klüberoil 4 UH1 N 150	Klüberoil 4 UH1 N 220	Klüberoil 4 UH1 N 320
MOBIL	DTE FM 32	DTE FM 46	DTE FM 68	DTE FM 150	DTE FM 220	DTE FM 320
NILS	Mizar 32	Mizar 46	Mizar 68	Ripress Synt Food 150	Ripress Synt Food 220	Ripress Synt Food 320
OPTIMOL	Optileb HY 32	Optileb HY 46	Optileb HY 68	Optileb GT 150	Optileb GT 220	Optileb GT 320
PAKELO	Non-Tox Oil Hydraulic ISO 32	Non-Tox Oil Hydraulic ISO 46	Non-Tox Oil Hydraulic ISO 68	Non-Tox Oil Gear EP ISO 150	Non-Tox Oil Gear EP ISO 150	Non-Tox Oil Gear EP ISO 150
ROYAL PURPLE	Poly-Guard FDA 32	Poly-Guard FDA 46	Poly-Guard FDA 68	Poly-Guard FDA 150	Poly-Guard FDA 220	Poly-Guard FDA 320
SHELL	Cassida Fluid HF 32	Cassida Fluid HF 46	Cassida Fluid HF 68	Cassida Fluid GL 150	Cassida Fluid GL 220	Cassida Fluid GL 320
TEXACO	Cygnus Hydraulic Oil 32	Cygnus Hydraulic Oil 32	Cygnus Hydraulic Oil 32	Cygnus Gear PAO 150	Cygnus Gear PAO 220	-
TRIBOL	Food Proof 1840/32	Food Proof 1840/ 46	Food Proof 1840/68	-	Food Proof 1810/220	Food Proof 1810/320

INDICAZIONI CONTROLLO OLIO CON LUBRIFICAZIONE NON FORZATA

INDICATIONS FOR OIL CONTROL DIAGRAMS WITHOUT AUXILIARY COOLING SYSTEM

HINWEISE FÜR DIE ÖLKONTROLLE OHNE DRUCKSCHMIERUNG

Montaggio orizzontale Posizione livelli

Nel caso di montaggio orizzontale del riduttore, il normale livello per garantire una corretta lubrificazione è posto sulla mezzzeria, Fig. (7). Per applicazioni con velocità di rotazione in uscita molto bassa ($n_2 \leq 5$ rpm) è consigliabile fissare il livello ad una quota superiore di 50-100 mm. Fig. (8).

E' possibile verificare con facilità il corretto livello utilizzando un tubo trasparente posizionato come da figura 8.

Nel caso in cui la velocità di uscita sia estremamente bassa ($n_2 \leq 1$ rpm), oppure se sono prevedibili lunghi periodi di fermo del riduttore, è consigliabile riempire tutta la scatola. In questo caso occorre prevedere l'impiego di un apposito serbatoio ausiliario.

Volendo montare uno strumento che consenta la verifica visiva del livello (o tramite apposito segnale elettrico), occorre eseguire un montaggio secondo lo schema Fig.(9).

Montare il tappo di sfiato al di sopra dell'indicatore di livello tramite un tubo abbastanza lungo. Collegando la parte superiore (vuota) del riduttore appena sotto allo sfato. In questo modo si eviterà la fuoriuscita di olio.

Horizontal mounting Position of levels

With horizontal mounting of the gear unit, the normal level for guaranteeing correct lubrication is located at the centre line. Fig. (7). For applications with very low output rotation speed ($n_2 \leq 5$ rpm) it is advisable to fix the level at a value higher than 50-100 mm. Fig. (8).

The correct level can be easily checked using a transparent tube positioned as shown in the figure 8.

If the output speed is extremely low ($n_2 \leq 1$ rpm), or if long gear unit downtimes are foreseen, it is advisable to fill the entire box. In this case a special auxiliary tank must be provided.

To fit an instrument for visually checking the level (or by means of a special electric signal), assembly must be done according to the drawing in Fig.(9).

Locate the breather plug over the instrument by mean of a long tube. Connect the upper (empty) part of the gearbox just under the breather by mean of a bleeding tube to prevent oil leakage.

Horizontale Einbaulage Füllstände

Bei horizontalem Getriebeeinbau liegt der normale Füllstand für eine störungsfreie Schmierung auf der Mittellinie, Abb. (7). Bei Anwendungen mit äußerst niedrigen Abtriebsdrehzahlen ($n_2 \leq 5$ U/min) sollte der Füllstand um 50 - 100 mm höher liegen. Abb. (8).

Der vorschriftsmäßige Füllstand kann leicht mit einem durchsichtigen Schlauch kontrolliert werden (siehe Abbildung 8). Bei extrem niedriger Abtriebsdrehzahl ($n_2 \leq 1$ U/min) oder bei voraussichtlichen langen Stillstandzeiten des Getriebes ist es angebracht, das Gehäuse vollständig zu füllen. In diesem Fall ist ein besonderes Zusatzgefäß einzusetzen.

Falls eine Sichtkontrolle des Ölstands (oder eine Kontrolle mittels eines elektrischen Signals) gewünscht wird, muss die Installation laut Schema der Abb. (9) vorgenommen werden.

Die Entlüfterkappe auf dem Füllstandsanzeiger mit einem ausreichend langen Schlauch montieren und den oberen (leeren) Teil des Getriebes knapp unter dem Entlüfter anschließen. Auf diese Weise wird das Austreten von Schmieröl verhindert.

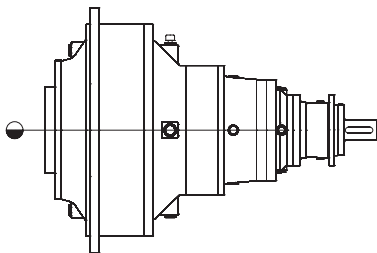


Fig. 7

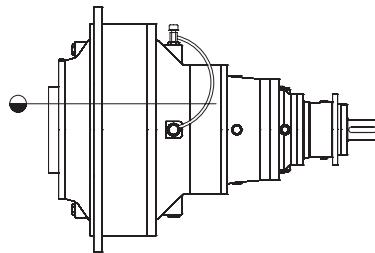


Fig. 8

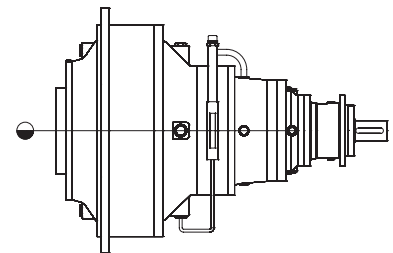


Fig. 9

Vaso di espansione

Nel caso di montaggio verticale e, comunque, ogni volta si renda necessario riempire completamente il riduttore, occorre rispettare alcune regole.

All'atto del riempimento, nella parte superiore, in corrispondenza della tenuta rotante dell'albero di uscita, si può formare una bolla d'aria, che deve essere eliminata per evitare l'insufficiente lubrificazione della tenuta stessa. Inoltre sapendo che il volume dell'olio aumenta con la temperatura, occorre predisporre un serbatoio ausiliario che consenta all'olio di espandersi senza creare pericolose pressioni interne al riduttore.

Expansion tank

Several rules must be followed with vertical mounting, and in any case whenever the gear unit has to be completely filled. During filling, an air bubble can form in the upper part, at the output shaft revolving seal, and which must be eliminated in order to avoid insufficient lubrication of the seal. Also, since the volume of oil increases with the temperature, an auxiliary tank must be provided to allow the oil to expand without creating dangerous pressures inside the gear unit.

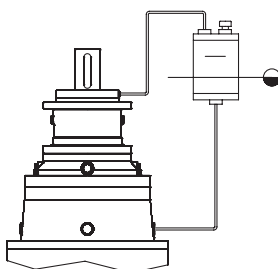


Fig. 10

Expansionsgefäß

Bei vertikalem Einbau und in allen Fällen, in denen das Getriebe vollständig gefüllt werden muss, sind einige wichtige Regeln einzuhalten.

Während des Füllens kann sich im oberen Teil in Höhe der Wellendichtung eine Luftblase bilden, die zur Vermeidung ungenügender Schmierung beseitigt werden muss. Da sich das Ölvolumen mit steigender Temperatur erhöht, muss ein Hilfsbehälter eingebaut werden, der die Ausdehnung des Öls ausgleicht und gefährliche Drücke im Inneren des Getriebes verhindert.

Per il dimensionamento occorre determinare il volume (V_e) di espansione dell'olio alla temperatura di funzionamento:

For dimensioning, the oil expansion volume (V_e) at operating temperature must be determined:

Für die Bemessung des Behälters muss das Ausdehnungsvolumen (V_e) des Öls bei Betriebstemperatur berechnet werden:

$$V_e = V_t \times \Delta T / 1000$$

V_t = volume totale dell'olio

ΔT = differenza tra temperatura di funzionamento e temperatura ambiente

V_t = total volume of oil

ΔT = difference between operating temperature and ambient temperature

V_t = Gesamte Ölmenge

ΔT = Unterschied zwischen Betriebs- und Umgebungstemperatur

La capacità (V_s) del vaso di espansione è:

The capacity (V_s) of the expansion tank is:

Das Aufnahmevermögen (V_s) des Expansionsbehälters ist:

$$V_s = 2 \times V_e$$

Per eliminare l'eventuale aria residua, devono essere collegati il foro presente nella zona più alta del riduttore e la parte superiore del vaso di espansione; quest'ultimo deve essere posto ad una altezza tale da garantire il pieno riempimento del riduttore al livello minimo. Si consiglia di realizzare il tubo di spurgo o lo stesso vaso di espansione con materiale trasparente, per poter verificare con facilità l'esatta posizione del livello del lubrificante.

To remove any residual air, the holes in the top part of the gear unit and the upper part of the expansion tank must be connected; the latter must be located at a height guaranteeing complete filling of the gear unit up to the minimum level. It is advisable to make the bleeding tube or the expansion tank with transparent material, to be able to easily check the exact position of the lubricant level.

Zur Entlüftung der Restluft ist die Bohrung im höchsten Teil des Getriebes mit dem Oberteil des Expansionsgefäßes zu verbinden; letzteres muss auf einer Höhe angeordnet werden, die gewährleistet, dass das Getriebe immer bis zum Mindeststand gefüllt ist. Es ist angebracht, einen Entlüftungsschlauch und ein Expansionsgefäß aus durchsichtigem Material zu verwenden, um jederzeit auf leichte Weise den Schmierölstand kontrollieren zu können.

Montaggio verticale in linea e versioni ortogonali

I riduttori debbono essere completamente pieni, quindi occorre montare il vaso di espansione. Come detto in precedenza, è molto importante collegare lo sfiato superiore del riduttore al vaso di espansione per consentire all'olio di risalire fino all'anello di tenuta rotante dell'albero superiore del riduttore.

Volendo montare uno strumento che consenta la verifica visiva (o tramite apposito segnale elettrico), lo strumento sarà collocato sul fianco del serbatoio

Vertical mounting in-line and right-angle versions

The gear units must be completely full, then the expansion tank must be fitted. As already stated, it is very important to connect the top breather to the expansion tank in order to allow the oil to rise up to the rotating seal ring of the gear unit upper shaft.

To fit an instrument for visual checking (or by means of a special electric signal), the instrument must be placed on the side of the tank.

Vertikaleinbau von In-Line- und Winkelgetrieben

Die Getriebe müssen vollständig gefüllt sein; daher ist immer ein Expansionsbehälter erforderlich. Wie bereits ausgeführt wurde, ist es sehr wichtig, dass die obere Entlüftung des Getriebes an das Expansionsgefäß angeschlossen wird, damit das Schmieröl die Wellendichtung der oberen Getriebewelle erreichen kann.

Falls eine Sichtkontrolle des Ölstands (oder eine Kontrolle mittels eines elektrischen Signals) gewünscht wird, muss das Gerät auf der Seite des Behälters angeordnet werden.

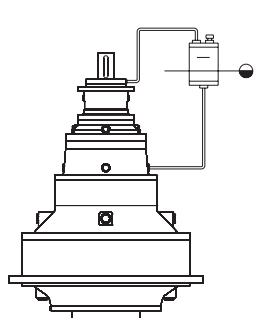


Fig. 11

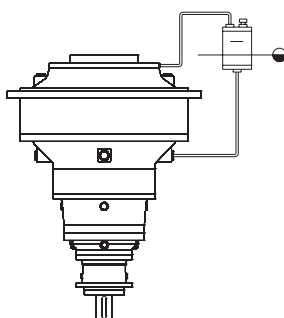


Fig. 12

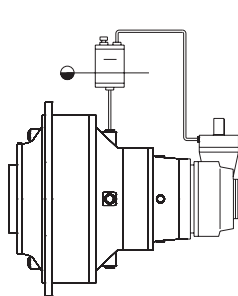


Fig. 13

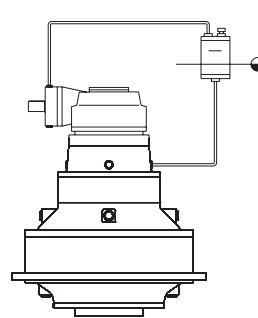


Fig. 14

SISTEMI AUSILIARI DI RAFFREDDAMENTO E FILTRAZIONE

Nel caso la potenza trasmessa sia superiore alla potenza termica dissipabile dal riduttore, è necessario l'impiego di un sistema ausiliario di raffreddamento (aria-olio), in grado di smaltire la potenza termica in eccedenza e di mantenere anche un buon livello di pulizia dell'olio lubrificante, attraverso la filtrazione continua.

Per assolvere questa funzione, la Brevini Riduttori propone tre unità di raffreddamento in grado di dissipare rispettivamente 5, 10, 20 kW.

AUXILIARY COOLING AND FILTERING SYSTEMS

If the power transmitted is higher than the thermal power that can be dissipated by the gear unit, an auxiliary cooling system (air-oil) able to dissipate the excess thermal power and also maintain a good level of cleaning of the lubricating oil through constant filtering, must be used.

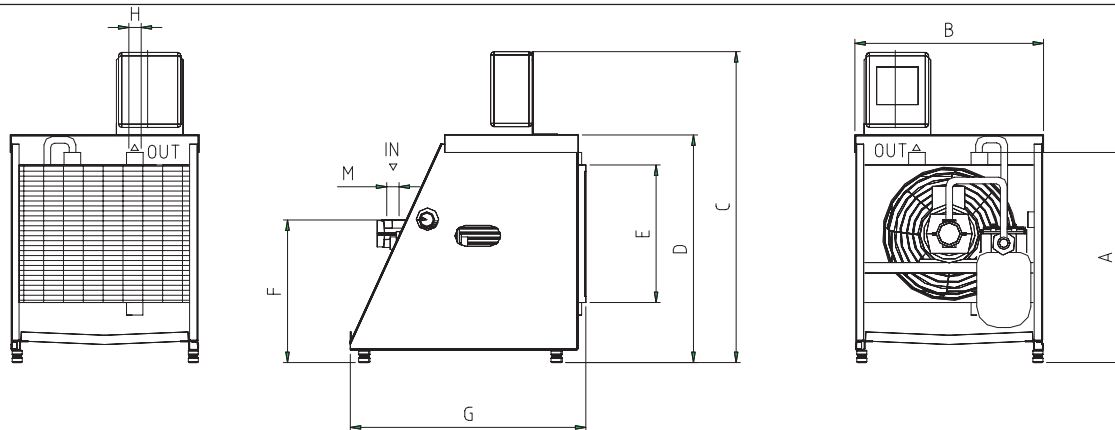
To carry out this function, Brevini Riduttori proposes three cooling units able to dissipate 5, 10, 20 kW respectively.

ZUSÄTZLICHE KÜHL- UND FILTERRANLAGE

Falls die übertragene Leistung höher ist als die vom Getriebe abführbare Wärmeleistung muss ein zusätzliches Kühlsystem (Lüft-Öl) installiert werden, das in der Lage ist, die überschüssige Wärmeleistung abzuführen und durch Dauerfiltration das Schmieröl auf einem ausreichend sauberen Niveau zu halten.

Brevini Riduttori bietet zu diesem Zweck drei Kühleinheiten mit einer Wärmedissipation von jeweils 5, 10, 20 kW an.

Fig.15



	A	B	C	D	E	F	G	H	M
LOC-ORF 007	480	450	750	550	260	330	570	1/2"	1"
LOC-ORF 011	520	450	790	590	300	330	570	3/4"	1"
LOC-ORF 023	780	695	1040	845	440	330	700	1"	1" 1/4

Dati tecnici

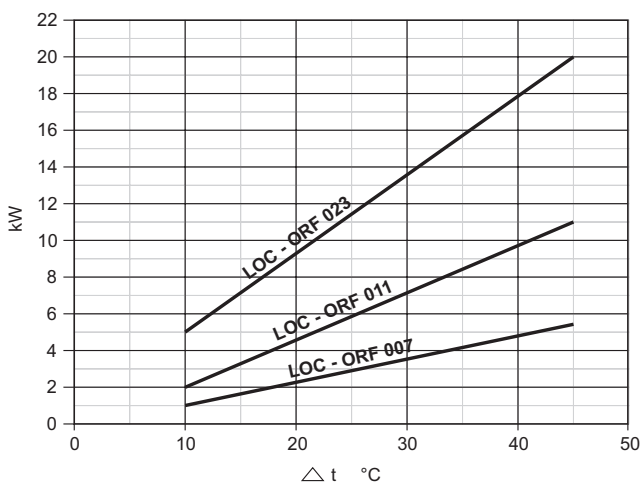
I valori indicati nel diagramma sono riferiti ad olio idraulico con viscosità cinematica di 220 cSt a 40 °C e temperatura ambiente di prova pari a 20 °C.

Technical data

The values indicated in the diagram refer to hydraulic oil with a kinematic viscosity of 220 cSt at 40 °C and an ambient temperature during testing of 20 °C.

Technische Daten

Die in dem Diagramm aufgeführten Werte beziehen sich auf Hydrauliköl mit einer kinematischen Viskosität von 220 cSt bei 40 °C und einer Prüfumgebungstemperatur von 20 °C.



$$\Delta t = (T_{\text{olio IN}} - T_{\text{aria IN}})$$

$$\Delta t = (T_{\text{oil IN}} - T_{\text{air IN}})$$

$$\Delta t = (T_{\text{Öl IN}} - T_{\text{Luft IN}})$$

	Unità / Unit / Einheit	LOC-ORF 007	LOC-ORF 011	LOC-ORF 023
Portata / Flow / Menge	l/min	6	12	28
Diametro ventola / Fan diameter / Gebläsedurchmesser	mm	325	400	538*
Potenza dissipata / Dissipated power / Verlustleistung (T aria / air / Luft - olio / oil / Öl = 40 °C)	kW	4.8	9.9	18.6
Perdita di carico / Load loss / Druckverlust	Kpa	0.9	1.8	4
Motore elettrico / Electric motor / Elektromotor	Gr- kW – poli / poles / Pole -IP	71 -0.37-4- 55F	71-0.75-4-55F	80-0.75-4-55F
Pressione massima / Max pressure / Höchstdruck	bar	5	5	5
Capacità filtro / Filter capacity / Filterleistung	micron	25	25	25
Rumorosità / Noise level / Lärmpegel	dB (A) 1m	70	73	82*
Peso / Weight / Gewicht	Kg	35	40	60*

Le centraline sono composte da uno scambiatore di calore aria-olio, un filtro, un motore elettrico, una pompa a tre viti con valvola di sicurezza e un ventilatore coassiale e solidale alla pompa, con palette inclinate in funzione della frequenza di azionamento del motore per contenere la rumorosità.

Il sistema è dotato di un termostato che consente l'avviamento della pompa solo quando la temperatura dell'olio è compresa tra 20 °C e 30 °C per evitare di pompare olio freddo, eccessivamente viscoso, con conseguente innalzamento della pressione nel circuito.

E' dotato inoltre del necessario quadro elettrico; per ulteriori informazioni contattare il Servizio Tecnico Commerciale della Brevini Riduttori.

Volendo montare un sistema ausiliario diverso, ricordiamo che è assolutamente sconsigliato l'impiego di impianti con serbatoio esterno.

Nel caso in cui si renda necessario un serbatoio ausiliario (per es. per raffreddare più riduttori con un unico impianto) consigliamo di contattare il Servizio Tecnico Commerciale della Brevini Riduttori. Progettando un circuito di circolazione dell'olio è consigliabile aspirare nel punto più basso, così questo ramo del circuito può servire anche a vuotare il riduttore. In ogni caso i punti di aspirazione e mandata dell'olio debbono essere sufficientemente lontani tra loro per garantire l'attraversamento del riduttore dell'olio fresco.

Il diametro dei fori di passaggio dell'olio, soprattutto in aspirazione, è molto importante. Infatti, in presenza di fori troppo stretti, la pompa tende a cavitare. Non potendo modificare la portata della pompa, che è funzione della potenza da smaltire, occorre verificare la capacità dei fori. Quando si aspira l'olio dai supporti in entrata o dalle flange delle riduzioni veloci, l'impiego di un solo foro, può essere insufficiente a smaltire tutta la portata pertanto occorre collegare 2 o 3 fori mediante un collettore collegato al tubo di aspirazione.

La mandata è solitamente meno problematica poiché, nel caso di portata naturale insufficiente, si genera una piccola pressione che garantisce il flusso.

Per un corretto dimensionamento del circuito, si consiglia di seguire le seguenti regole.

Aspirazione:

aspirare da più fori quando, usando un solo foro, la velocità dell'olio V è superiore a 1.30 m/s;

Mandata:

mandare in più fori quando, usando un solo foro, la velocità dell'olio V è superiore a 2.10 m/s.

The units are formed of an air-oil cooler, a filter, an electric motor, a pump with three screws with safety valve and a coaxial fan integral with the pump, with impellers inclined according to the frequency of motor operation to limit noise.

The system is equipped with a thermostat that allows pump start only when the oil temperature is between 20 °C and 30 °C to avoid pumping cold, and excessively viscous oil, with subsequent pressure rise in the circuit.

It is also equipped with the necessary electrical panel; for further information contact the Brevini Riduttori Technical Commercial Service.

If a different auxiliary system is to be fitted, do not use systems with an external tank.

If an auxiliary tank is required (e.g. for cooling several gear units with a single system) it is advisable to contact the Brevini Riduttori Technical Commercial Service.

In designing an oil circulating circuit it is advisable for suction to be in the lowest point, so that this branch of the circuit can also be used to drain the gear unit. In any case, the oil suction and delivery points must be far enough apart to ensure fresh oil crossing the gear unit.

The diameter of the oil passage is very important, above all in suction. In fact, with too narrow holes, the pump tends to cavitate. Not being able to change the pump delivery, which is a function of the power to be dissipated, the capacity of the holes must be verified.

When sucking from input shafts or the flanges of the fast reducers, the use of one hole may be insufficient to dissipate all the flow therefore 2 or 3 holes must be connected by means of a manifold connected to the suction pipe.

Delivery is usually less problematic since, in the event of insufficient natural capacity, a small pressure is generated which guarantees the flow.

For correct dimensioning of the circuit, it is advisable to follow these rules.

Suction:

provide for suction from several holes when, using just one hole, the oil velocity V is higher than 1.30 m/s;

Delivery:

deliver in several holes when, using just one hole, the oil velocity V is higher than 2.10 m/s.

Die Einheiten bestehen aus einem Luft-Öl-Wärmetauscher, einem Filter, einem Elektromotor, einer Dreischraubenpumpe mit Sicherheitsventil und einem Gebläse, das koaxial fest mit der Pumpe verbunden ist; die Ventilatorflügel sind für bessere Laufruhe in Abhängigkeit von der Einschalthäufigkeit des Motors geneigt.

Die Anlage ist mit einem Thermostaten ausgestattet, der die Pumpe nur bei einer Öltemperatur zwischen 20 °C und 30 °C einschaltet, um zu vermeiden, dass kaltes, sehr zähflüssiges Schmieröl gepumpt wird, was wiederum zu einer Druckerhöhung im Kreislauf führen würde. Zur Ausstattung gehört ebenfalls eine elektrische Schalttafel; wenden Sie sich für weitere Informationen an die technische Verkaufsberatung Brevini Riduttori. Falls der Einbau eines anderen Hilssystems gewünscht wird, weisen wir darauf hin, dass auf keinen Fall Anlagen mit externem Behälter eingesetzt werden dürfen.

Falls ein Zusatztank erforderlich sein sollte (um z. B. mehrere Getriebe mit einer einzigen Anlage zu kühlen), wenden Sie sich bitte zuvor an die technische Verkaufsberatung Brevini Riduttori.

Bei der Planung einer Ölumlaufschmierung sollte die Ansaugung am niedrigsten Punkt des Kreislaufs angeordnet werden, so dass derselbe auch zum Entleeren des Getriebes dient. Die Rück- und Vorlaufpunkte des Schmieröls müssen in jedem Fall in einem ausreichenden Abstand von einander angeordnet sein, damit das Frischöl das gesamte Getriebe durchströmen kann.

Der Durchmesser der Bohrungen des Öldurchflusses, besonders der saugseitigen, ist extrem wichtig. Bei zu engen Bohrungen tendiert die Pumpe zum Kavitieren. Da die Pumpenfördermenge, die eine Funktion der abzuführenden Leistung ist, nicht geändert werden kann, ist die Kapazität der Durchlässe zu kontrollieren. Wenn Öl von den Antriebswellen oder den Flanschverbindungen der Schnellgetriebe angesaugt wird, kann die Verwendung einer einzigen Bohrung unzureichend sein, um die gesamte Leistung abzuführen; es ist daher erforderlich, 2 oder 3 Bohrungen mit einer Sammelleitung an das Saugrohr anzuschließen.

Die Druckseite weist weniger Schwierigkeiten auf, da bei unzureichender Fördermenge ein kleiner Druck entsteht, der für den notwendigen Durchfluss sorgt.

Befolgen Sie für eine korrekte Bemessung des Kreislaufs die folgenden Hinweise.

Ansaugung:

Für die Ansaugung mehrere Bohrungen benutzen, wenn bei nur einer Bohrung die Ölgeschwindigkeit V höher als 1.30 m/s ist; Druckseite:

Für die Förderung mehrere Bohrungen benutzen, wenn bei nur einer Bohrung die Ölgeschwindigkeit V höher als 2.10 m/s ist.

Fig.16

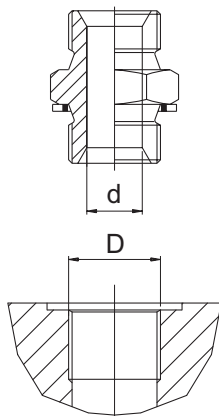


Tabella velocità olio / Oil velocity table / Tabelle Ölgeschwindigkeit [m/s]				
Diam. fori / Hole diameter Durchm. Bohrungen		Portata pompa / Pump flow Pumpendurchsatz [l/min]		
D (nom.)	d [mm]	6	12	20
G 1/4"	7	2.59	5.19	8.6
G 3/8"	10	1.27	2.54	4.24
G 1/2"	12	0.9	1.76	2.94
G 3/4"	16	0.5	1	1.65
G 1"	22	0.26	0.52	0.87
G 1 1/4"	30	0.14	0.28	0.47

La velocità può essere dedotta dalla tabella sopra riportata o calcolata con la seguente formula:

The velocity can be obtained from the table, or calculated with the formula:

Die Geschwindigkeit kann der vorangehenden Tabelle entnommen oder mit der folgenden Formel berechnet werden:

$$V = (Q \times 21.2) / d^2$$

dove:

V = velocità dell'olio in m/s
Q = portata in l/min
d = diametro interno del raccordo in mm

where:

V = velocity of oil in m/s
Q = flow in l/min
d = internal diameter of union in mm

wobei bedeuten:

V = Ölgeschwindigkeit in m/s

Q = Fördermenge in l/min
d = Innendurchmesser des Anschlusses in mm

Nel calcolo è stata considerata una viscosità cinematica dell'olio di 60 cSt.

In calculating, a kinematic oil viscosity of 60 cSt was considered.

Bei der Berechnung wurde eine kinematische Viskosität von 60 cSt zugrunde gelegt.

INDICAZIONI PER SCHEMI CONTROLLO OLIO CON SISTEMA AUSILIARIO DI RAFFREDDAMENTO

INDICATIONS FOR OIL CONTROL DIAGRAMS WITH AUXILIARY COOLING SYSTEM

HINWEISE FÜR SCHMIERPLÄNE MIT HILFSKÜHLSYSTEM

Per la definizione dei livelli vale quanto detto nelle pagine precedenti.

That described in the previous pages holds good for defining the levels.

Für die Festlegung des Füllstands gelten die Ausführungen auf den vorangehenden Seiten.

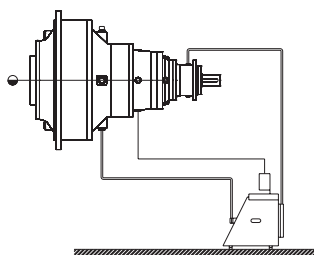


Fig.17

Riduttore verticale in linea ed ortogonale

Per i riduttori con coppia conica valgono le stesse considerazioni.

In-line and right-angle vertical gear unit

The same considerations hold good for gear units with bevel gear set.

Vertikales In-Line- und Winkelgetriebe

Für die Kegelradgetriebe gelten dieselben Betrachtungen.

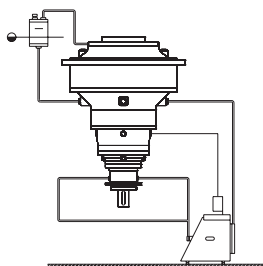


Fig.18

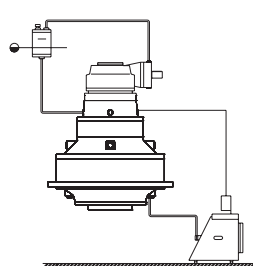


Fig.19

Attenzione

I sistemi ausiliari di filtrazione e raffreddamento dell'olio sopra descritti, rappresentano la condizione minima necessaria per ottenere il controllo della lubrificazione del riduttore. L'utente finale può sempre arricchire il sistema mediante l'aggiunta di controlli ausiliari di sicurezza sul flusso, sulla temperatura e sul livello.

Il sistema può inoltre essere dotato di rubinetti atti a facilitare le operazioni di cambio dell'olio con l'ausilio della pompa di servizio e di filtro ausiliario in aspirazione per proteggere la pompa da eventuali detriti accidentalmente provenienti dall'interno del riduttore.

CAMBIO OLIO

In assenza di un circuito di filtrazione e raffreddamento, il primo cambio dell'olio, deve essere effettuato la prima volta dopo 500-600 ore di funzionamento. Successivamente, in ogni caso, ogni 2500 ore o perlomeno una volta all'anno.

In caso di applicazioni particolarmente gravose o, al contrario, discontinue, si possono definire tempi diversi che vanno concordati preventivamente con il servizio Tecnico-Commerciale BPT o direttamente con il produttore dell'olio.

Si consiglia di compiere l'operazione del cambio olio a riduttore caldo, (circa 40 °C) per evitare il depositarsi di morchie e facilitare il completo svuotamento.

Per una corretta procedura attenersi alle norme riportate sul manuale di installazione e manutenzione in dotazione a ogni riduttore.

E' consigliabile un controllo periodico del livello dell'olio. Nel caso si rendesse necessaria un'aggiunta superiore al 10% del volume totale è bene accertare la presenza di perdite.

Important

The auxiliary oil filtering and cooling systems described above represent the minimum condition necessary for obtaining control of the gear unit lubrication. The end-user can always enhance the system with the addition of auxiliary safety controls on the flow, temperature and level. The system can also be equipped with cocks for facilitating oil change operations with the auxiliary of the service pump and suction auxiliary filter for protecting the pump from possible debris accidentally coming from inside the gear unit.

OIL CHANGE

In the absence of a filtering and cooling circuit, the first oil change must be made after 500-600 hours of operation. Subsequently, and in any case, every 2500 hours or at least once a year.

With particularly heavy or intermittent applications, different times can be defined, and which must be duly agreed with the Brevini technical commercial service or directly with the oil producer.

It is advisable to carry out the oil change with the gear unit hot, (approx. 40 °C) to prevent sludge from forming and to facilitate complete draining.

For the correct procedure comply with the rules given in the installation and maintenance manual supplied with each unit.

It is advisable to periodically check the oil level. If more than 10% the total volume has to be added, check for leaks.

Achtung

Die zuvor beschriebenen Zusatzsysteme zur Schmierölfiltration und -kühlung stellen die erforderliche Mindestbedingung für die Regelung der Getriebebeschmierung dar. Der Benutzer kann die Anlage durch Installation von zusätzlichen Sicherheits-Temperatur- und Füllstandkontrollen erweitern. Die Anlage kann außerdem mit Ventilen ausgestattet werden, die den Ölwechsel mithilfe einer Hilfspumpe und eines saugseitigen Zusatzfilters erleichtern; letzteres schützt auch die Pumpe vor eventuellen Partikeln, die aus dem Getriebe herrühren können.

ÖLWECHSEL

Falls kein Filter- und Kühlkreislauf vorhanden ist, muss der erste Ölwechsel nach 500-600 Betriebsstunden erfolgen. Anschließend ist der Ölwechsel nach jeweils 2500 Stunden oder zumindest einmal jährlich vorzunehmen.

Bei erschwerten Einsatzbedingungen oder im Gegenteil bei diskontinuierlichem Betrieb können andere Zeitabstände festgelegt werden, die zuvor mit dem Kundendienst von Brevini oder dem Schmierölhersteller abgesprochen werden müssen.

Der Ölwechsel sollte bei warmem Getriebe (ca. 40 °C) vorgenommen werden, da dadurch die Ablagerung von Bodensatz vermieden und das Entleeren erleichtert wird.

Halten Sie sich dabei immer an die Installations- und Wartungsanweisungen, die jedem Getriebe beiliegen.

Kontrollieren Sie regelmäßig den Ölstand. Sollte es notwendig sein, mehr als 10% der Gesamtmenge nachzufüllen, ist es angebracht, die Anlage auf Lecks zu überprüfen.

Quantita' di lubrificante [l]
Oil quantity [l]

Schmierölmenge [l]
Quantité de lubrifiant [l]

Cantidad de lubricante [l]
Quantidade de lubrificante [l]

		B3	V5 V6	B3A B3C	B3B	B3D	V5B V6B	Peso Weight Gewicht Poids peso peso
SL 3001	FE	5.7	11.4					
	MP	6	12					213
SL 3002	FE	7.2	14.5					
	MP	8.0	15.9					278
SL 3003	FE	7.7	15.3					
	MP	8	16					288
SL 3004	FE	8.3	16.5					
	MP	8.8	17.6					301
SC 3002	FE							
	MP							348
SC 3003	FE			8.9	8.9	8.9	17.8	
	MP			9.9	9.9	9.9	19.8	328
SC 3004	FS			9.0	9.0	9.0	18.0	
	MP			10.0	10.0	10.0	20.0	335
SL 4001	FE	5.8	11.6					
	MP	6.2	12.4					227
SL 4002	FE	7.6	15.2					
	MP	8.0	16.0					290
SL 4003	FE	8.0	16.0					
	MP	8.6	17.2					305
SL 4004	FE	8.7	17.4					
	MP	9.0	18.0					317
SC 4002	FE							
	MP							366
SC 4003	FE			10.7	10.7	10.7	21.3	
	MP			11.2	11.2	11.2	22.4	332
SC 4004	FE			11.3	11.3	11.3	22.6	
	MP			12.0	12.0	12.0	24.0	342
SL 6001	FE							
	MP							
SL 6002	FS							
	MP							423
SL 6003	FE	11.6	23.3					
	MP	10.9	21.8					436
SL 6004	FS	12.5	25.0					
	MP	11.7	23.4					444
SC 6003	FS			19.0	19.0	19.0	38.0	
	MP							564
SC 6004	FE			14.5	14.5	14.5	29.0	
	MP			15.5	15.5	15.5	31.1	496
SL 8501	FE							
	MP							
SL 8502	FS	15.8	31.6					
	MP	16.9	33.8					529
SL 8503	FE	16.2	32.4					
	MP	17.3	34.6					617
SL 8504	FE	17.0	34.0					
	MP	19.0	38.0					617
SC 8503	FS			24	24	24	48	
	MP			25	25	25	50	670
SC 8504	FE							
	MP			22	22	22	44	662

		B3	V5 V6	B3A B3C	B3B	B3D	V5B V6B	Peso Weight Gewicht Poids peso peso
SL 12001								
SL 12002	FE	20	40					666
SL 12003	FE	22	44					727
SL 12004	FE	23	46					748
SC 12003	FE			27	27	27	54	827
SC 12004	FE			18	18	18	36	837
SL 18001								
SL 18002								
SL 18003	FE	29	58					917
SL 18004	FE	30	60					945
SC 18004	FS			39	39	39	78	1050
SL 25001								
SL 25002								
SL 25003	FE	39	78					1416
SL 25004	FE	41	82					1459
SC 25004	FS			49	49	49	98	1596
SL 35001								
SL 35002								
SL 35003	FS	51	102					1896
SL 35004	FE	53	106					2009
SC 35004	FE			54	54	54	108	2110
SL 50003	FE	61	121.5					2286
SL 50004	FE	71	142					2324
SC 50005	FE			81	81	81	163	2466



Posizioni di montaggio
Mounting position

Einbaulage
Positions de montage

Posiciones de montaje
Posições de montagem

