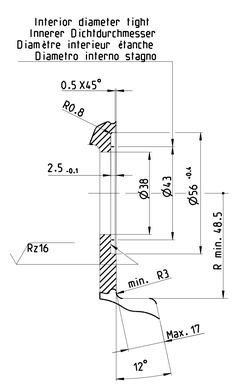
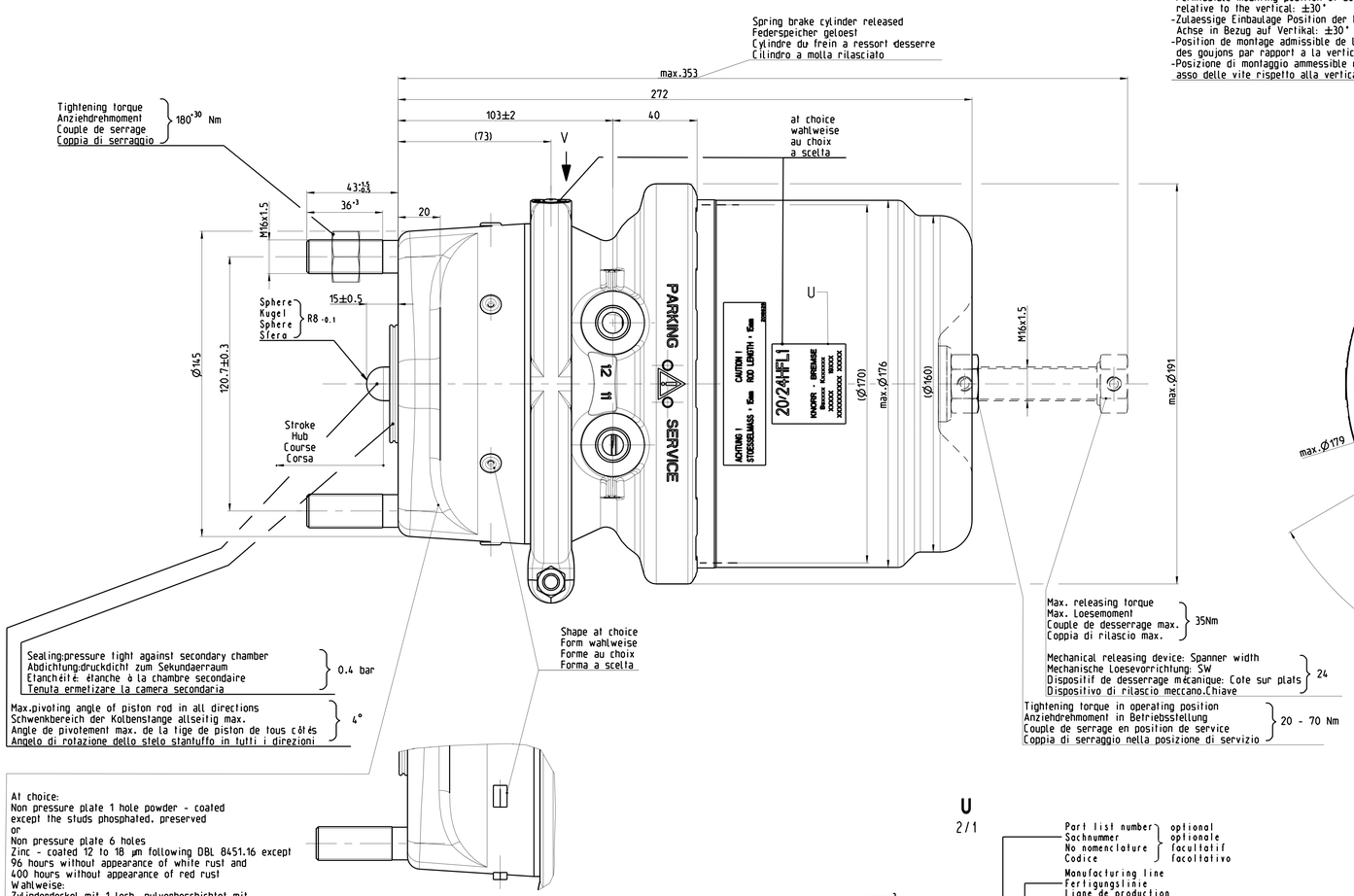
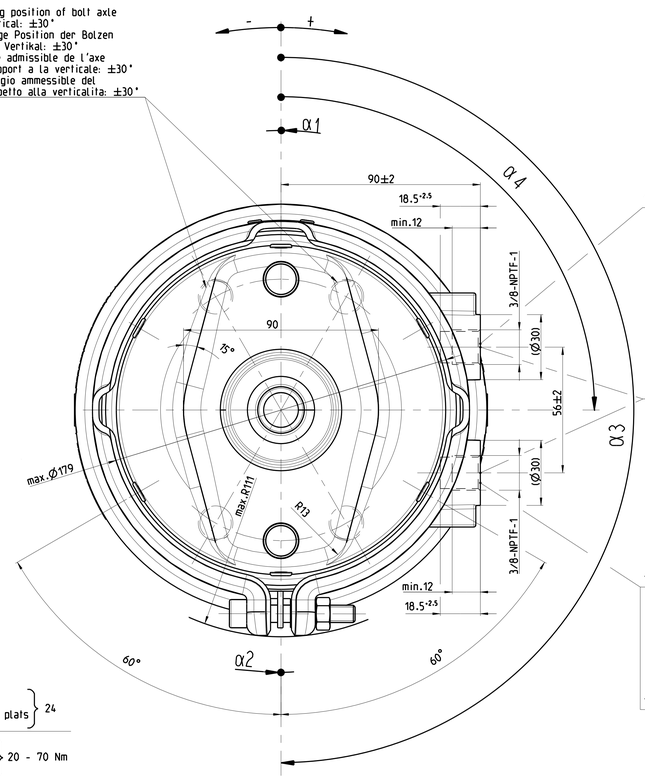
Tolerances/Toleranzen/Tolérances/Tolleranze							
Nominal dimensions in / Nominalmasse in / Cotes nominales en / Dimensioni nominali in							mm
<6	>6 :30	>30 :80	>80 :120	>120 :315	>315		
±1	±1.5	±2	±2.5	±3	±4	±3°	

- General presentation, exact orientation of the components, see below.
- Allgemeine Darstellung, fuer genaue Teileorientierung; siehe Ansicht unten.
- Présentation générale, orientation exacte des pièces, voir vue en bas.
- Presentazione generale. Per l'orientazione correcta dei pezzi, vedere il disegno sotto.



Installation dimension of brake caliper
Anschlssgeometrie des Bremssattels
Bride de fixation de l'étrier de frein
Geometria della flangia sulla staffa





-Permissible mounting position of bolt axle relative to the vertical: ±30°
-Zulaessige Einbaulage Position der Bolzen Achse in Bezug auf Vertikal: ±30°
-Position de montage admissible de l'axe des goujons par rapport a la verticale: ±30°
-Posizione di montaggio ammessible del asso delle vite rispetto alla verticalita: ±30°

12 { Spring-loaded cylinder / Federspeicherzylinder / Cylindre à ressort / Cilindro a molla

{ Tightening torque / Anziehdrehmoment / Couple de serrage / Coppia di serraggio } 40±5 Nm

11 { Service brake / Betriebsbremse / Frein de service / Freno di servizio

11 { Charging and venting of spring portion via connection 11 / Be- und Entlueftung des Federraumes ueber Anschluss 11 / Alimentation et mise à l'atmosphère de la chambre à ressort par le raccord 11 / Alimentazione ed evacuazione della attraverso attacco 11

Sealing:pressure tight against secondary chamber
Abdichtung:druckdicht zum Sekundaerraum
Etanchéité: étanche à la chambre secondaire
Tenuta ermetizare la camera secondaria } 0.4 bar

Max.pivoting angle of piston rod in all directions
Schwenkbereich der Kolbenstange allseitig max.
Angle de pivotement max. de la tige de piston de tous côtés
Angolo di rotazione dello stelo stantuffo in tutti i direzioni } 4°

Shape at choice
Form wahlweise
Forme au choix
Forma a scelta

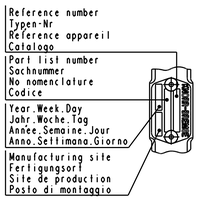
Max. releasing torque
Max. Loesemoment
Couple de desserrage max.
Coppia di rilascio max. } 35Nm

Mechanical releasing device: Spanner width
Mechanische Loesevorrichtung: SW
Dispositif de desserrage mécanique: Cote sur plats
Dispositivo di rilascio meccano.Chiave } 24

Tightening torque in operating position
Anziehdrehmoment in Betriebsstellung
Couple de serrage en position de service
Coppia di serraggio nella posizione di servizio } 20 - 70 Nm

At choice:
Non pressure plate 1 hole powder - coated
except the studs phosphated, preserved
or
Non pressure plate 6 holes
Zinc - coated 12 to 18 µm following DBL 8451.16 except
96 hours without appearance of white rust and
400 hours without appearance of red rust
Wahlweise:
Zylinderdeckel mit 1 loch, pulverbeschichtet mit
Ausnahme der Stehbolzen phosphatiert, konserviert
oder
Zylinderdeckel mit 6 Loechern
Verzinkte Beschichtung 12 - 18 µm nach DBL 8451.16 jedoch
ohne Weisrot Ausbildung nach 96 Stunden und
ohne Rotrost Ausbildung nach 400 Stunden
Au choix:
Corps avant 1 trou enrobé de poudre
sauf les goujons phosphatés, conservés
ou
Corps avant 6 trous
Zingué 12 a 18 µm suivant DBL 8451.16 sauf
96 heures sans apparition rouille blanche et
400 heures sans apparition rouille rouge
A scelta:
Corpo anteriore 1 foro rivestito con polvere
trane le viti con fosfatazione conservata
o
Corpo anteriore 6 fori
Zincato 12 a 18 µm secondo DBL 8451.16 eccetto
96 ore senza ruggine bianca i
400 ore senza ruggine rossa

V



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20/24HFL1

KNORR - BREMSE

BSxxxx Kxxxxxx

19 xxx xxxxx

xxxxx

xxxxxxxxx xxxxxxxxxx

Type Supplier
Typ Lieferant
Type Fournisseur
Tipo Fornitore

Part list number / Sachnummer / No nomenclature / Codice } optional / optionale / facultatif / facoltativo

Manufacturing line
Fertigungslinie
Ligne de production
Linea di produzione

Serial N°
Seriennummer
N° de série du produit
N° di serie del prodotto

Manufacturing site
Fertigungsort
Site de production
Posto di montaggio

Manufacturing order number / Nummer Fertigungsauftrag / N° Ordre de fabrication / N° dell'ordine di fabricazione } optional / optionale / facultatif / facoltativo

Year.Week.Day
Jahr.Woche.Tag
Année.Semaine.Jour
Anno.Settimana.Giorno

Reference number
Typen-Nr
Référence appareil
Catalogo

α1 { Mounting position of bolt axle relative to the vertical / Einbaulage Position der Bolzen Achse in Bezug auf Vertikal / Position de montage de l'axe des goujons par rapport a la verticale / Posizione di montaggio del asse delle vite rispetto alla verficalita

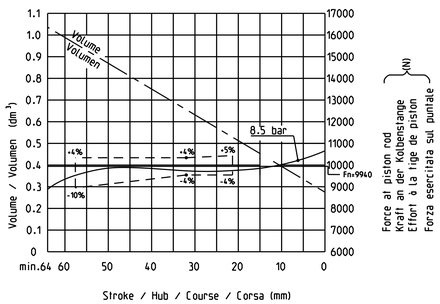
α2 { Radial breather hole position relative to bolt axle / Drehstellung der Atmungsbohrung in Bezug auf Bolzen Achse / Position du trou de respiration par rapport à l'axe des goujons / Posizione del foro di respirazione rispetto al asse delle vite

α3 { Radial position of clamp ring relative to bolt axle / Drehstellung des Spannbandes in Bezug auf Bolzen Achse / Position du collier par rapport à l'axe des goujons / Posizione della staffa di fissaggio rispetto al asse delle vite

α4 { Radial orifices position 11 and 12 relative to bolt axle / Anschlusse 11 und 12 in Bezug auf Bolzen Achse / Position des orifices 11 et 12 par rapport à l'axe des goujons / Posizione dei fori 11 e 12 rispetto al asse delle vite

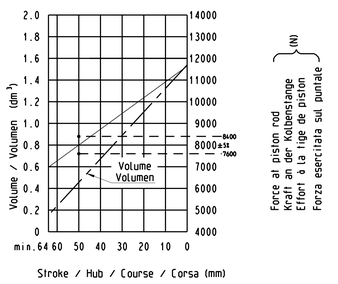
Force of return spring at stroke 0 mm
Kraftabgabe der Rueckholfeder bei Hub 0 mm
Force du ressort de rappel à une course de 0 mm
Forza della molla di ritorno a una corsa di 0 mm } F = 220 +30 -20 N

Diagram of service brake
Diagramm der Betriebsbremse
Diagramme du frein de service
Diagramma del freno di servizio } Type 20



Required release pressure
Erforderlicher Loesedruck
Pression de desserrage nécessaire
Pressione di rilascio necessaria } 5.5± 0.3 bar

Diagram of spring loaded cylinder
Diagramm des Federspeichers
Diagramme du cylindre à ressort
Diagramma del cilindro a molla } Type 24HFL1



Critical uses specifications without part failure:

Max. pressure / Hoechstdruck / Pression max. / Pressione massima } 11 } 15 bar

Max. pressure / Hoechstdruck / Pression max. / Pressione massima } 12 } 10 bar

Temperature range / Therm. Anwendungsbereich / Plage de température / Campo termico di applicazione } -40°C bis / to / à / a +80°C

Operationnal uses specifications:

Max. operating pressure / Max. Betriebsdruck / Pression de service max. / Pressione d'esercizio max. } 11 } 10.5 bar

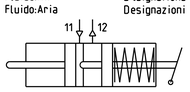
Max. operating pressure / Max. Betriebsdruck / Pression de service max. / Pressione d'esercizio max. } 12 } 8.5 bar

Permissible leakage / Zulaessige Undichtheit / Fuite admissible / Fuga d'aria ammissibile } V_n = 10 cm³ /min

General specifications:

Medium: Air / Medium: Luft / Fluide:Air / Fluido:Aria

Designation of connection threads corresponding to / Anschlussbezeichnungen nach / Désignations des raccords selon / Designazioni degli attachi secondo } DIN-ISO 6786



Graphic symbol / Schaltzeichen / Symbole graphique / Simbolo grafico } DIN-ISO 1219

Specifications for service brake actuation in parking position:

Minimun pressure / Mininum Druck / Pression minimale / Pressione minimo } 11 } 2 bar

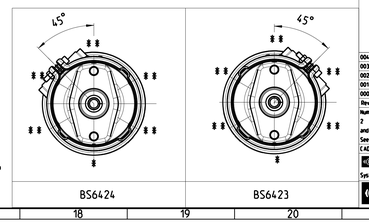
Pressure rising min. / Druckgradient min. / Montée en pression min. / Aumento della pressione min. } 11 } 3 bar/s

- Exhaust hole must be directed downwards when mounted
- Entlueftung muss im eingebauten Zustand nach unten zeigen
- L'orifice d'échappement doit être dirigé vers le bas en état monté
- Installato il foro di scarico dovra essere rivolto verso il basso

** Plug / ** Pfropfen / ** Bouchon / ** Tappo

* Breather hole / * Atmungsbohrung / * Trou de respiration / * Foro di respirazione } Ø 6

BS6423 - K043054N00		Re.Ri.Drte.Des	0°	0°	45°	45°	8.5
BS6424 - K043055N00		Li.Le.Gche.Sin	0°	0°	-45°	-45°	8.5
KB-Ref. number / KB-Bestell-Nr. / KB-N° de ref. / KB Codice	Customer's ref. no. / Kundenbestell-Nr. / No. de ref. du client / No di rif del cliente	Execution / Ausfuehrung / Exécution / Montalo	α1	α2	α3	α4	Weight / Gewicht / Masse / Peso (Kg)



Rev.	Revision Reference	Date	Name
004	C0028004 coteØ8.5-0.25 devient 18.5-2.5	06.09.2013	LH
003	C0020417	03.11.2011	LH
002	C0020417	24.10.2011	LH
001	Corps intermediaire 3/8NPTF	25.11.09	AITT
000	1ere diffusion	08.07.09	AITT

Numbers of described parts: 2
and
See Table
CAD Model No.:

Special Characteristics: 0 S/C, 0 C/C
ISO 128-30
Tolerancing Principle
General Tolerances
Made from: Carters
Surface Treatment:
Length Unit: mm Scale: 1:1
Weight: kg
Material: -x-

KNORR-BREMSE
Systèmes pour Véhicules Utilitaires France S.A.

Type 20/24HFL1

Spring Brake (Disc)
Cyl. frein double (disque)
Bistemento fren. (disco)

CAD Sys.: PRO/ENGINEER Format A0
Responsible Dept./Team: LB41
Drawn: 2009/07/08 Sperger

Knorr-Bremse Group

Release Process Documentation in EDM. Level and Status information in Watermark.

Drawing Number: Z0466596
Dwg-Rev: 004
Doc-Type: 10 Language: 71
Sheet 1 of 1

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100 mm