ООО "ПРИВОДНЫЕ ТЕХНОЛОГИИ"
DRIVE TECHNOLOGY LTD

650044, Россия, г. Кемерово, ул. Провздная, д. 2/3.
Контактные телефоны (факс): (3842) 64-07-50, 64-05-00, 64-09-19, 64-06-16
E-mail: turaev@dtmov.ru Сайт: www.dtmov.ru

Редукторные приводы ленточных конвейеров

moventas

CERTIFICATE

We have the pleasure to confirm that the company

Drive Technology Ltd.

(Russia, 650044, Kemerovo, Proezdnaya Street, 2/3)

is an authorized reseller for Moventas Santasalo Oy's products in Russia.

Thus, Drive Technology Ltd. has the right to market products and services in Russia imported by S&N LLC in St. Petersburg and originally manufactured by Moventas Santasalo Oy and its predecessors.

The validity of this certificate shall expire after a year has passed from the date of this certificate.

June 1, 2012

Pasi Jokela
Vice President, Global Sales
Moventas Santasalo Oy

Klaus Eronen
Vice President, Operations
Moventas Santasalo Oy

Moventas is an original equipment manufacturer for:

METSO | SANTASALO | VALMET | SAUERWALD | ASEA | WÄRTSILÄ | RAUMA-REPOLA

Moventas Santasalo Oy, P.O. Box 27/Santasalonkatu 5
FI-03601 Karkkila, Finland
tel. +358-20-184 7100
fax +358-20-184 7101
Domicile Jyväskylä, Business ID 2044727-2
VAT Number FI 20447272
www.moventas.com

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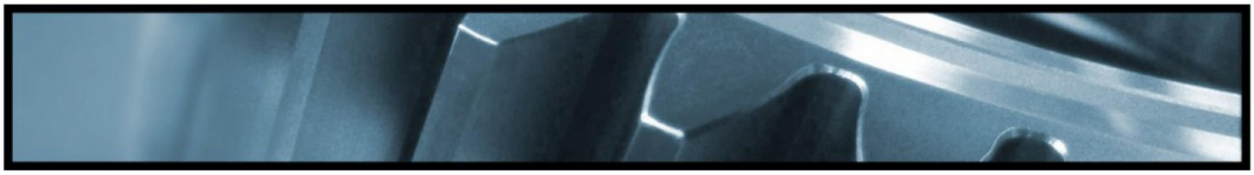

Редукторы для конвейерного оборудования

Референс лист (Россия)

Moventas- Santasalo Oy,Santasalonkatu 5, P.O. Box 27, FIN-03601 Karkkila, Finland, www.moventas.com
Тел.. +358 20 484 132, Факс +358 20 484 133, Domicile Jyväskylä
Рег.№ 0949196-9, ИНН FI09491969, Нордеа банк 233318-22420

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№	*Наименование*	*Тип редуктора*	*Передаточное число, i*	*Кол-во*	*Мощность, кВт*
1.	ОАО «Кокс», шахта «Романовская»	D3RSF70	31,047	2	250
2.	ОАО «Кокс», шахта «Романовская»	D3RSF50	25,6467	3	160
3.	ОАО «Кокс», шахта «им. Тихова»	D3RSF70	31,047	3	250
4.	ОАО «Кокс», шахта «Бутовская»	D3RSF70	25,5275	8	250
5.	ОАО «Кокс», шахта «Бутовская»	D3RSF50	20,1175	4	160
6.	ОАО «СУЭК», шахта «Талдинская Западная - 1»	D3RST82XO	20,6128	13	500
7.	ОАО «СУЭК», шахта «Талдинская Западная - 2»	D3RST82XO	20,6128	14	500
8.	ОАО «УК «Заречная», шахта «Октябрьская»	D2PSF100	22,556	3	710
9.	ЗАО Распадская УК, ООО «МУК-96»	D3RST60XO	17,582	4	250
10.	ЗАО Распадская УК, шахта «Распадская»	D2PSF90	23,1167	4	500
11.	ЗАО Распадская УК, шахта «Распадская»	D3RST60XO	19,723	7	250

Общество с ограниченной ответственностью «Приводные технологии»

650044, г. Кемерово, ул. Проездная, 2/3.
Контактные телефоны (факс): (3842) 64-07-50, 64-05-00, 64-09-19, 64-06-16
E-mail: dtech@gshosnab.ru info@gshosnab.ru

КОНИЧЕСКО-ЦИЛИИНДРИЧЕСКИЕ РЕДУКТОРЫ ФЛАНЦЕВОГО ИСПОЛНЕНИЯ (КРЕПЛЕНИЕ ДВИГАТЕЛЯ ЧЕРЕЗ ФОНАРЬ)

Информация по подбору коническо-цилиндрических редукторов фланцевого исполнения серии ХО производства фирмы «Moventas» (Финляндия) по мощности электродвигателей:

Таблица 1.

Таблица подбора редукторов серии ХО				
Мощность двигателя кВт.	Частота вращения об/мин.	**i=20** Коническо-цилиндрический	**I=25** Коническо-цилиндрический	**i=31,5** Коническо-цилиндрический
55	1500			
75	1500			
90	1500			
110	1500			D3RST50XO
132	1500		D3RST50XO	D3RST50XO
160	1500	D3RST50XO	D3RST50XO	D3RST60XO
200	1500	D3RST50XO	D3RST60XO	D3RST60XO
250	1500	D3RST60XO	D3RST60XO	D3RST70XO
315	1500	D3RST60XO	D3RST70XO	D3RST82XO
400	1500	D3RST70XO	D3RST82XO	D3RST82XO
500	1500	D3RST70XO	D3RST82XO	
630	1500	D3RST82XO		

Термическая мощность кВт, при температуре +25ºС со встроенным вентилятором на входном валу и частоте вращения электродвигателя 1500об/мин.

Таблица 2.

Наименование	i=20	i=25	i=31,5
D3RST50XO	348	356	359
D3RST60XO	494	505	513
D3RST70XO	580	588	593
D3RST82XO	783	795	807

Точные передаточные числа i=20…31,5:

Таблица 3.

D3RST50XO	**D3RST60XO**	**D3RST70XO**	**D3RST82XO**
20,2699	19,9718	19,7571	20,6128
23,0353	23,0353	22,6223	23,3094
26,2316	25,8458	25,5275	26,1701
29,1533	28,7246	29,3093	29,1515
33,0623	33,0623	33,7353	32,3750
37,0069	37,0069	37,7428	35,8940

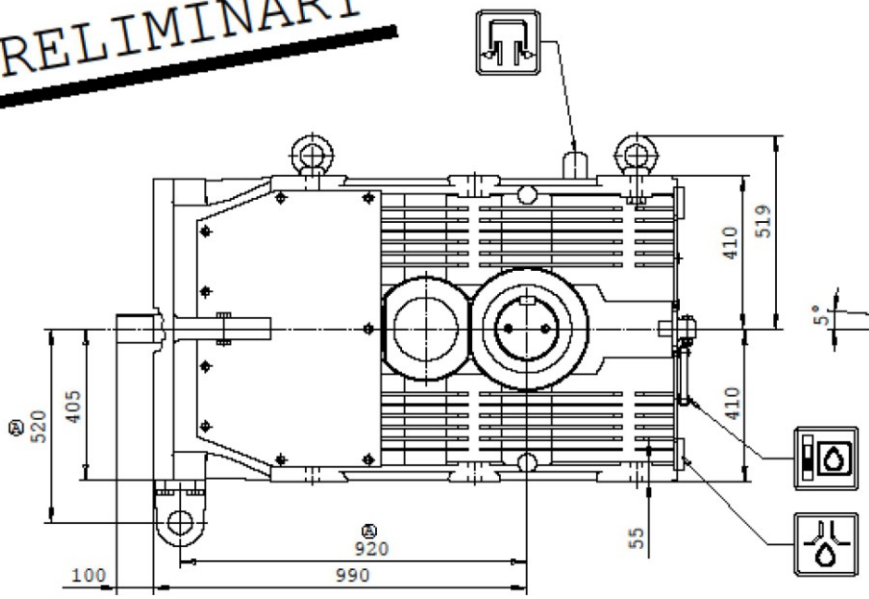
*** Общие критерии, использованные для составления данной таблицы:**

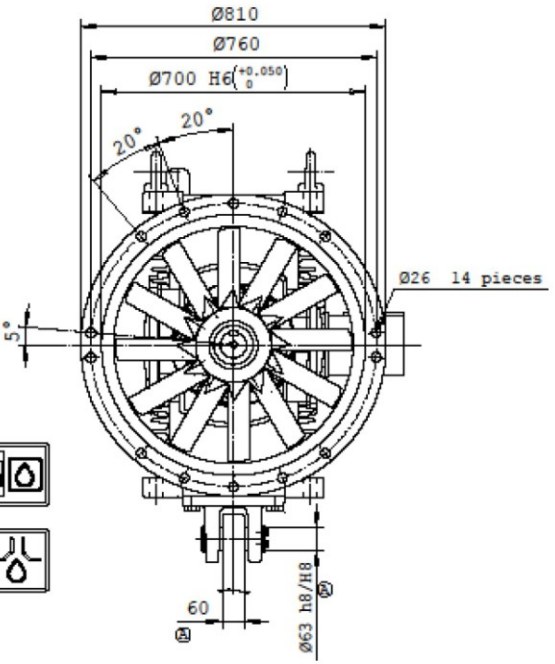
- Сервис-фактор (отношение номинальной мощности редуктора к номинальной мощности двигателя) P_{N1} / P_1, Fs более 1,6.
- Расчетный ресурс редукторов более **100 000** часов

Техническое описание:

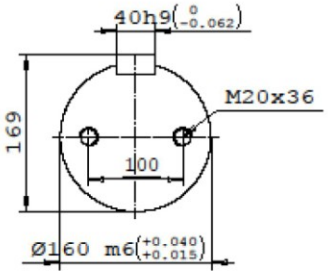
- Трехступенчатый коническо-цилиндрический редуктор серии ХО универсальный (подходит для любого монтажного положения 03/04), симметричный.
- Доступные передаточные числа i=14….80 (точные передаточные числа i=20…31,5 указаны в таблице 3)
- Предусмотрен монтаж на опоре крутящего момента или на фундаменте.
- Исполнение со сплошным выходным валом – по умолчанию. Полый выходной вал – по запросу.
- Встроенный вентилятор повышенной эффективности, универсального направления вращения на входном валу, с направляющими кожухами.
- Универсальный корпус с оребрением, повышающий эффективность охлаждения.
- Таконитовые уплотнения на входном и выходном валах.
- Специальный дизайн корпуса с фланцем со стороны входного вала, с возможностью установки несущего «фонаря» для присоединения фланцевого электродвигателя (фонарь предназначен для размещения тормозного устройства, соединительной муфты или гидромуфты).
- Указатель уровня масла.
- Указатель температуры масла.
- Технологические места на подшипниковых опорах для установки датчиков температуры и вибрации.
- Сапун с фильтром для защиты от угольной пыли (отверстия для сапуна на обеих половинках корпуса)
- Отверстия для фундаментного крепления (на обеих половинках корпуса)
- Кронштейн для крепления опоры крутящего момента (отверстия для крепления кронштейна на обеих половинках корпуса)
- Рым-болты для локального перемещения и монтажа
- Система смазки: масляная ванна (разбрызгиванием).

PRELIMINARY

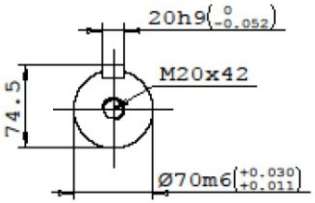


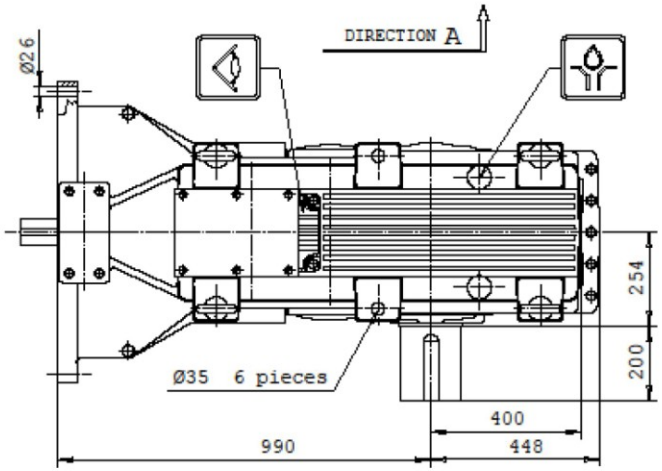


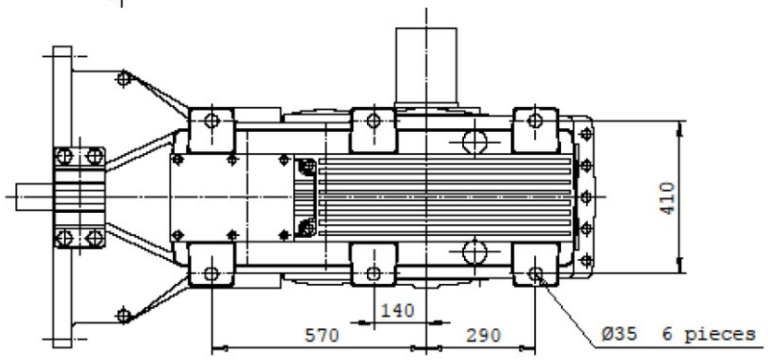
Low speed shaft



High speed shaft







DIRECTION A

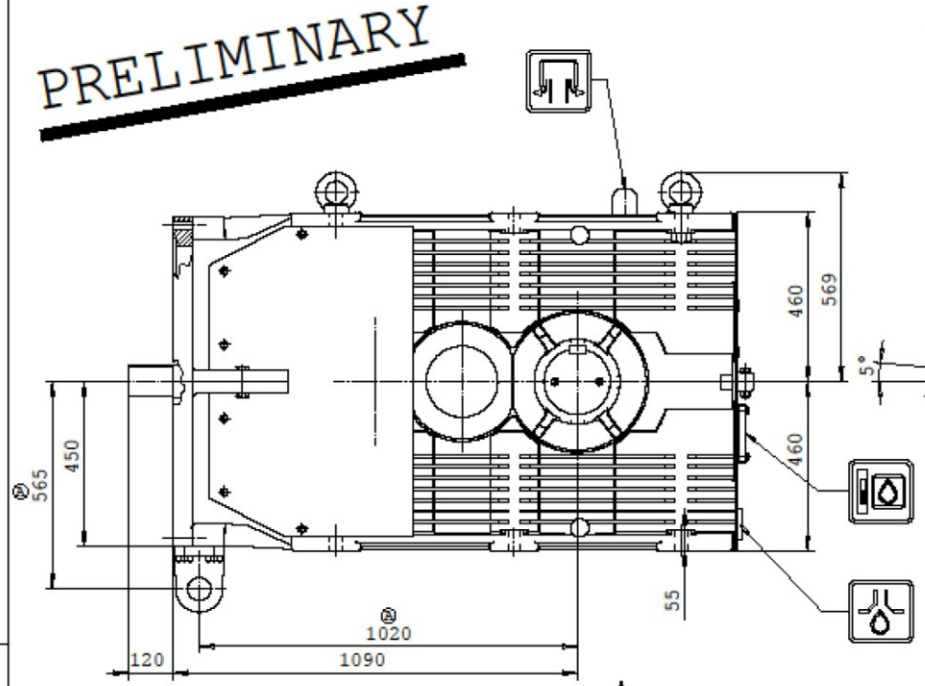
Oil 70 liter
Weight 1200 kg

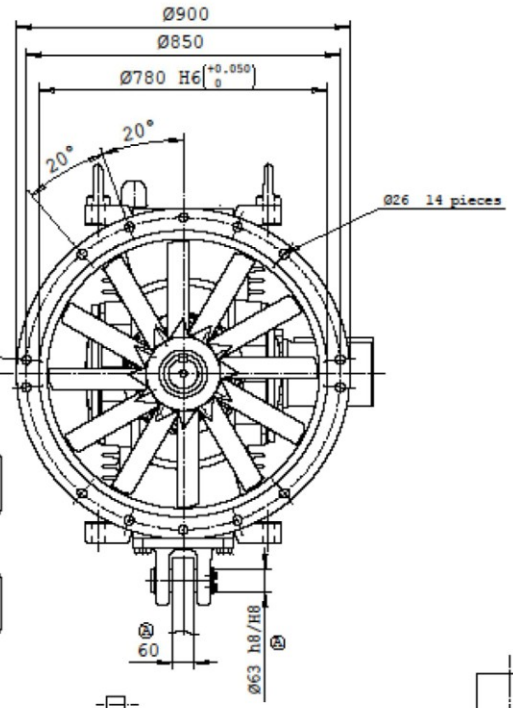
moventas			1:10		
DIMENSION DRAWING	D3RST50XO D3RSF50XO		13.10.2010	MMI	D011077 A

a) torque arm updated 20.12.2010

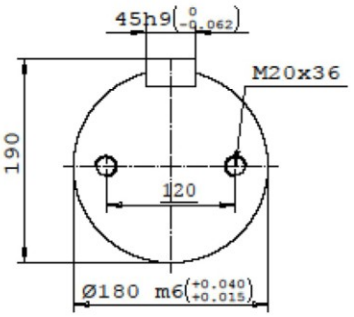
E010844

PRELIMINARY

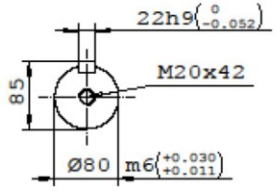


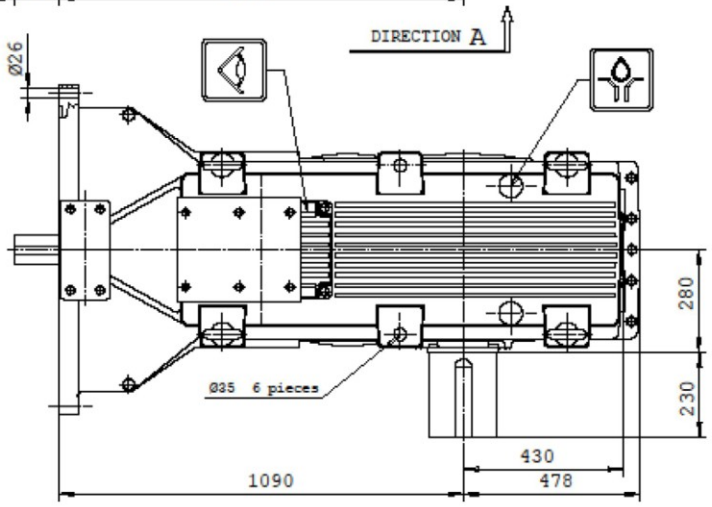


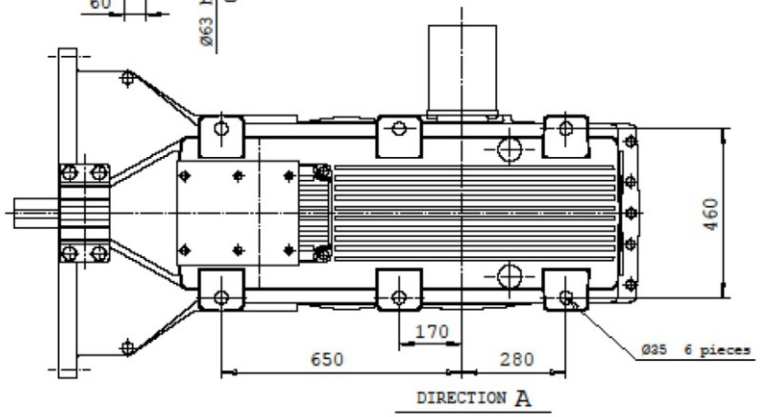
Low speed shaft



High speed shaft







Oil 100 liter
Weight 1600 kg

a) torque arm updated 20.12.2010

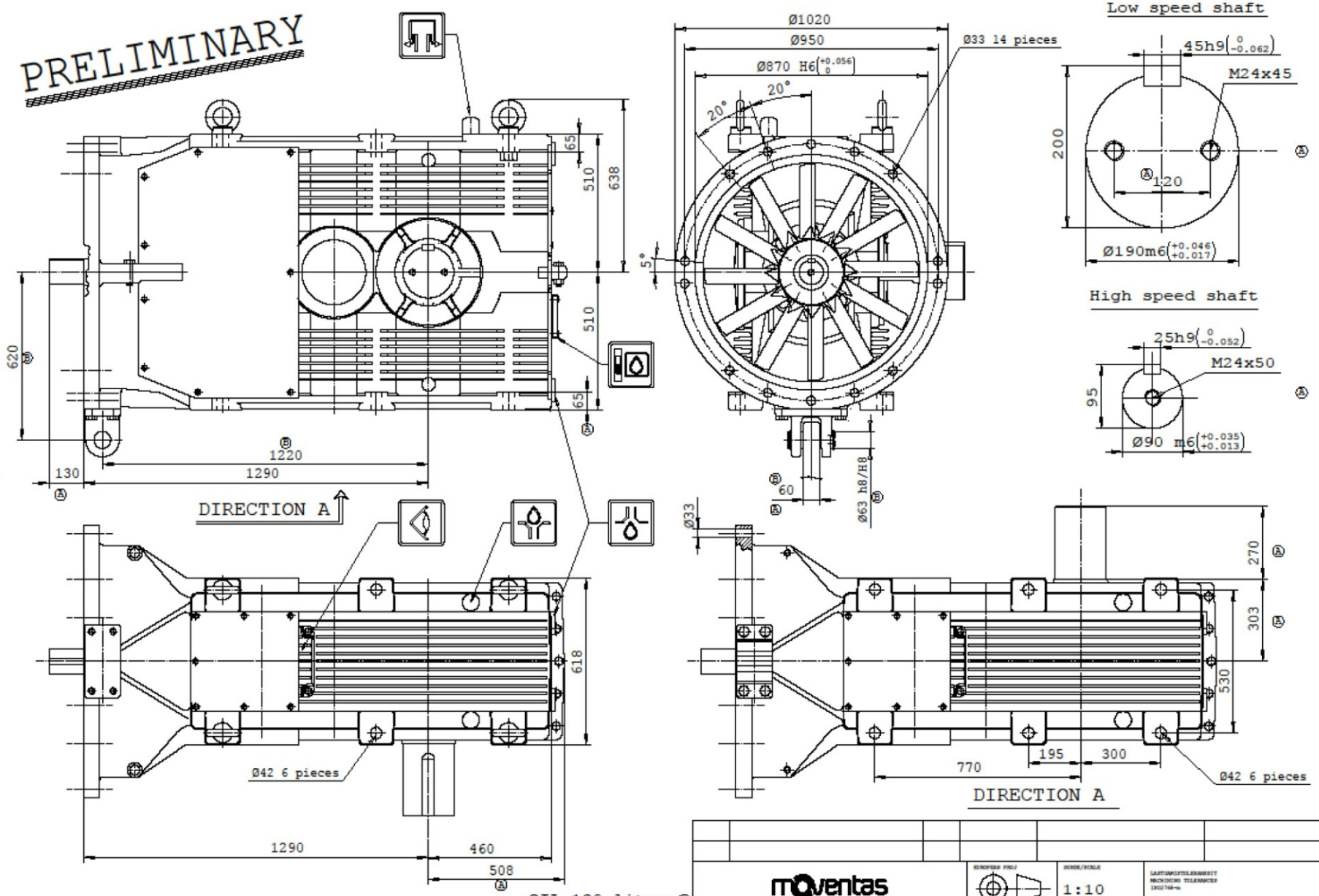
moventas

DIMENSION DRAWING	D3RST60XO D3RSF60XO	27.10.2010 MMI	D011160 A

SCALE 1:10

E010934

PRELIMINARY



OIL 130 liter Ⓐ

WEIGHT 2100 KG Ⓐ

shaft pos.04

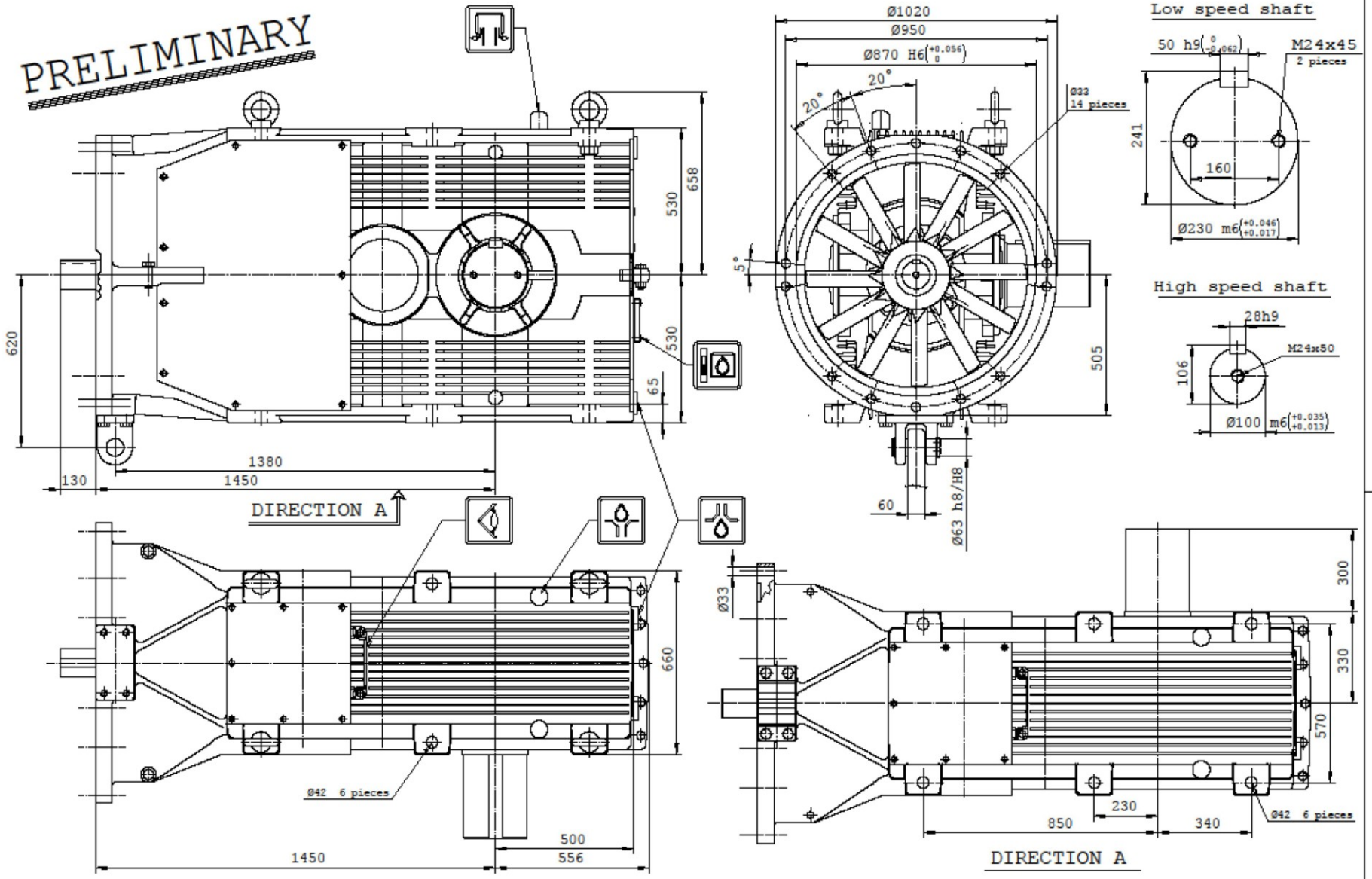
moventas			1:10		
DIMENSION DRAWING	D3RST70XO D3RSF70XO		11.6.2010 MKI	D010316 B	

b) torque arm updated 20.12.2010

a) shaft end, oil, weight dimensions updated 13.10.10 MKI

E010128

PRELIMINARY

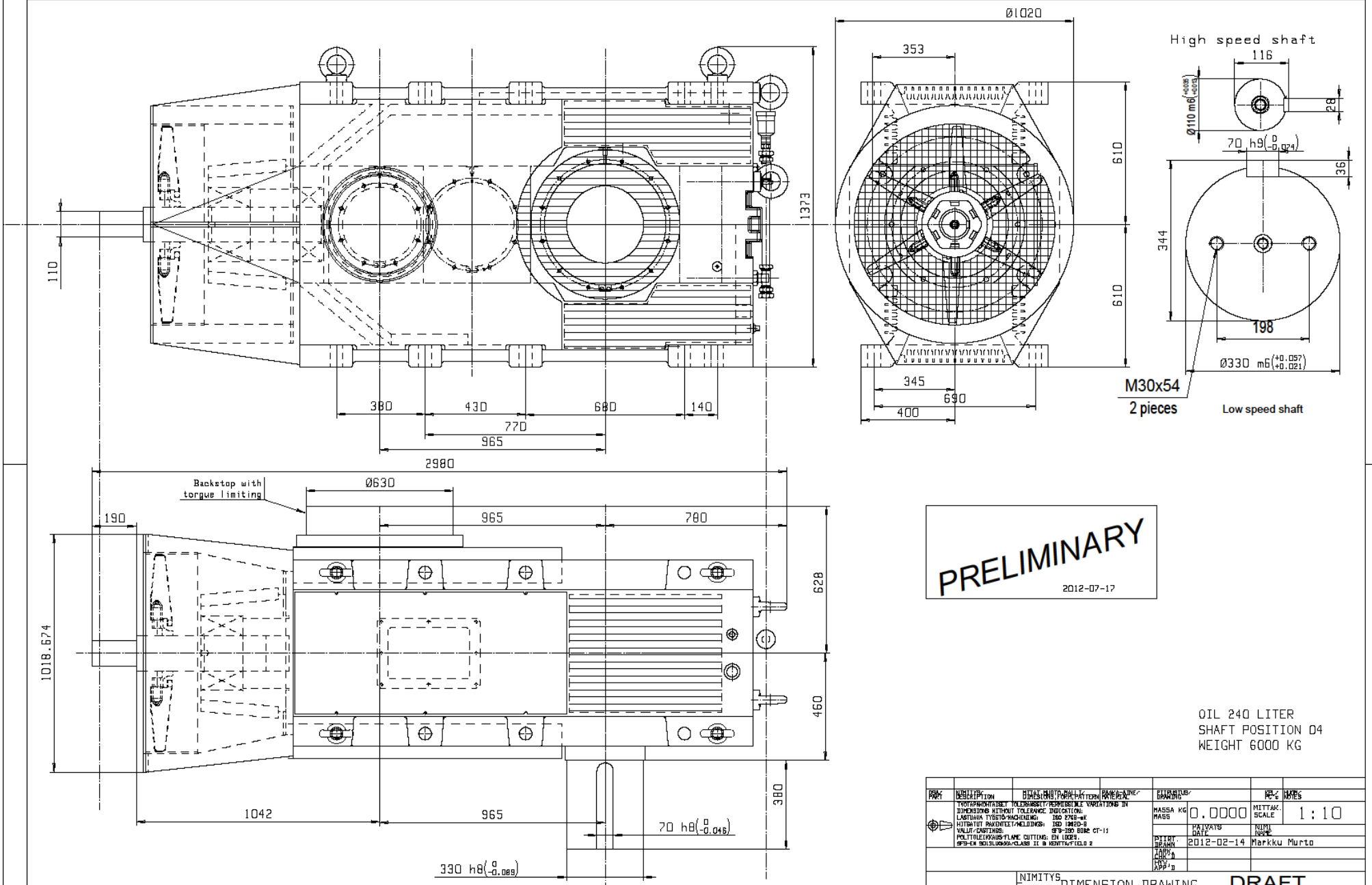


OIL 180 liter

shaft position 04 WEIGHT 3100 KG

moventas		1:10	
DIMENSION DRAWING	D3RST82XO D3RSF82XO	7.12.2010	D011437

E011199


Ø1020
353
610
610
1373
110
380
430
680
140
770
965
2980
High speed shaft
116
28
Ø110 m6(+0.038 +0.023)
70 h9(0 -0.074)
36
344
198
Ø330 m6(+0.057 +0.021)
M30x54
2 pieces
Low speed shaft
345
690
400
Backstop with torque limiting
Ø630
190
965
780
628
1018.674
460
380
1042
965
70 h8(0 -0.046)
330 h8(0 -0.089)
PRELIMINARY
2012-07-17
OIL 240 LITER
SHAFT POSITION D4
WEIGHT 6000 KG
moventas
NIMITYS DIMENSION DRAWING
TITLE
VALMISTE D2RST110X0
PRODUCT
DRAFT
D017621
COPYRIGHT MOVENTAS Oy (IG)
ED17291
VERTEX
A2
2012-02-14
Markku Murto

Общество с ограниченной ответственностью «Приводные технологии»

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E-mail: dtech@gshosnab.ru info@gshosnab.ru

Информация по подбору редукторных приводов производства фирмы «Moventas» по мощности электродвигателей:

Таблица 1

Таблица подбора редукторов*							
Мощность двигателя кВт	Частота вращения двигателя 1500 об/мин.	**i = 20**		**i = 25**		**i = 31,5**	
		Цилиндрич. редуктор	Кон.-цил. редуктор	Цилиндрич. редуктор	Кон.-цил. редуктор	Цилиндрич. редуктор	Кон.-цил. редуктор
55	1480						
75	1480						
90	1480			**D2PSF50**		**D3PSF50**	**D3RSF50**
110	1480			**D2PSF50**		**D3PSF50**	**D3RSF50**
132	1480	**D2PSF50**		**D2PSF60**	**D3RSF50**	**D3PSF60**	**D3RSF60**
160	1480	**D2PSF50**	**D3RSF50**	**D2PSF60**	**D3RSF50**	**D3PSF60**	**D3RSF60**
200	1480	**D2PSF60**	**D3RSF50**	**D2PSF60**	**D3RSF60**	**D3PSF70**	**D3RSF70**
250	1480	**D2PSF60**	**D3RSF60**	**D2PSF70**	**D3RSF70**	**D3PSF70**	**D3RSF70**
315	1480	**D2PSF70**	**D3RSF70**	**D2PSF80**	**D3RSF70**	**D3PSF80**	**D3RSF80**
400	1480	**D2PSF80**	**D3RSF80**	**D2PSF90**	**D3RSF80**	**D3PSF90**	**D3RSF90**
500	1480	**D2PSF90**	**D3RSF90**	**D2PSF90**	**D3RSF90**	**D3PSF100**	**-**
630	1480	**D2PSF90**	**D3RSF90**	**D2PSF100**	**-**	**D3PSF110**	**-**
800	1480	**D2PSF100**	**-**	**D2PSF110**	**-**	**D3PSF120**	**-**

*** Общие критерии, использованные для составления данной таблицы:**

- Сервис-фактор (отношение номинальной мощности редуктора к номинальной мощности двигателя) P_{N1} / P_1, Fs более 1,7.
- Термическая мощность указана при температуре окружающей среды **+25°C** $P_{TH} > P_1$: Для коническо-цилиндрических редукторов – исполнение с одним встроенным вентилятором на входном валу. Для цилиндрических редукторов – исполнение с двухсторонним вентилятором на входном валу.
- Расчетный ресурс редукторов не менее **100 000** часов
- Гарантийный срок на поставляемое оборудование: 12 месяцев.
- Система смазки: масляная ванна (разбрызгиванием).
- Подробные технические характеристики, точные передаточные числа, габаритные и присоединительные размеры и другие технические параметры смотрите в каталоге Moventas (серия Duetto).

D-series

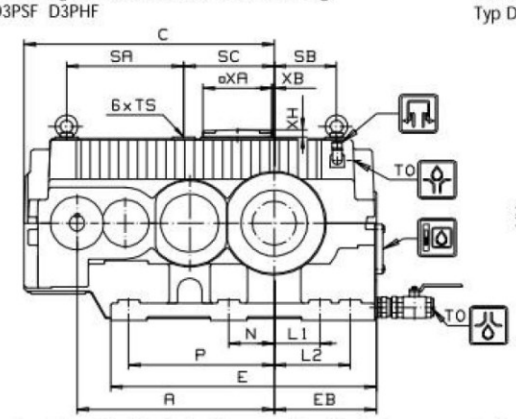
3- stage Helical Gear Units
Horizontal LSS
3- stufige Stirnradgetriebe
Horizontale LSS

D3P..50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

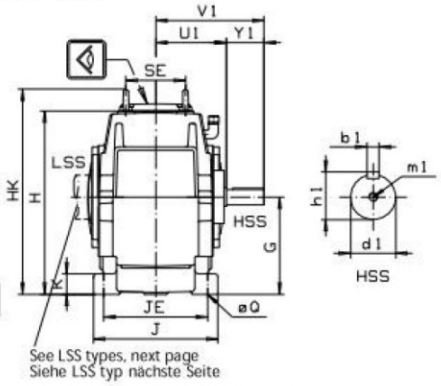
Gear Unit Dimensions, type D3PSF D3PHF D3PHT

Foot Mounting Face machined for foot mounting, type D3PSF D3PHF



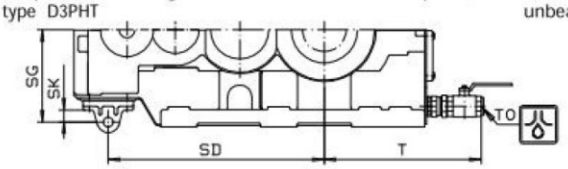
Getriebeabmessungen, Typ D3PSF D3PHF D3PHT

Bearbeitete Fußfläche für Fußausführung, Typ D3PSF D3PHF

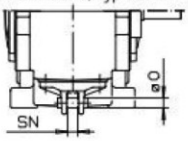


See LSS types, next page
Siehe LSS typ nächste Seite

Torque Arm Mounting Bracket with unmachined foot plane, type D3PHT



Befestigung für Drehmomentenstütze mit unbearbeiteter Fußfläche, Typ D3PHT

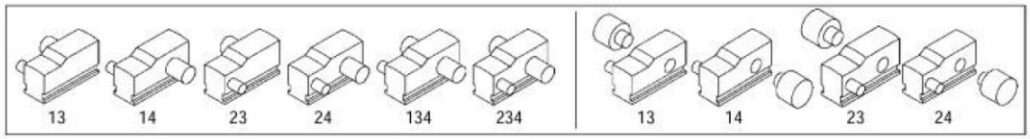


Size Größe	Housing Dimensions in mm Gehäuseabmessungen in mm																			Foot Mounting Fußausführung Type/Typ D3PSF D3PHF					
	A	C	E	EB	G	H	HK	J	K	SA	SB	SC	SE	TS	TO	T	XA	XB	XH	JE	L1	L2	N	P	Q
50	628	796	846	325	310	585	656	396	65	373	198	288	188	M20x35	R1½	500	220	7	30	330	148	245	145	463	28
60	715	884	974	373	350	665	755	460	73	420	245	325	216	M24x42	R1½	548	220	40	30	378	170	300	168	533	35
70	828	1038	1135	427	400	760	850	506	82	475	292	418	250	M24x42	R1½	602	260	92	30	416	194	322	190	633	35
80	878	1089	1230	470	440	835	944	552	90	541	328	395	280	M30x53	R1½	645	260	62	30	454	209	369	209	666	42
90	972	1217	1324	512	480	910	1019	584	97	531	361	525	305	M30x53	R1½	687	260	192	30	480	228	418	228	719	42

Size Größe	HSS Dimensions in mm HSS Abmessungen in mm							Torque Arm Mounting Bracket Befestigung für Drehmomentenstütze Type/Typ D3PHT					Weight Gewicht	Oil Capacity/Ölmenge Splash lubrication Tauchschmierung	Oil Capacity/Ölmenge Pressure lubrication Druckschmierung
	i_N = 20 ... 90														
	U1	Y1	V1	d1	b1	h1	m1	O	SD	SG	SK	SN	kg	l	l
50	226	95	321	50k6	14h9	53.5	M16	32	693	294	38	32	835	57	32
60	251	95	346	55m6	16h9	59	M20	45	775	308	52	45	1200	83	50
70	280	125	405	65m6	18h9	69	M20	45	928	380	52	45	1675	125	73
80	300	125	425	70m6	20h9	74.5	M20	45	978	380	52	45	2100	160	97
90	322	150	472	80m6	22h9	85	M20	45	1107	389	52	45	2770	208	123

Shaft Positions

Wellenausführungen



Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

D-series

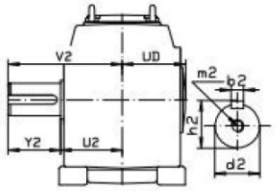
3- stage Helical Gear Units
Horizontal LSS
3- stufige Stirnradgetriebe
Horizontale LSS

D3P..50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

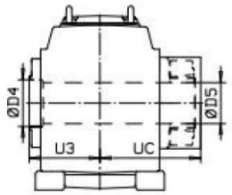
LSS types — LSS Typen

Type/Typ D3PSF



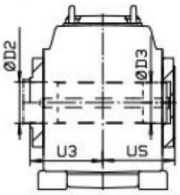
Solid Shaft
Vollwelle

Type/Typ D3PHF, D3PHT



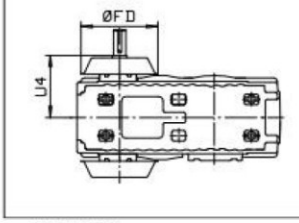
Hollow Shaft, Shrink Disk, page 12.07
Hohlwelle, Schrumpfscheibe, Seite 12.07

Type/Typ D3PHF, D3PHT

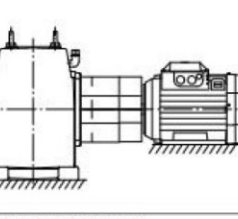


Hollow Shaft, Key Connection, page 12.10
Hohlwelle, Paßfederverbindung, Seite 12.10

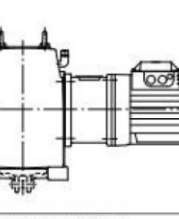
Common Accessories, see section 12 — Allgemeine Ausrüstungsoptionen, siehe Teil 12



Fan, page 12.21
Lüfter, Seite 12.21



Coupling Guard, page 12.34
Kupplungschutz, Seite 12.34



Motor Flange, page 12.35
Motorflansch, Seite 12.35

Size Größe	LSS Dimensions in mm Solid Shaft / Vollwelle								LSS Abmessungen in mm Hollow Shaft / Hohlwelle							Common Accessories Allgemeine Ausrüstungsoptionen	
	d2	b2	h2	m2	Y2	U2	V2	UD	U3	UC	D4	D5	US	D2	D3	U4	FD
50	140m6	36h9	148	M30	200	232	432	216	228	336	155	154	232	150	149	343	443
60	160m6	40h9	169	M30	240	261	501	245	255	386	180	179	259	170	169	367	443
70	180m6	45h9	190	M30	240	281	521	274	284	422	190	189	288	190	189	417	547
80	200m6	45h9	210	+)	280	315	595	290	302	453	210	209	306	210	209	435	547
90	220m6	50h9	231	+)	280	337	617	314	324	501	250	249	328	240	239	457	547

In case of Through going LSS, same dimensions apply.
Gleiche Abmessungen für Abtriebswelle beidseitig.

+) M20,2x180° distance/Distanz 0.6xd2

Other available Accessories, see section 12 — Weitere verfügbare Ausrüstungsoptionen, siehe Teil 12

Lubrication and Cooling Schmierung und Kühlung	Page Seite
Cooling Coil System Kühlschlange	12.22
Lubrication Unit Schmiereinheit	12.23
Shaft End Pump Wellenendenpumpe	12.27
Central Lubrication System connections Ausrüstung für Zentrales Schmiersystem	12.28
Oil Heating System Ölheizung	12.30

Optional Seal Arrangements Dichtungssysteme	12.33
Lip Seal on HSS and LSS 1) Radialwellendichtring für HSS und LSS	

Through going HSS Durchgehende Welle	12.16

Coupled Equipment Anschlußelemente	Page Seite
Couplings Kupplungen	*)
Torque Arm Drehmomentenstange	12.34
Belt Drive Keilriemenantrieb	12.35
Back Stop Rücklaufsperre	12.36

1) Standard Solution for this Gear Unit type
*) Contact Moventas Santasalo

1) Standard in diesem Getriebetyp
*) Sprechen Sie Moventas Santasalo an

See also modifications, page 12.38-12.40
Siehe auch Modifikationen, Seite 12.38-12.40

Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

D-series

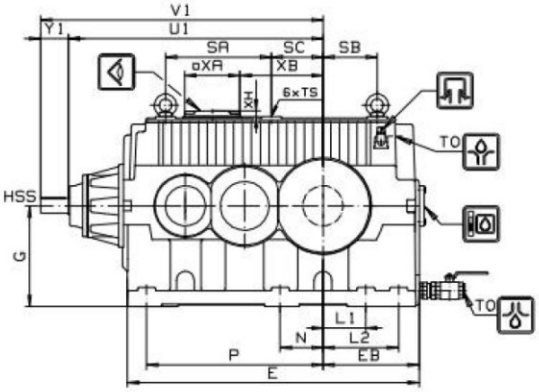
3- stage Bevel-helical Gear Units
Horizontal LSS
3- stufige Kegel-Stirnradgetriebe
Horizontale LSS

D3R.. 50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

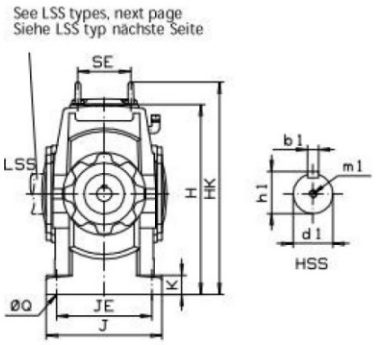
Gear Unit Dimensions, type D3RSF D3RHF D3RHT

Foot Mounting Face machined for foot mounting,
type D3RSF D3RHF

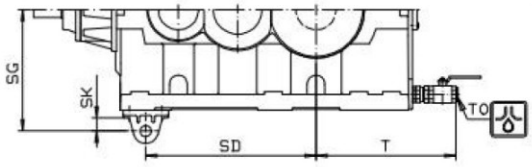


Getriebeabmessungen, TypD3RSF D3RHF D3RHT

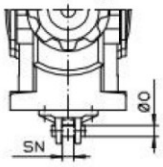
Bearbeitete Fußfläche für Fußausführung,
Typ D3RSF D3RHF



Torque Arm Mounting Bracket with unmachined foot plane,
type D3RHT



Befestigung für Drehmomentenstütze mit
unbearbeiteter Fußfläche, Typ D3RHT

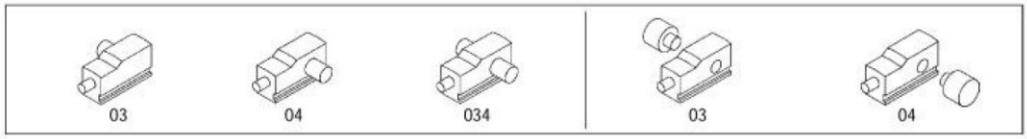


Size Größe	Housing Dimensions in mm Gehäuseabmessungen in mm																	Foot Mounting Fußausführung Type/Typ D3RSF D3RHF					
	E	EB	G	H	HK	J	K	SA	SB	SC	SE	TS	TO	T	XA	XB	XH	JE	L1	L2	N	P	Q
50	994	325	350	660	731	396	65	376	190	175	188	M20x35	R1½	500	220	253	30	330	148	245	148	600	28
60	1149	373	400	755	845	460	76	420	215	205	216	M24x42	R1½	548	220	305	30	378	170	300	170	700	35
70	1320	427	460	870	960	506	82	460	276	270	250	M24x42	R1½	602	260	370	30	416	194	322	194	800	35
80	1418	470	505	955	1045	552	90	490	300	280	250	M24x42	R1½	645	260	390	30	454	209	369	209	853	42
90	1551	512	550	1040	1149	584	97	588	346	291	280	M30x53	R1½	687	260	455	30	480	228	418	228	945	42

Size Größe	HSS Dimensions in mm HSS Abmessungen in mm													Torque Arm Mounting Bracket Befestigung für Drehmomentenstütze Type/Typ D3RHT					Weight Gewicht	Oil Capacity/Ölmenge Splash lubrication Tauchschmierung	Oil Capacity/Ölmenge Pressure lubrication Druckschmierung
	i_N = 14 ... 56							i_N = 63 ... 80													
	U1	Y1	V1	d1	b1	h1	m1	Y1	V1	d1	b1	h1	m1	O	SD	SG	SK	SN	kg	l	l
50	881	95	976	55m6	16h9	59	M20	95	976	45k6	14h9	48,5	M16	32	580	418	38	32	846	62	38
60	1012	125	1137	65m6	18h9	69	M20	95	1107	55m6	16h9	59	M20	45	676	482	52	45	1273	92	41
70	1142	125	1267	75m6	20h9	79,5	M20	125	1267	60m6	18h9	64	M20	45	795	542	52	45	1879	144	64
	i_N = 14 ... 63							i_N = 71 ... 80													
80	1192	125	1317	75m6	20h9	79,5	M20	125	1317	60m6	18h9	64	M20	45	845	587	52	45	2375	185	79
90	1363	150	1513	90m6	25h9	95	M24	125	1488	70m6	20h9	74,5	M20	45	945	632	52	45	3150	227	105

Shaft Positions

Wellenausführungen



Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

D-series

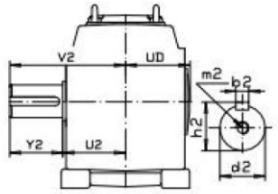
3- stage Bevel-helical Gear Units
Horizontal LSS
3- stufige Kegel-Stirnradgetriebe
Horizontale LSS

D3R.. 50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

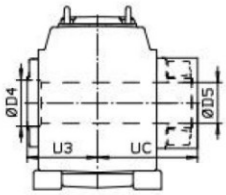
LSS types — LSS Typen

Type/Typ
D3RSF



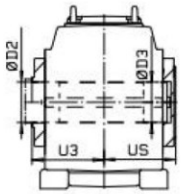
Solid Shaft
Vollwelle

Type/Typ
D3RHF, D3RHT



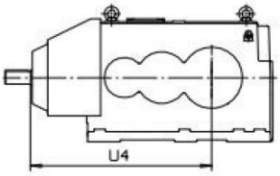
Hollow Shaft, Shrink Disk, page 12.07
Hohlwelle, Schrumpfscheibe, Seite 12.07

Type/Typ
D3RHF, D3RHT

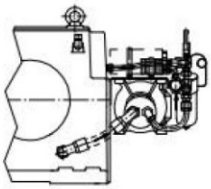


Hollow Shaft, Key Connection, page 12.10
Hohlwelle, Paßfederverbindung, Seite 12.10

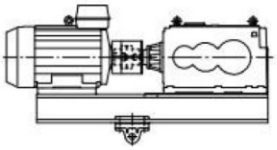
Common Accessories, see section 12 — Allgemeine Ausrüstungsoptionen, siehe Teil 12



Fan, page 12.21
Lüfter, Seite 12.21



Lubrication Unit, page 12.23
Schmiereinheit, Seite 12.23



Swing Base for motor, page 12.38
Motorschwinge, Seite 12.38

Size Größe	LSS Dimensions in mm Solid Shaft / Vollwelle								LSS Abmessungen in mm Hollow Shaft / Hohlwelle							Common Accessories Allgemeine Ausrüstungsoptionen
	d2	b2	h2	m2	Y2	U2	V2	UD	U3	UC	D4	D5	US	D2	D3	U4
50	140m6	36h9	148	M30	200	232	432	216	228	336	155	154	232	150	149	998
60	160m6	40h9	169	M30	240	261	501	245	255	386	180	179	259	170	169	1129
70	180m6	45h9	190	M30	240	281	521	274	284	422	190	189	288	190	189	1278
80	200m6	45h9	210	+)	280	315	595	290	302	453	210	209	306	210	209	1328
90	220m6	50h9	231	+)	280	337	617	314	324	501	250	249	328	240	239	1499

In case of Through going LSS, same dimensions apply.
Gleiche Abmessungen für Abtriebswelle beidseitig.

+) M20,2x180° distance/Distanz 0.6xd2

Other available Accessories, see section 12 — Weitere verfügbare Ausrüstungsoptionen, siehe Teil 12

Lubrication and Cooling Schmierung und Kühlung	Page Seite
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Shaft End Pump Wellenendenpumpe	12.27
Central Lubrication System connections Ausrüstung für Zentrales Schmiersystem	12.28
Oil Heating System Ölheizung	12.29

Optional Seal Arrangements Dichtungssysteme	12.32
Lip Seal on HSS and LSS 1) Radialwellendichtring für HSS und LSS	

See also modifications, page 12.38-12.40
Siehe auch Modifikationen, Seite 12.38-12.40

Coupled Equipment Anschlußelemente	Page Seite
Couplings Kupplungen	*)
Coupling Guard Kupplungschutz	12.33
Torque Arm Drehmomentenstange	12.33
Belt Drive Keilriemenantrieb	12.34
Motor Flange Motorflansch	12.34
Back Stop Rücklaufsperre	12.35

1) Standard Solution for this Gear Unit type
*) Contact Moventas Santasalo

1) Standard in diesem Getriebetyp
*) Sprechen Sie Moventas Santasalo an

Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

D-series

2- stage Helical Gear Units
Horizontal LSS
2- stufige Stirnradgetriebe
Horizontale LSS

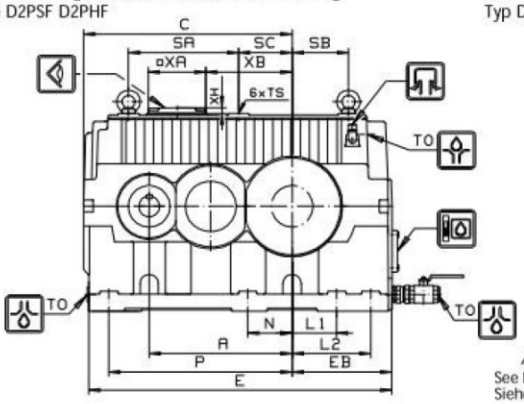
D2P..50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

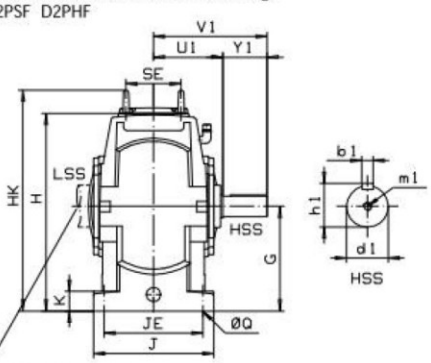
Gear Unit Dimensions, type D2PSF D2PHF D2PHT

Getriebeabmessungen, Typ D2PSF D2PHF D2PHT

Foot Mounting Face machined for foot mounting, type D2PSF D2PHF

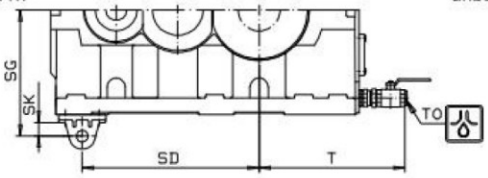


Bearbeitete Fußfläche für Fußausführung, Typ D2PSF D2PHF

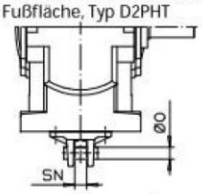


See LSS types, next page
Siehe LSS typ nächste Seite

Torque Arm Mounting Bracket with unmachined foot plane, type D2PHT



Befestigung für Drehmomentenstütze mit unbearbeiteter Fußfläche, Typ D2PHT

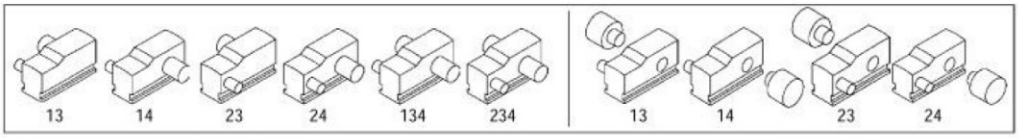


Size Größe	Housing Dimensions in mm Gehäuseabmessungen in mm																			Torque Arm Mounting Bracket Befestigung für Drehmomentenstütze Type/Typ D2PHT					Foot Mounting Fußausführung Type/Typ D2PSF D2PHF					
	A	C	E	EB	G	H	HK	J	K	SA	SB	SC	SE	TS	TO	T	XA	XB	XH	O	SD	SG	SK	SN	JE	L1	L2	N	P	Q
50	474	687	994	325	350	660	731	396	65	376	190	175	188	M20x35	R1½	500	220	253	30	32	580	418	38	32	330	148	245	148	600	28
60	546	799	1149	373	400	755	845	460	76	420	215	205	216	M24x42	R1½	548	220	305	30	45	676	482	52	45	378	170	300	170	700	35
70	623	922	1320	427	460	870	960	506	82	460	276	270	250	M24x42	R1½	602	260	370	30	45	795	542	52	45	416	194	322	194	800	35
80	673	972	1418	470	505	955	1045	552	90	490	300	280	250	M24x42	R1½	645	260	390	30	45	845	587	52	45	454	209	369	209	853	42
90	737	1071	1551	512	550	1040	1149	584	97	588	346	291	280	M30x53	R1½	687	260	455	30	45	945	632	52	45	480	228	418	228	945	42

Size Größe	HSS Dimensions in mm HSS Abmessungen in mm																		Weight Gewicht	Oil Capacity/Ölmenge	
		D2PSF i_N = 6.3 ... 18						D2PHF, D2PHT i_N = 6.3 ... 12,5						D2PHF, D2PHT i_N = 14 ... 18							Splash lubrication Tauch-schmierung	Pressure lubrication Druck-schmierung
	U1	Y1	V1	d1	b1	h1	m1	Y1	V1	d1	b1	h1	m1	Y1	V1	d1	b1	h1	m1	kg	l	l
50	238	125	363	75m6	20h9	79,5	M20	125	363	75m6	20h9	79,5	M20	125	363	60m6	18h9	64	M20	770	44	38
60	255	150	405	80m6	22h9	85	M20	150	405	80m6	22h9	85	M20	125	380	70m6	20h9	74,5	M20	1150	48	41
		i_N = 6.3 ... 14												i_N = 16 ... 18								
70	287	150	437	95m6	25h9	100	M24	150	437	95m6	25h9	100	M24	150	437	80m6	22h9	85	M20	1695	74	64
80	307	190	497	100m6	28h9	106	M24	190	497	100m6	28h9	106	M24	150	457	85m6	22h9	90	M20	2150	89	79
90	330	190	520	110m6	28h9	116	M24	190	520	110m6	28h9	116	M24	150	480	95m6	25h9	100	M24	2830	118	105

Shaft Positions

Wellenausführungen



Manufacturer reserves the right to alteration.

Recht auf Änderungen vorbehalten.

D-series

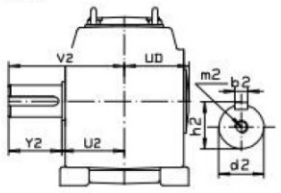
2- stage Helical Gear Units
Horizontal LSS
2- stufige Stirnradgetriebe
Horizontale LSS

D2P..50-90

Solid & Hollow LSS
Vollwelle & Hohlwelle LSS

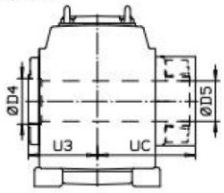
LLS types — LSS Typen

Type/Typ
D2PSF



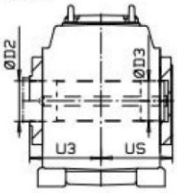
Solid Shaft
Vollwelle

Type/Typ
D2PHF, D2PHT



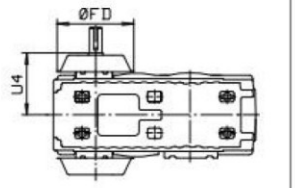
Hollow Shaft, Shrink Disk, page 12.07
Hohlwelle, Schrumpfscheibe, Seite 12.07

Type/Typ
D2PHF, D2PHT

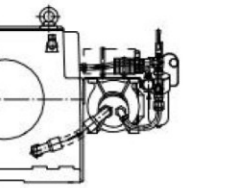


Hollow Shaft, Key Connection, page 12.10
Hohlwelle, Paßfederverbindung, Seite 12.10

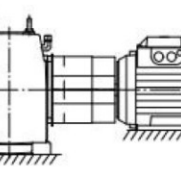
Common Accessories, see section 12 — Allgemeine Ausrüstungsoptionen, siehe Teil 12



Fan, page 12.21
Lüfter, Seite 12.21



Lubrication Unit, page 12.23
Schmiereinheit, Seite 12.23



Coupling Guard, page 12.34
Kupplungschutz, Seite 12.34

Size Größe	LSS Dimensions in mm / LSS Abmessungen in mm — Solid Shaft / Vollwelle								Hollow Shaft / Hohlwelle							Common Accessories Allgemeine Ausrüstungsoptionen	
	d2	b2	h2	m2	Y2	U2	V2	UD	U3	UC	D4	D5	US	D2	D3	U4	FD
50	140m6	36h9	148	M30	200	232	432	216	228	336	155	154	232	150	149	355	443
60	160m6	40h9	169	M30	240	261	501	245	255	386	180	179	259	170	169	372	443
70	180m6	45h9	190	M30	240	281	521	274	284	422	190	189	288	190	189	423	547
80	200m6	45h9	210	+)	280	315	595	290	302	453	210	209	306	210	209	443	547
90	220m6	50h9	231	+)	280	337	617	314	324	501	250	249	328	240	239	466	547

In case of Through going LSS, same dimensions apply.
Gleiche Abmessungen für Abtriebswelle beidseitig.

+) M20, 2x180° distance/Distanz 0.6xd2

Other available Accessories, see section 12 — Weitere verfügbare Ausrüstungsoptionen, siehe Teil 12

Lubrication and Cooling Schmierung und Kühlung	Page Seite
Cooling Coil System Kühlschlange	12.22
Shaft End Pump Wellenendenpumpe	12.27
Central Lubrication System connections Ausrüstung für Zentrales Schmiersystem	12.28
Oil Heating System Ölheizung	12.30

Optional Seal Arrangements Dichtungssysteme	12.33
Labyrinth seal on HSS and LSS 1) Labyrinthdichtung für HSS und LSS	

Through going HSS Durchgehende Welle	12.16

Coupled Equipment Anschlußelemente	Page Seite
Couplings Kupplungen	*)
Torque Arm Drehmomentenstange	12.34
Belt Drive Keilriemenantrieb	12.35
Back Stop Rücklaufsperre	12.36

See also modifications, page 12.38-12.40
Siehe auch Modifikationen, Seite 12.38-12.40

1) Standard Solution for this Gear Unit type
*) Contact Moventas Santasalo

1) Standard in diesem Getriebetyp
*) Sprechen Sie Moventas Santasalo an

When bath lubrication (+) is used, lip seal is required/
Wenn Badschmierung vorhanden, Abdichtung mit Radialwellendichtring erforderlich

D-series

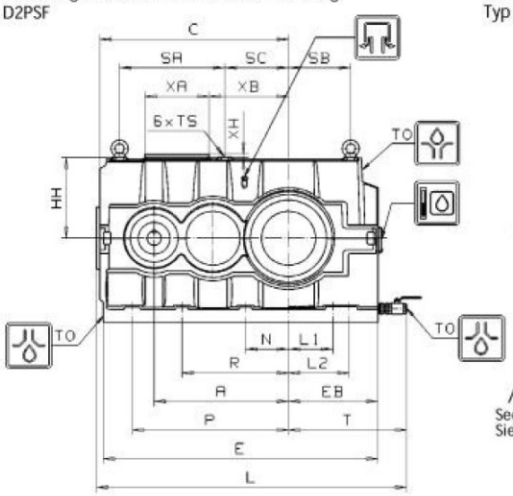
2- stage Helical Gear Units
Horizontal LSS
2- stufige Stirnradgetriebe
Horizontale LSS

D2PSF 100-160

Solid LSS
Vollwelle LSS

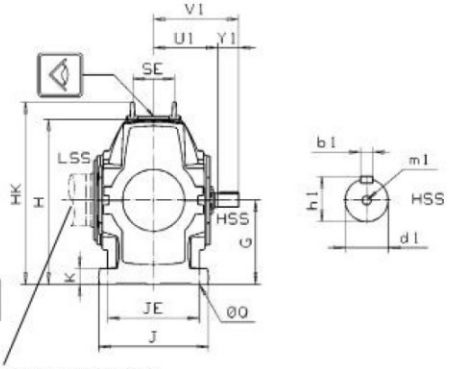
Gear Unit Dimensions, type D2PSF

Foot Mounting Face machined for foot mounting, type D2PSF



Getriebeabmessungen, Typ D2PSF

Bearbeitete Fußfläche für Fußausführung, Typ D2PSF



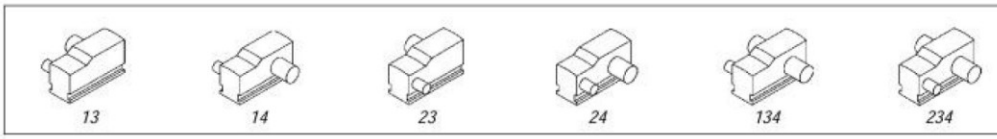
See LSS types, next page
Siehe LSS typ nächste Seite

Size Größe	Housing Dimensions in mm / Gehäuseabmessungen in mm																				Foot Mounting Fußausführung Type/Typ D2PSF D2PHF						
	A	C	E	EB	G	H	HH	HK	J	K	L	SA	SB	SC	SE	T	TO	TS	XA	XB	XH	JE	L1	L2	N	P	Q	R
100	874	1216	1753	560	540	1050	510	1159	690	100	1951	741	390	350	265	735	1 1/2"	M30	403	498	32	580	300	420	300	1030	48	710
110	965	1310	1870	620	570	1120	560	1130	750	95	2105	0	0	0	0	795	1 1/2"	0	403	550	32	640	340	480	340	1150	54	770
120	1072	1540	2165	660	610	1210	600	1230	802	95	2331	0	0	0	0	797	1 1/2"	0	405	600	12	690	340	540	340	1340	54	856
130	1152	1630	2290	695	680	1330	650	1350	858	95	2471	0	0	0	0	841	1 1/2"	0	405	650	12	740	390	590	390	1450	54	935
140	1244	1750	2470	755	730	1430	700	1450	924	95	2665	0	0	0	0	915	1 1/2"	0	405	700	12	794	300	575	394	1500	54	100
150	1328	1844	2604	795	770	1510	740	1530	952	95	2773	0	0	0	0	929	1 1/2"	0	405	750	12	822	300	620	428	1600	54	170
160	1435	1974	2796	850	820	1600	780	1620	992	95	2958	0	0	0	0	984	1 1/2"	0	405	800	12	862	300	670	470	1700	54	1150

Size Größe	HSS Dimensions in mm HSS Abmessungen in mm								Oil Capacity Ölmenge	
	Weight D2PSF i_N = 5,6 ... 18 / Gewicht								Splash lubrication Tauch-schmierung	Pressure lubrication Druck-schmierung
	U1	Y1	V1	d1	b1	h1	m1	kg	l	l
100	380	225	605	130m6	32h9	137	M24	3900	190	153
110	405	225	630	140m6	36h9	148	M30	5150	237	212
120	436	225	661	150m6	36h9	158	M30	6690	325	298
130	468	270	738	160m6	40h9	169	M30	8110	447	415
140	507	270	777	170m6	40h9	179	M30	9990	571	530
150	531	270	801	180m6	45h9	190	M30	11480	682	637
160	561	315	876	210m6	50h9	221	M20(1	13590	788	727

1) 2 x 180°, distance/Distanz 0,6 x d2

Shaft Positions / Wellenausführungen



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D-series

2- stage Helical Gear Units
Horizontal LSS
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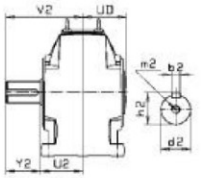
Horizontale LSS

D2PSF 100-160

Solid LSS
Vollwelle LSS

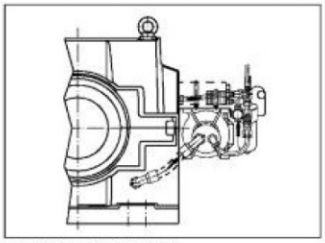
LSS types — LSS Typen

Type/Typ
D2PSF

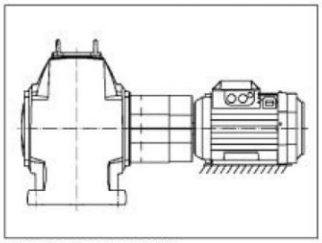


Solid Shaft
Vollwelle

Common Accessories, see section 12 — Allgemeine Ausrüstungsoptionen, siehe Teil 12



Lubrication Unit, page 12.23
Schmiereinheit, Seite 12.23



Coupling Guard, page 12.34
Kupplungschutz, Seite 12.34

Size Größe	LSS Dimensions in mm / LSS Abmessungen in mm Solid Shaft / Vollwelle							
	d2	b2	h2	m2 1)	Y2	U2	V2	UD
100	310m6	70h9	324	M24	380	391	771	361
110	330m6	70h9	344	M30	380	416	796	386
120	350m6	80h9	365	M30	450	447	897	416
130	370m6	80h9	385	M30	450	479	929	451
140	390m6	90h9	407	M30	540	510	1050	482
150	410m6	90h9	427	M30	540	534	1074	506
160	430m6	90h9	447	M30	540	564	1104	536

In case of Through going LSS, same dimensions apply.
Gleiche Abmessungen für Abtriebswelle beidseitig.

1) 2 x 180°, distance/Distanz 0,6 x d2

Other available Accessories, see section 12 — Weitere verfügbare Ausrüstungsoptionen, siehe Teil 12

Lubrication and Cooling Schmierung und Kühlung	Page Seite
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Siehe auch Modifikationen, Seite 12.38-12.40

Through going HSS Durchgehende Welle HSS	12.16

1) Standard Solution for this Gear Unit type
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1) Standard in diesem Getriebetyp
*) Sprechen Sie Moventas Santasalo an

Coupled Equipment Anschlußelemente	Page Seite
Couplings Kupplungen	*)
Torque arm Drehmomentenstange	12.34

When bath lubrication (+) is used, lip seal is required/
Wenn Badschmierung vorhanden, Abdichtung mit Radialwellendichtring erforderlich

Указатель уровня и температуры масла (механический)

HYDAC INTERNATIONAL

Fluid Level Gauge
Fluid Level Sensor
Temperature Switch
FSA / FSK /TS

Up to NG381, up to PN 0,5 bar, up to T= 80 °C

1. DESCRIPTION

1.1 GENERAL

Fluid level gauges FSA, fluid level sensors FSK and temperature switches TS are units which serve to monitor and control the level of operating fluid.

The flexible product range means that many combinations are possible:

- FSA: five continuous graded sizes

  Visual thermometer with °C and °F scale

  Temperature gauge which records the temperature of the operating fluid in the tank; display in °C. Dual scale in °C and °F is available on request.

  Simple, standardised mounting conditions (FSA/K).

-FSK: four continuous graded sizes

  Switching contact can be either type O (open when fluid is at low level) or type C (closes when fluid is at low level) or type W (dual switching unit).

  Temperature gauge which records the temperature of the operating fluid in the tank; display in °C. Dual scale in °C and °F is available on request.

- FSK-2SP: query the minimum or maximum levels

  Alternatively, two additional switching points from size 254

  Option: marker to sight tube and float

  Optical liquid level monitoring by red float possible.

  Simple, standardised mounting conditions (FSA/K).

- TS: three nominal temperatures possible: 60 °C, 70 °C and 80 °C.

  Simple, standardised mounting conditions (FSA/K).

  Non-corroding surfaces.

1.2 FUNKTION

FSA

By using a FSA, the fluid level can be easily seen on the outside of the tank. The fluid enters the unit via the lower connection bore and is clearly visible in the tube. Selection of the correct size allows the respective level of the fluid to be monitored.

FSK

By using a FSK, the fluid level is monitored via an electrical switching signal. The switching signal can be used as a warning message or to regulate the fluid level. The fluid enters the unit via the lower connection bore and pushes up a float in the tube. The float now shows the level of the fluid in the tank. If the level of fluid drops again, the float activates a switching contact.

On type C the circuit is then closed and on type O the circuit is the open.

The special variant changer (type W) has two options. It can be used as a closer, as well as a opener.

TS

The TS us a very useful additional option to the FSA and FSK products. However, it also has a useful application as a separate build-on unit on system.

The temperature sensor of the TSE, when fitted, is surrounded by operating fluid. When nominal temperature is reached, a contact opens and the circuit is broken.

This switching process can be used either as a warning message or to monitor the temperature.

When the temperature of the fluid drops by approx. 15 K, the circuit closes again.

1.3 APPLICATION

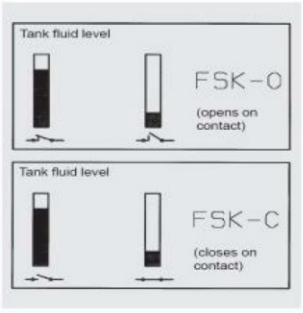
Fluid level gauges FSA, fluid level sensors FSK and temperature switches TS are used to monitor and control levels of operating fluid.

Areas of application are for example: Machine tools, system engineering, hydraulic oil, lubricating oil and cutting oil tanks as well as gearboxes.

1.4. NOTES

The upper viscosity limit is 2,000 mm2/s. It is not possible to combine a temperature switch TSE with an FT temperature gauge.
Te ensure correct functioning, pressure, viscosity and temperature specifications must be observed.
FSA/FSK

Not suitable for use with glycol or fluids containing glycol.
FSK
Depending on the fluid level of the tank the following switching logic applies.

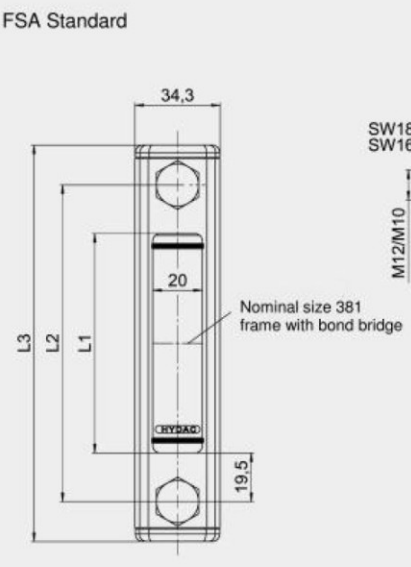


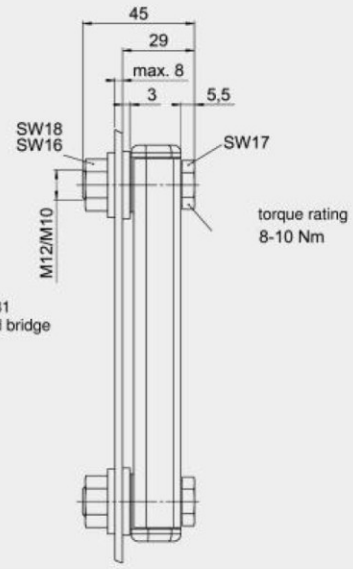
The switching logic of the fluid level sensor is considered by the filled container perspective.
In the FSK type O the switching contact opens when the fluid level drops below the switching level.
Correspondingly, in the FSK type C, the switching contact closes when the fluid level drops below the switching level.

3. DIMENSIONS

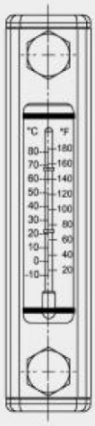
3.1 FLUID LEVEL GAUGE FSA

FSA Standard

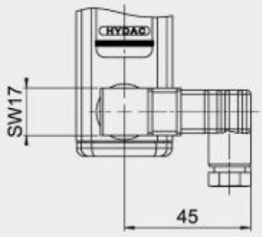


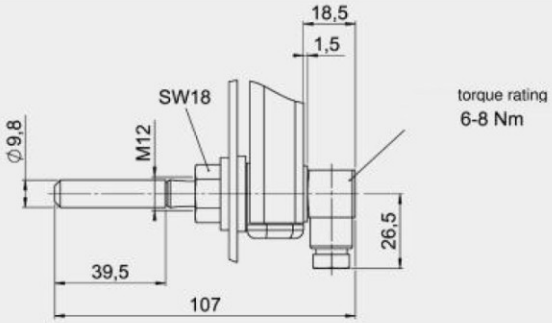


FSA with thermometer

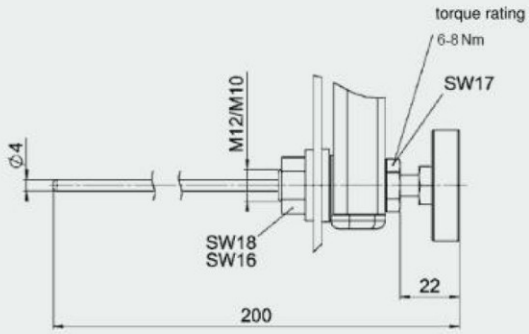


FSA with temperature switch



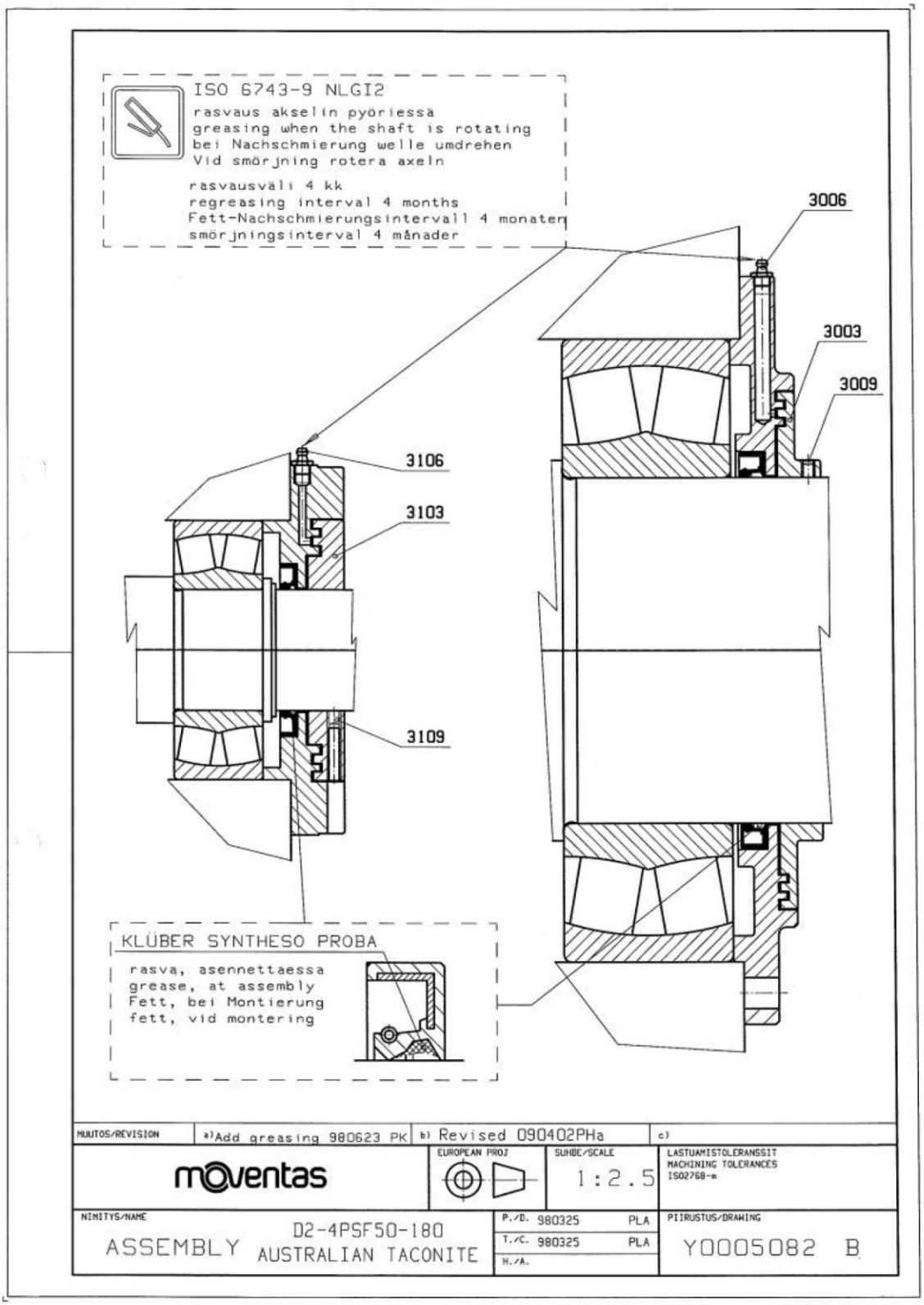


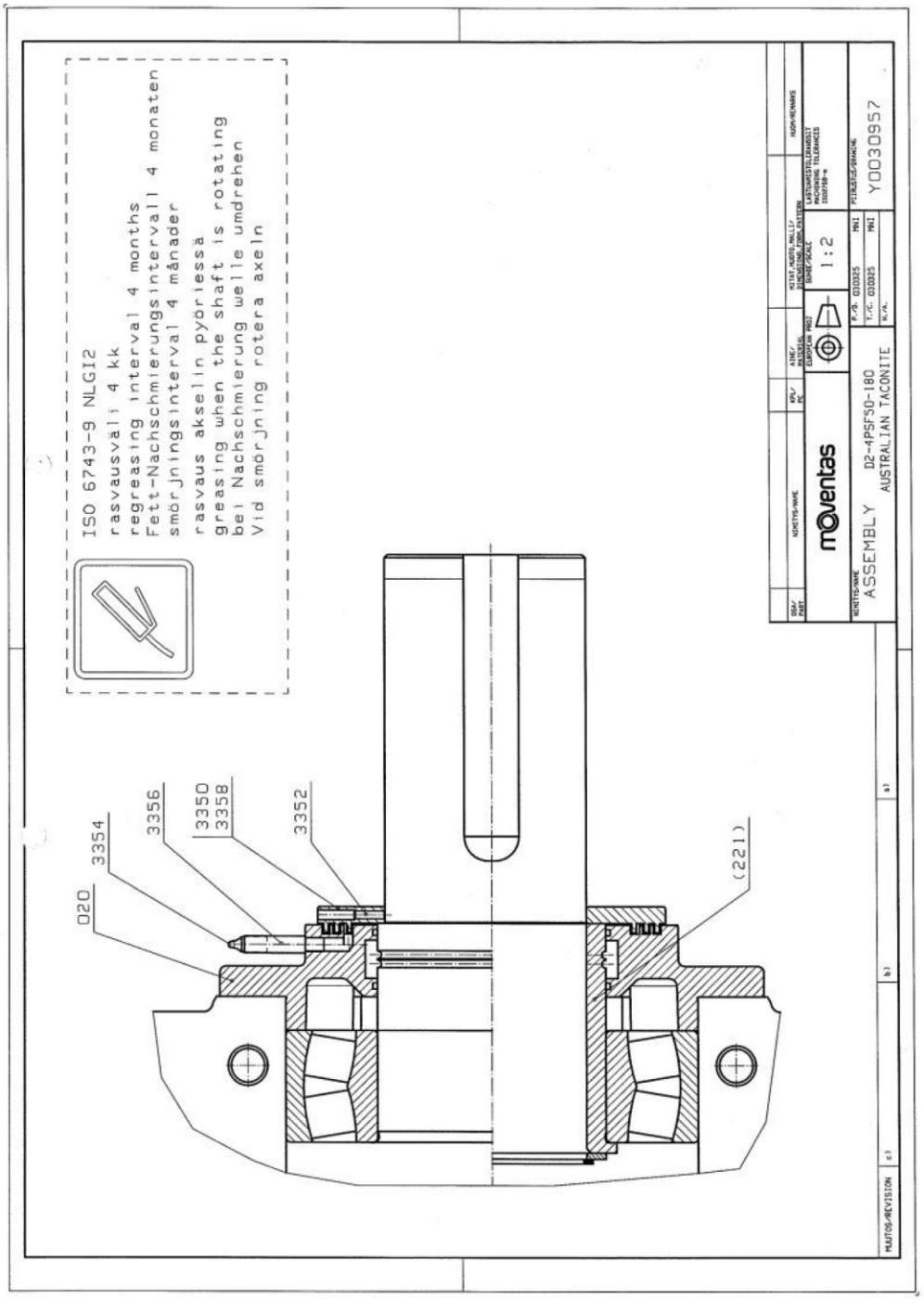
FSA / FSK with temperature gauge



Nominal size =centre distance of bolts	L3	L1	L2
76	107	37	76
127	158	88	127
176	207	137	176
254	285	215	254
381	412	342	381

Таконитовое уплотнение




ISO 6743-9 NLGI2
rasvausväli 4 kk
regreasing interval 4 months
Fett-Nachschmierungsintervall 4 monaten
smörjningsinterval 4 månader
rasvaus akselin pyöriessä
greasing when the shaft is rotating
bei Nachschmierung welle umdrehen
Vid smörjning rotera axeln
3354
3356
3350
3358
3352
(221)
020
mventas
ASSEMBLY
D2-4PSF50-180
AUSTRALIAN TACONITE
1:2
Y0030957

Стопор обратного хода

Stieber Clutch

Malli, Type, Bauart AA

FIN Esittely

Malli AA on laakeroimaton kiilarulla-vapaakytkin.

Aksiaali- ja radiaalivoimia varten tarvitaan laakerit. Voitelu ja tiivistys on järjestettävä ennen asennusta.

Vakiovoiteluaine on öljy.

Tyypillinen asennusesimerkki on viereisellä sivulla.

Sisäkehä lukitaan akselille kiilaliitoksella.

Ulkokehän ohjausolakkeen toleranssi on H7.

Ulkokehän kiinnitysruuvien lujuusluokka on 10.9 tai parempi.

Malli AA voi ottaa vastaan aksiaalipoikkeaman sisä- ja ulkokehältä ± S/2.

GB Description

Type AA is a roller type freewheel non bearing supported.

Bearings are required to support axial and radial loads.Lubrication and sealing must also be provided by the installation.

Standard lubrication is oil.

A typical installation is shown on the following page.

The inner race is keyed to the shaft.

The fit for centering of the outer race must be to H7 tolerance.

Connection of the outer race is via through bolts to grade 10.9 or better.

This design can accept an axial mis-alignment of inner and outer race
of ± S/2.

D Beschreibung

Die Bauart AA ist ein ungelagerter Rollenfreilauf.

Auf eine einwandfreie Lagerung, Schmierung und Abdichtung des Freilaufes ist zu achten.

Empfohlen wird Ölschmierung.

Der typische Einbau dieses Freilaufs entspricht dem Beispiel auf der nächsten Seite.

Am Innenring wird das Drehmoment von einer Paßfeder übertragen.

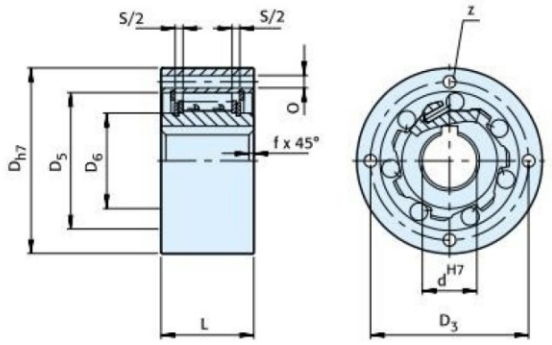
Die Zentrierung des Außenringes sollte mit einer Passung H7 erfolgen.

Das Drehmoment wird über Schrauben der Qualität 10.9 übertragen.

Das Axialspiel des Freilaufs erlaubt es, die beiden Ringe nach jeder Seite um das Maß S/2 zu verschieben.

Stieber Clutch

Malli, Type, Bauart AA



Malli Type Bauart	Koko Size Größe	Vapaapyörintänopeudet Overrunning speeds Leerlaufdrehzahlen												Paino Weight Gewicht	Pyörintävastus Resistance torque Schleppmoment
	d^{H7} [mm]	T_{KN} 1) [Nm]	n_{imax} 2) [min⁻¹]	n_{amax} 3) [min⁻¹]	D_{h7} [mm]	L [mm]	D_5 [mm]	D_6 [mm]	D_3 [mm]	Z	O [mm]	f [mm]	s [mm]	[kg]	T_R [Ncm]
AA	12	17	3100	6000	47	20	28	20	38	3	5,5	0,5	4,5	0,21	0,7
	15	55	2300	5400	55	30	37	26	45	3	5,5	0,8	4,5	0,44	3,5
	20	146	2000	3600	68	34	50	35	58	4	5,5	0,8	5,5	0,70	8,4
	25	285	1700	2600	90	37	68	45	78	6	5,5	1	6,5	1,30	14
	30	500	1500	2100	100	44	75	50	87	6	6,6	1	6,5	2,00	23
	35	720	1300	1950	110	48	80	55	96	6	6,6	1	6,5	2,60	60
	40	1030	1200	1700	125	56	90	60	108	6	9	1,5	7,6	3,90	72
	45	1125	1050	1500	130	56	95	65	112	8	9	1,5	7,6	4,00	140
	50	2150	950	1300	150	63	110	78	132	8	9	1,5	7,6	6,00	180
	55	2675	850	1200	160	67	115	82	138	8	11	2	7,6	7,20	190
	60	3500	800	1100	170	78	125	90	150	10	11	2	7,6	9,20	240
	70	5813	650	900	190	95	140	100	165	10	11	2,5	7,6	11,8	320

(FIN) Huomautuksia

1) $T_{maks.} = 2 \times T_{KN}$
Katso valinta sivuilta 12…19
2) Sisäkehä pyörii vapaapyörintää
3) Ulkokehä pyörii vapaapyörintää
Kiilaura DIN 6885.1 mukaan
Katso asennus- ja huolto-ohjeita sivuilta 20…23

(GB) Notes

1) $T_{max} = 2 \times T_{KN}$
Refer to Selection page 12 to 19
2) Inner race overruns
3) Outer race overruns
Keyway to DIN 6885.1
Refer to mounting and maintenance instructions page 20 to 23

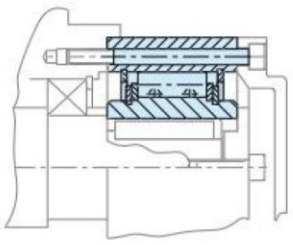
(D) Bemerkungen

1) $T_{max} = 2 \times T_{KN}$
Siehe Auswahl Seite 12 bis 19
2) Innenring überholt
3) Außenring überholt
Paßfedernut nach DIN 6885.1
Siehe Montage- und Wartungshinweise Seite 20 bis 23

Asennusesimerkki

Mounting example

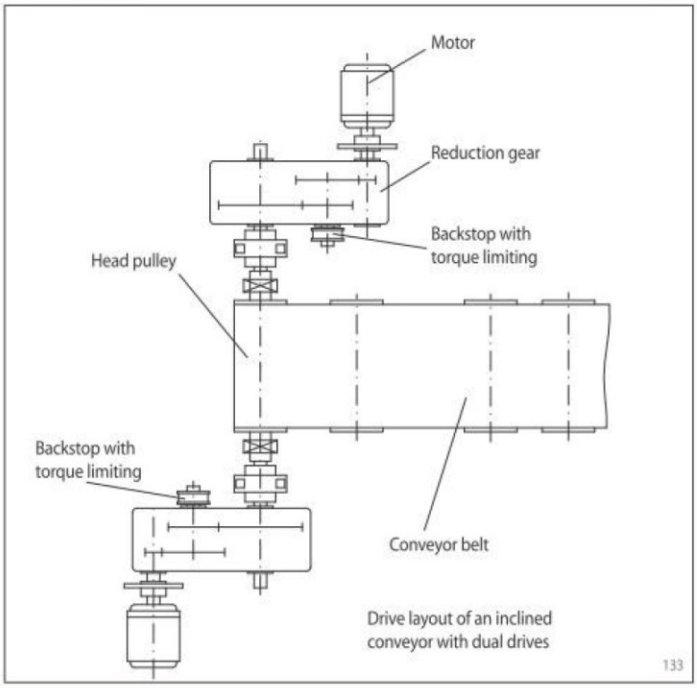
Einbaubeispiel



Стопор обратного хода отключаемый

Integrated Freewheels FXRV and FXRT

for bolting to the face
with sprag lift-off X and torque limiting



Drive layout of an inclined conveyor with dual drives

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Features

Integrated Freewheels FXRV and FXRT are sprag freewheels without bearing support and with sprag lift-off X. They consist of the Integrated Freewheels FXM (refer to pages 62 to 65) with additional torque limiter.

The sprag lift-off X ensures a wear-free freewheeling operation when the inner ring rotates at high speed.

The freewheels FXRV and FXRT are used as:

- Backstops

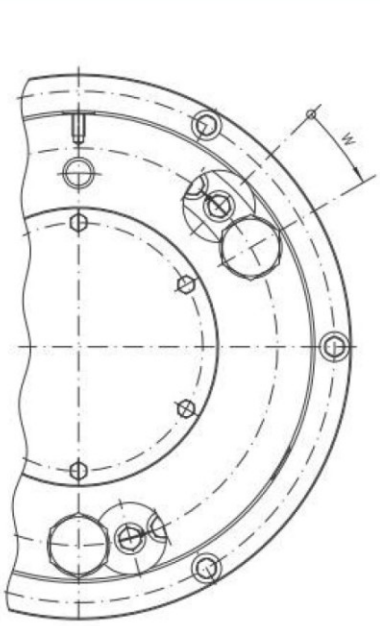
in the case of inclined conveyors with multiple drives, where several drives are equipped with their own backstops. In such installations, when stopping the load, the total backdriving torque initially (due to various backlashes and elasticities in the various drives) appears solely or predominately in only one backstop. This problem is solved as the torque limiter, which is built into the backstop, slips until additional backstops successively become engaged. Therefore it is achieved, that the total backdriving torque is distributed to the individual backstops. Furthermore dynamic peak torques of the locking procedure are reduced so that the reduction gear is protected from damaging peak torques. This makes the backstops FXRV and FXRT a valuable design element in increasing the operating security of inclined conveyors.

Advantages

- Protection of gearboxes from dynamic peak torques in the locking procedure
- Protection of gearboxes from overload by unequal load distribution in multiple drives
- Smaller gearboxes can be used without negatively effecting the safety
- Protection of the backstops, as dynamic peak torques are reduced by temporarly slipping

Integrated Freewheels FXRV and FXRT

for bolting to the face
with sprag lift-off X, torque limiting and release function



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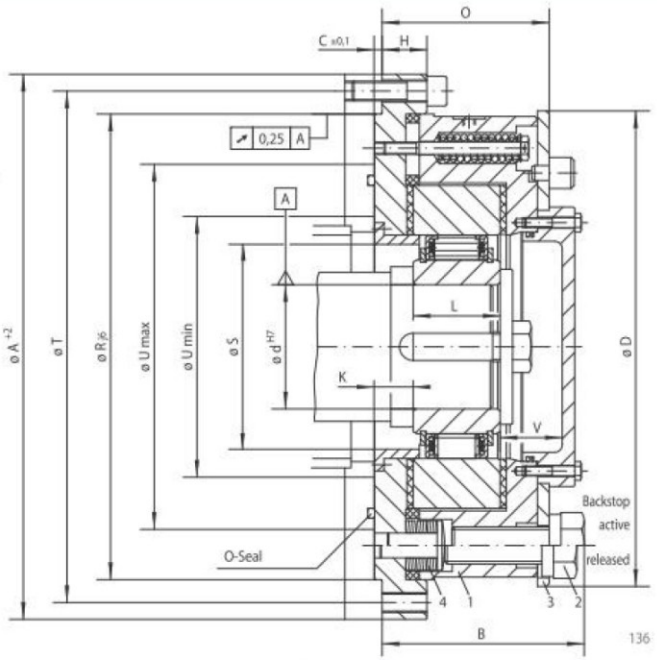

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Backstop

Type with Sprag lift-off X
For extended service life using sprag lift-off at high speed rotating inner ring

Dimensions

Freewheel Size	Type	Slipping torque M_R Nm	Sprag lift-off at inner ring speed min^{-1}	Max. speed Inner ring freewheels min^{-1}	Bore d Standard mm	mm	mm	mm	mm	max. mm	A mm	B mm	C mm	D mm	G**	H mm	K mm	L mm	O mm	R mm	S mm	T mm	U*** min. mm	U*** max. mm	V mm	Z**	Weight kg
FXRT 85 - 40	SX	1 400	430	6 000	45	50	60	65		65	330	151	6	280	M12	34	29	60	127	280	110	308	165	215	38	6	48
FXRT 100 - 50	SX	2 300	400	4 500	45	50	55	60	70	75	80*	350	163	6	311	M12	34	31	70	134	300	125	328	180	240	38	6	58
FXRT 120 - 50	SX	3 400	320	4 000	60	65	70	75	80	95	95	400	163	6	345	M16	36	31	70	134	340	145	373	200	260	38	6	80
FXRT 140 - 50	SX	4 500	320	3 000	65	90	100	110			110	430	167	6	386	M16	36	31	70	135	375	165	403	220	280	50	6	90
FXRT 170 - 63	SX	9 000	250	2 700	70	85	90	100	120		130	500	193	6	462	M16	43	40	80	157	425	196	473	250	340	38	6	140
FXRT 200 - 63	SX	12 500	240	2 100	130						155	555	193	6	516	M16	43	40	80	157	495	226	528	275	390	38	6	195
FXRT 240 - 63	UX	21 200	220	3 000							185	710	200	8	630	M20	50	50	90	173	630	290	670	355	455	38	12	340
FXRT 260 - 63	UX	30 000	210	2 500							205	750	212	8	670	M20	50	50	105	183	670	307	710	375	500	38	12	410
FXRT 290 - 70	UX	42 500	200	2 500							230	850	212	8	755	M24	50	50	105	193	730	335	800	405	560	38	12	490
FXRT 310 - 96	UX	53 000	195	2 100							240	900	280	10	775	M24	63	63	120	246	775	355	850	435	600	50	12	740

Keyway according to DIN 6885, page 1 • Tolerance of keyway width JS10. * Keyway according to DIN 6885, page 3 • Tolerance of keyway width JS10.
** Z = Number of fastening holes for screws G (DIN 912) on pitch circle T. *** Area for O-ring sealing.
Other freewheel sizes upon request.

Torques

The Integrated Freewheels FXRT are supplied with a set slipping torque M_R of the torque limiter. The static backdriving torque M_L of the installation (also in the case of an overload) must under no circumstances achieve the sum of the slipping torques M_R of the provided Integrated Freewheels. The slipping torques M_R specified in the table are maximum values; lower values can be set.

Mounting

The Integrated Freewheels FXRT are without bearing support, therefore it must be ensured that the run out (T.I.R.) between the pilot diameter R and the shaft diameter d does not exceed the value 0,25 mm.

Dimension C applies for the Integrated Freewheel. The centering depth of the customer attachment part must be at least C +0,2 mm. The tolerance of the pilot diameter of the attachment part must be ISO H7.

The tolerance of the shaft must be ISO h6 or h7

Release function

The finely controllable release function consists basically of three special screws (2) that are located in the spring pocket (1) and the locking plate (3). To release the backstop, first of all the special screws have to be unscrewed slightly, then the locking plate has to be turned clockwise by the angle W. The special screws can then be tightened, whereupon, with the aid of the belleville spring set (4) the release procedure is finely initiated. When the release facility is actuated a small amount of oil may seep out for a brief period of time.

Цанговая муфта тихоходного вала

RINGSPANN Flange-Couplings RFK E04.020e
with keyless shaft/hub connection

Applications

A rigid and easy to disassemble shaft coupling solution for:

- Various types of elevators
- Conveyor pulley drives
- Bucket wheel excavators
- Escalators and moving walkways
- Many other possibilities

Advantages

- Backlash free due to keyless shaft/hub connection
- Stronger connection than traditional "keyed" connections
- No fretting corrosion on tapered faces
- Reduced axial space required for installations
- Fast disassembly for minimal downtime
- Flange dimensions made to German RAG standard
- Proven solution in many applications

Technical Data

size	shaft ø mm	weight kg	max. transmissible torque M_{max} if bending moment $M_b = 0$ Nm	max. transmissible bending moment M_{bmax} Nm	reduced transmissible torque M_{red} if bending moment $M_b = M_{bmax}$ Nm	hexagonal screws by DIN 931-10.9 size	number of screws per coupling
RFK 70	min. 50	32	6300	1800	6300	M14 x 60	8
	max. 70	30	10000	3750	10000		
RFK 90	min. 70	39	16000	4250	16000	M16 x 75	8
	max. 90	37	20000	7500	20000		
RFK 115	min. 95	47	28000	7500	22400	M24 x 100	8
	max. 115	45	35500	11800	28000		
RFK 140	min. 115	55	45000	16000	40000	M24 x 100	8
	max. 140	51	56000	23600	45000		
RFK 170	min. 140	112	90000	28000	75000	M30 x 120	18
	max. 170	105	112000	42500	85000		
RFK 210	min. 170	137	160000	56000	125000	M30 x 120	18
	max. 210	125	200000	85000	140000		
RFK 211	min. 170	160	160000	56000	125000	M30 x 130	18
	max. 210	148	200000	85000	140000		
RFK 250	min. 210	199	265000	106000	200000	M30 x 130	18
	max. 250	183	315000	150000	200000		
RFK 270	min. 250	259	375000	160000	265000	M30 x 130	24
	max. 270	249	400000	180000	265000		
RFK 290	min. 270	286	475000	200000	300000	M30 x 130	24
	max. 290	275	500000	224000	300000		

Surface finish of shaft $R_{z\,max} \leq 16\mu m$

Selection

RINGSPANN will select the proper coupling for each application based upon the allowed transmissible torque under existing bending moment conditions. RINGSPANN's selection calculations are in accordance with the latest scientific knowledge and know how in the industry and include the proper safety factor to prevent fretting corrosion.

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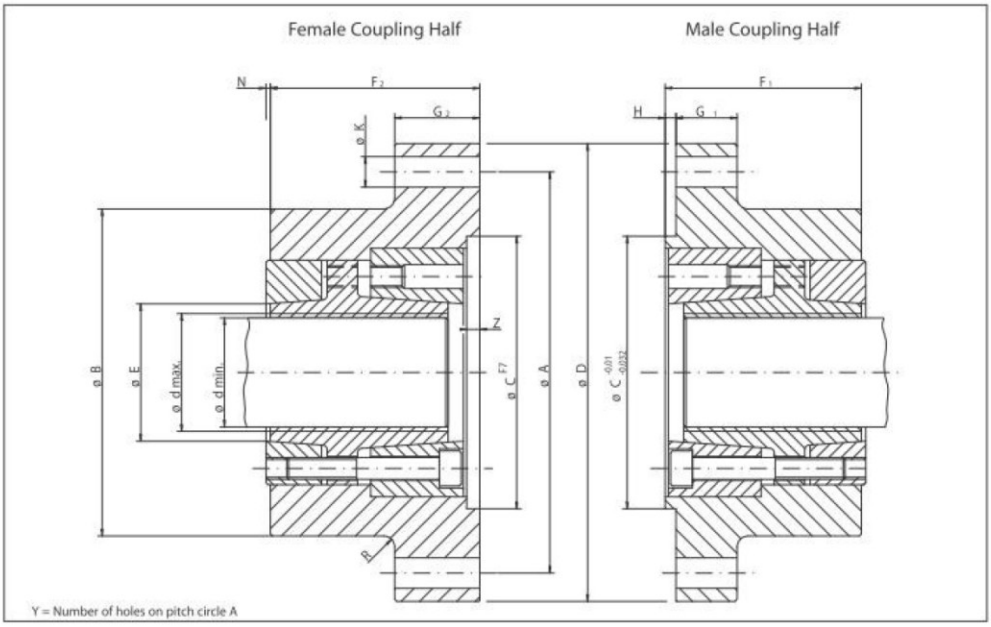
RINGSPANN Flange-Couplings RFK E04.020e
with keyless shaft/hub connection



Dimensions

Female Coupling Half size	Female Coupling Half part number	Male Coupling Half size	Male Coupling Half part number	shaft d_{h8} min. mm	shaft d_{h8} max. mm	A mm	B mm	C mm	D mm	E mm	F_1 mm	F_2 mm	G_1 mm	G_2 mm	H mm	K mm	L mm	N mm	R	Y mm	Z
RFK 70 F	3491.070.100.	RFK 70 M	3491.070.200.	50	70	230	170	150	260	76	81	88	20	25	5	16	75	5	15	8	7
RFK 90 F	3491.090.100.	RFK 90 M	3491.090.200.	70	90	280	200	180	320	96	96	103	25	30	5	18	90	6	25	8	7
RFK 115 F	3491.115.100.	RFK 115 M	3491.115.200.	95	115	350	230	300	400	122	105	115	30	35	6	25	100	8	30	8	10
RFK 140 F	3491.140.100.	RFK 140 M	3491.140.200.	115	140	350	270	300	400	145	105	115	30	35	6	25	100	8	30	8	10
RFK 170 F	3491.170.100.	RFK 170 M	3491.170.200.	140	170	480	330	300	560	175	135	145	36	41	8	32	128	10	36	18	12
RFK 210 F	3491.210.100.	RFK 210 M	3491.210.200.	170	210	480	390	300	560	215	135	145	36	41	8	32	128	10	36	18	12
RFK 211 F	3491.211.100.	RFK 211 M	3491.211.200.	170	210	550	430	350	630	215	135	145	40	45	8	32	128	10	40	18	12
RFK 250 F	3491.250.100.	RFK 250 M	3491.250.200.	210	250	550	470	350	630	264	150	160	40	45	8	32	140	10	20	18	12
RFK 270 F	3491.270.100.	RFK 270 M	3491.270.200.	250	270	630	510	550	710	284	169	179	40	45	8	32	158	10	40	24	12
RFK 290 F	3491.290.100.	RFK 290 M	3491.290.200.	270	290	630	550	550	710	305	169	179	40	45	8	32	158	10	40	24	12

Paired coupling halves of the same color can be interchanged due to matching flange patterns

RINGSPANN can offer shaft material recommendations based on calculated shaft compression stress.

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Зубчатая муфта тихоходного вала

MT-2005-EI05

ISO 9001 DNV ACCREDITED BY ENAC CERTIFICATED FIRM

acoplamientos
couplings

JAURE®

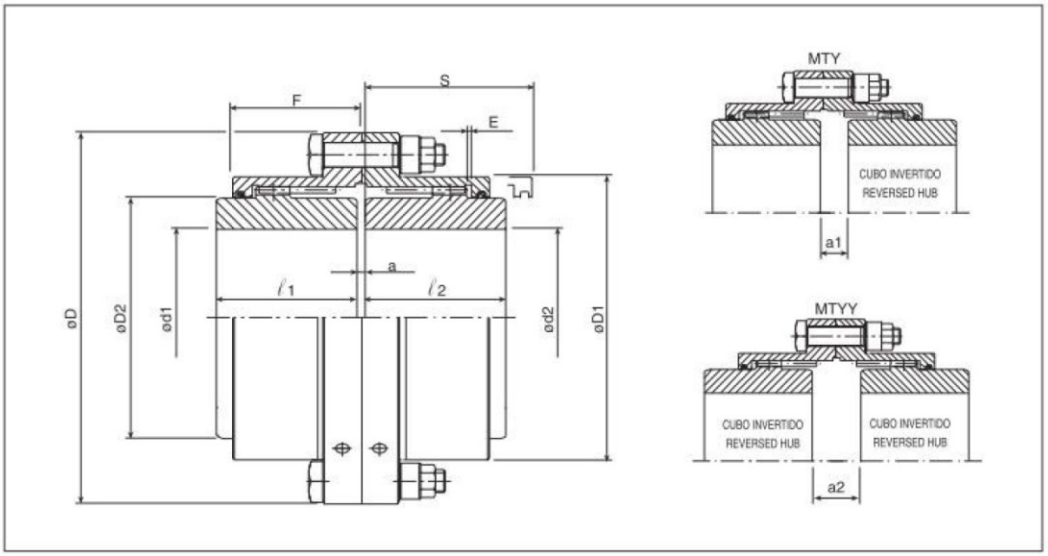
Nuevo / *New*

Dientes abombados
Crowned tooth gear couplings

tipo/*type* MT

Acoplamiento/*Coupling*

MT Diseño básico/*Basic design*



Ejemplo de denominación Denomination example	**MT-132** **MT-Y-132** **MT-YY-132**	Diseño básico Un cubo invertido Dos cubos invertidos	Basic design One reversed hub Two reserved hubs

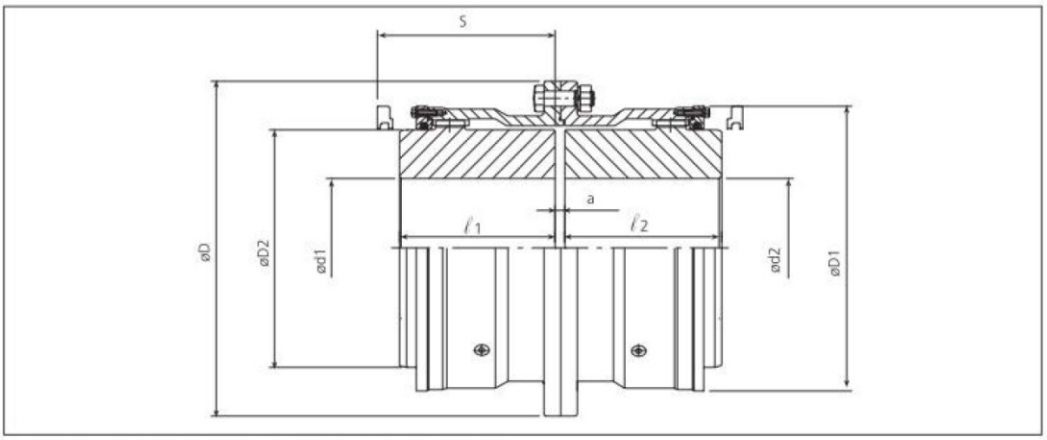
TAMAÑO *SIZE*	TN NOMINAL	TP MÁXIMO *TP MÁX*	VELOCIDAD MÁXIMA *n MAX (1)*	DIMENSIONES GENERALES *GENERAL DIMENSIONS*										PESO Max. (4) *WEIGHT Max. (4)*	PESO Min. (5) *WEIGHT Min. (5)*	MOMENTO DE INERCIA (4) *MOMENT OF INERTIA (4)*	CANTIDAD DE GRASA *GREASE QTY.*	RIGIDEZ TORSIONAL (4) *TORSIONAL STIFFNESS (4)*
	Nm	Nm	1/ min	D	D1	D2	d1-d2 (Min-Max) (2)	ℓ1-ℓ2	a	a1	a2	E	F	S(3)	Kg	Kg	J (Kgm²)	Kg	MNm/rad
52	**1.780**	3.600	8.600	111	82,5	69	14-52	43	3	5	7	1,5	39	57	4	3	0,005	0,03	2,51
62	**2.790**	5.520	7.000	141	104,5	85	17-62	50	3	8	13	1,5	46	64	8	6	0,016	0,06	5,79
78	**5.600**	11.100	5.800	171	127,5	107	20-78	62	3	14	25	1,5	61	76	14	10	0,040	0,09	8,76
98	**8.500**	17.400	4.700	210	156	133	26-98	76	5	12	19	2,5	69,5	92	26	18	0,11	0,12	16,46
112	**14.000**	28.200	4.200	234	181,5	152	30-112	90	5	24	43	2,5	84,5	108	39	26	0,20	0,3	21,86
132	**23.000**	45.600	3.600	274	210,5	178	35-132	105	6	27	48	3	96	125	58	42	0,45	0,4	34,87
156	**35.100**	69.600	3.200	312	248,5	209	70-156	120	6	32	58	3	109	140	91	61	0,88	0,6	60,06
174	**44.400**	88.000	2.900	337	274	234	85-174	135	8	37	66	4	123	162	115	77	1,33	0,8	69,56
190	**68.500**	139.600	2.600	380	308,5	254	95-190	150	8	50	92	4	142,5	180	165	115	2,48	1,4	113
210	**84.600**	167.600	2.400	405	334	279	110-210	175	8	52	96	4	154,5	205	211	142	3,59	2,5	119
233	**151.000**	304.000	2.200	444	365,5	305	120-233	190	8	58	108	4	166,5	218	260	167	5,00	3	140
275	**205.500**	407.000	2.000	506	424	355	130-275	220	10	72	134	5	193,5	252	411	252	10,39	4,5	216

(1) Consúltese a JAURE para acoplamientos operando a velocidades superiores
(2) Agujero máximo para acoplamientos con chaveta según DIN-6885/1. Para otro tipo de chavetas o uniones consulte a JAURE
(3) Espacio necesario para alinear los cubos y para sustituir las juntas.
(4) El peso, el momento de inercia y la rigidez torsional están calculados con dimensiones de agujero mínimo.
(5) El peso está calculado con agujero máximo

(1) Consult JAURE for couplings operating at higher speeds.
(2) Max. allowable bore for couplings with DIN 6885/1 keys. For other types of keys or connections please consult JAURE.
(3) Clearance to align coupling hubs and replacement of sealing rings.
(4) Weight, moment of inertia and torsional stiffness are given for minimum bore.
(5) Weight is given for maximum bore.

Acoplamiento/*Coupling*

MTG Diseño básico/Basic design



Ejemplo de denominación / Denomination example (*): **MTG-370**

(*) Si ℓ1 y ℓ2 son diferentes del acoplamiento estándar en la tabla anexa, éstos se deberán especificar.
If ℓ1 an ℓ2 are different from the ones mentioned in the table below corresponding to standard couplings, they must be specified.

Ejemplo / Example: MTG-370/ℓ1=400/ℓ2=400 (ℓ1, ℓ2 mm)

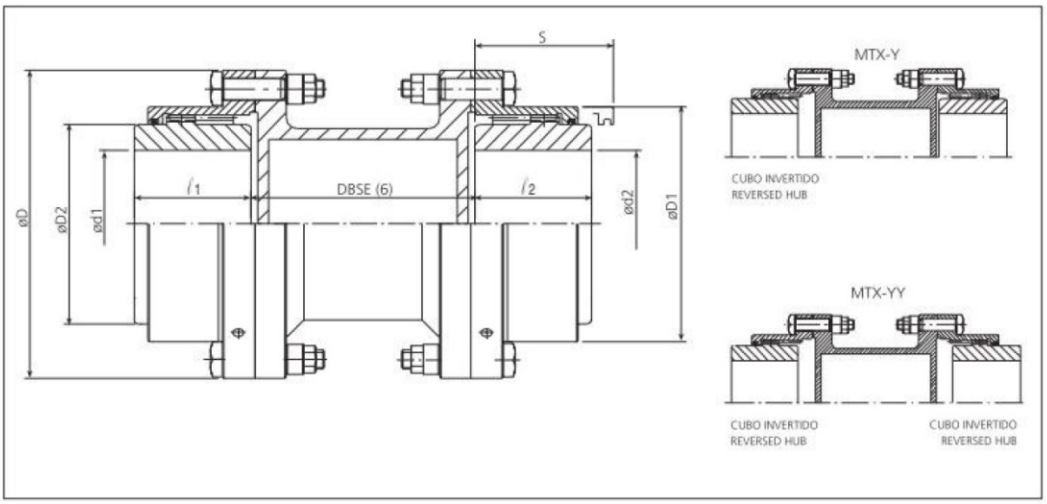
TAMAÑO *SIZE*	TN NOMINAL	TP MÁXIMO *TP MÁX*	VELOCIDAD MÁXIMA *n MAX (1)*	DIMENSIONES GENERALES *GENERAL DIMENSIONS*							PESO Max. (4) *WEIGHT Max. (4)*	PESO Min. (5) *WEIGHT Min. (5)*	MOMENTO DE INERCIA (4) *MOMENT OF INERTIA (4)*	CANTIDAD DE GRASA *GREASE QTY.*	RIGIDEZ TORSIONAL(4) *TORSIONAL STIFFNESS (4)*
	Nm	Nm	1/ min	D	D1	D2	d1-d2 (Min-Max) (2)	ℓ1-ℓ2	a	S (3)	Kg	Kg	J (Kgm²)	Kg	MNm/rad
280	**220.000**	440.000	1.800	540	465	370	140-280	250	16	300	527	346	14,95	3	118
310	**250.000**	500.000	1.600	585	505	410	160-310	270	16	320	676	442	22,93	3,6	274
345	**320.000**	640.000	1.500	650	548	450	180-345	290	16	340	884	574	36,84	4,8	387
370	**400.000**	800.000	1.400	690	588	490	210-370	325	20	370	1.105	733	53,16	5	434
390	**510.000**	1.020.000	1.300	760	640	520	230-390	345	20	400	1.379	957	79,63	9	637
420	**660.000**	1.320.000	1.200	805	690	560	250-420	365	20	420	1.667	1.154	110	9,8	817
460	**780.000**	1.560.000	1.100	850	730	600	275-460	400	20	450	2.043	1.372	153	11,5	966
500	**1.000.000**	2.000.000	1.050	930	780	650	300-500	410	25	490	2.452	1.643	217	11,5	1.180
550	**1.200.000**	2.400.000	950	995	850	710	325-550	430	25	520	3.035	1.991	313	14,5	1.533
590	**1.600.000**	3.200.000	900	1.055	910	760	350-590	470	25	550	3.720	2.413	434	23	1.827
620	**1.800.000**	3.600.000	850	1.140	970	810	375-620	500	30	600	4.648	3.145	633	23	2.117
650	**1.900.000**	3.800.000	800	1.190	1.020	840	400-650	520	30	630	5.152	3.469	765	30	2.383
680	**2.100.000**	4.200.000	750	1.250	1.080	890	425-680	540	30	650	5.954	4.077	990	36	2.991
730	**2.600.000**	5.200.000	700	1.300	1.150	950	450-730	570	30	680	6.956	4.634	1.277	38	3.361
800	**3.800.000**	7.600.000	660	1.420	1.270	1.050	475-800	600	30	725	9.036	5.971	1.980	46	4.557
900	**5.420.000**	10.840.000	590	1.600	1.430	1.180	500-900	670	35	800	13.330	8.670	3.663	57	7.743
1.000	**7.250.000**	14.500.000	550	1.740	1.570	1.320	525-1000	740	35	890	17.975	11.130	5.766	75	9.391
1.100	**8.650.000**	17.300.000	500	1.880	1.710	1.450	550-1100	800	35	980	23.150	13.930	8.683	115	10.967
1.200	**10.750.000**	21.500.000	480	1.990	1.830	1.580	575-1200	850	35	1.030	28.605	16.680	12.239	125	12.923

(1) Consúltese a JAURE para acoplamientos operando a velocidades superiores
(2)Agujero máximo para acoplamientos con chaveta según DIN-6885/1. Para otro tipo de chavetas o uniones consulte a JAURE
(3) Espacio necesario para alinear los cubos y para sustituir las juntas.
(4) El peso, el momento de inercia y la rigidez torsional están calculados con dimensiones de agujero mínimo.
(5) El peso está calculado con agujero máximo

(1) Consult JAURE for couplings operating at higher speeds.
(2) Max. allowable bore for couplings with DIN 6885/1 keys. For other types of keys or connections please consult JAURE.
(3) Clearance to align coupling hubs and replacement of sealing rings.
(4) Weight, moment of inertia and torsional stiffness are given for minimum bore.
(5) Weight is given for maximum bore.

Acoplamiento/*Coupling*

MTX Con espaciador / With spacer



Ejemplo de denominación
Denomination example

MTX-132 / DBSE = 1000(mm)/ V=1500 rpm
MTX-Y-132 / DBSE = 1000 (mm)/ V=1500 rpm
MTX-YY-132 / DBSE = 1000 (mm)/ V=1500 rpm

Donde "V" es la velocidad máxima / *Where "V" is the maximum speed*

TAMAÑO *SIZE*	TN NOMINAL	TP MÁXIMO *TP MÁX*	VELOCIDAD MAXIMA *n MAX (1)*	DIMENSIONES GENERALES *GENERAL DIMENSIONS*						Peso Max. (4) *Weight Max. (4)*	Peso en 100 mm de espaciador *Weight per 100 mm spacer*	Peso Min. (5) *Weight Min. (5)*	Momento de inercia (4) *Moment of inertia (4)*	Momento de inercia por 100 mm de espaciador *Moment of inertia per 100 mm spacer*	Cantidad de grasa *Grease Qty.*	Ra rig. tor. con 1 metro de DBSE (4) *Ra Torsional stiffness for 1 meter DBSE (4)*	Rb rig tor en 1 mm de espaciador *Rb Torsional stiffness per 1 mm spacer*
	Nm	Nm	1/ min	D	D1	D2	d1-d2 (Min-Max) (2)	/1-/2	S (3)	Kg	Kg	Kg	J (Kgm^2)	J (Kgm^2)	Kg	MNm/rad	MNm/rad
52	**1.780**	3.600	Consúltese Fig nº6 en pág. 33 para max. velocidad posible. For max. allowable speed consult fig.nº6 on sheet 33	111	82,5	69	14-52	43	57	14	0,8	13	0,017	0,0009	0,03	0,08	85
62	**2.790**	5.520		141	104,5	85	17-62	50	64	23	1,0	21	0,047	0,0019	0,06	0,19	190
78	**5.600**	11.100		171	127,5	107	20-78	62	76	36	1,5	31	0,099	0,0033	0,09	0,33	329
98	**8.500**	17.400		210	156	133	26-98	76	92	60	2,4	52	0,27	0,0096	0,12	0,95	961
112	**14.000**	28.200		234	181,5	152	30-112	90	108	80	2,7	67	0,45	0,015	0,3	1,44	1.490
132	**23.000**	45.600		274	210,5	178	35-132	105	125	113	3,9	106	0,96	0,025	0,4	2,49	2.530
156	**35.100**	69.600		312	248,5	209	70-156	120	140	169	4,7	139	1,72	0,042	0,6	4,17	4.235
174	**44.400**	88.000		337	274	234	85-174	135	162	216	6,6	177	2,62	0,074	0,8	7,02	7.410
190	**68.500**	139.600		380	308,5	254	95-190	150	180	324	10,1	274	5,26	0,17	1,4	15,40	16.790
210	**84.600**	167.600		405	334	279	110-210	175	205	359	8,0	290	6,48	0,14	2,5	13,01	13.640
233	**151.000**	304.000		444	365,5	305	120-233	190	218	433	12,2	340	9,32	0,29	3	24,32	28.860
275	**205.500**	407.000		506	424	355	130-275	220	252	659	17,2	500	18,38	0,52	4,5	42,74	52.070

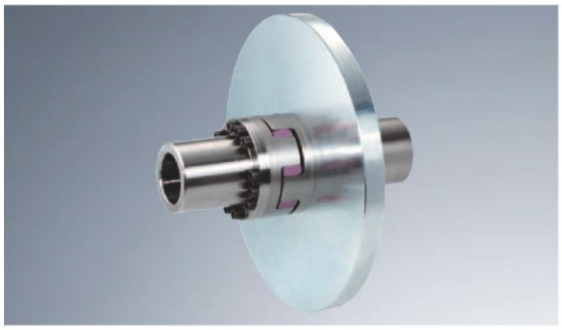
(1) Consúltese a JAURE para acoplamientos operando a velocidades superiores
(2)Agujero máximo para acoplamientos con chaveta según DIN-6885/1. Para otro tipo de chavetas o uniones consulte a JAURE
(3) Espacio necesario para alinear los cubos y para sustituir las juntas.
(4) El peso, el momento de inercia y la rigidez torsional están calculados con dimensiones de agujero mínimo y DBSE de 1m
(5) El peso está calculado con agujero máximo y DBSE de 1m
(6) Distancia a especificar por cliente. **DBSE es la distancia entre extremos de ejes, no entre bridas.**

(1) Consult JAURE for couplings operating at higher speeds.
(2) Max. allowable bore for couplings with DIN 6885/1 keys. For other types of keys or connections please consult JAURE.
(3) Clearance to align coupling hubs and replacement of sealing rings
(4) Weight, moment of inertia and torsional stiffness are given for minimum bore and 1m DBSE.
(5) Weight is given for maximum bore and 1m DBSE.
(6) Distance to be specified by the customer. **DBSE is distance between shafts ends, not between flanges.**

Cálculo de la rigidez torsional / *Torsional stiffness calculation*

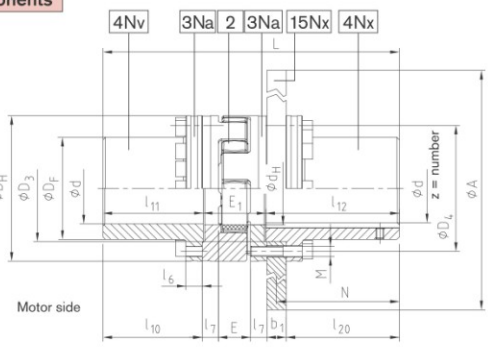
$$Rt\,(MNm/rad) = \frac{1}{\frac{1}{Ra} + \frac{DBSE(mm)\cdot 1000}{Rb}}$$

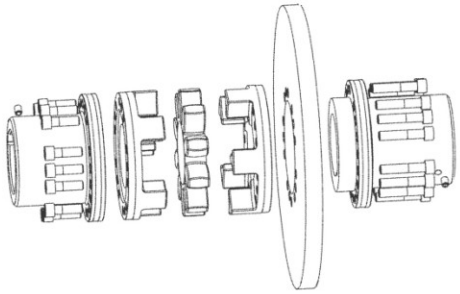
Type AFN-SB special with disk brake



- Shaft coupling AFN-SB special with disk brake for braking calipers
- Brake disk and spider can be replaced while being assembled
- The disk brake has to be placed onto the shaft end with the biggest mass moment of inertia
- The maximum braking torque must not exceed the maximum torque of the coupling
- Finish bore according to ISO fit H7, feather keyway according to DIN 6885 sheet 1 - JS9
- Mounting instructions under www.ktr.com

Components





ROTEX® Type AFN-SB special													
Size	Finish bore d		Dimensions [mm]										
	min.	max.	D_H	D_F	D_3 H7/h7	D_4	d_H	E	E_1	M	z	Pitch	T_A [Nm]
65	22	65	135	94	96	116	68	35	65	M10	12	16x22,5°	83
75	30	75	160	108	112	136	80	40	75	M12	15		120
90	40	100	200	142	145	172	100	45	82	M16	15		295
100	46	110	225	158	165	195	113	50	97	M16	15		295
110	60	125	255	178	180	218	127	55	103	M20	15	20x18°	580
125	60	145	290	206	215	252	147	60	116	M20	15		580
140	60	165	320	235	245	282	165	65	128	M20	15		580
160	80	190	370	270	280	325	190	75	146	M24	15		1000

ROTEX® Type AFN-SB special											
Size	Torque[1] mit 95Sh-A		Max. speed [rpm]	Max.brake torque [Nm][2]	Dimensions [mm]						
	T_{KN}	$T_{Kmax.}$			l_7	l_{10}	l_{11}	l_{12}	l_{20}	N	L
65	940	1880	3450	1880	16	112,5	113,5	166,0	135	150	344,5
75	1920	3840	3250	3840	19	131,5	133,0	166,5	135	150	374,5
90	3600	7200	3000	7200	20	164,0	165,5	206,5	175	190	454,0
100	4950	9900	2800	9900	25	153,5	155,0	206,5	175	190	458,5
110	7200	14400	2600	14400	26	201,5	203,5	212,0	180	195	518,5
125	10000	20000	2250	20000	30	198,5	200,5	212,0	180	195	528,5
140	12800	25600	1800	25600	34	244,5	247,0	252,5	220	235	627,5
									210 [3]	230 [3]	
160	19200	38400	1500	38400	38	226,5	229,0	252,5	220	235	627,5
									210 [3]	230 [3]	

Selection of ROTEX® coupling/disk brake											
Size	Brake disk ØA x b_1										
	355x30	400x30	450x30	500x30	560x30	630x30	710x30	800x30	900x30	900x40	1000x40
65	x	x	x								
75		x	x	x							
90			x	x	x	x					
100				x	x	x					
110				x	x	x	x				
125						x	x	x			
140							x	x	x	x	x
160							x	x	x	x	x

[1] Selection see page 20/21 [2] The max. braking torque must not exceed the maximum torque of the coupling. [3] Dimensions for a brake disk width b_1 of 40 mm.

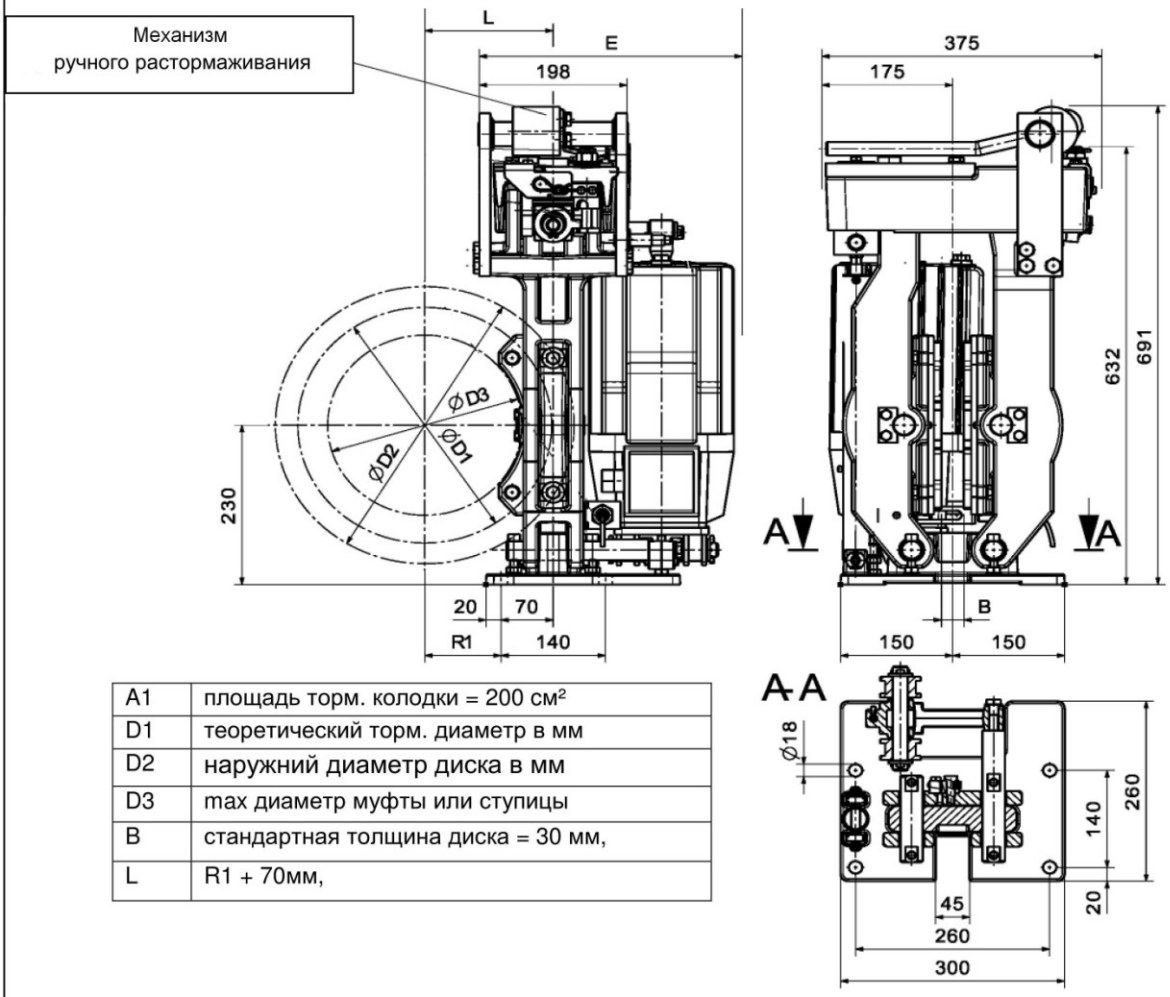
Order form:

ROTEX® 90	AFN-SB special	Ø450x30	95 Sh-A	4Nv – Ø 90		4Nx – Ø 90	
Coupling size	Type	ØDisk brake width of disk	Spider hardness	Compo-nent	Finish bore	Compo-nent	Finish bore

SIBRE
Sure to be Safe

Дисковый тормоз с электрогидротолкателем EMG
серии
USB3-1

M1501 206 RU
страница 1 / 1
04.2008



A1	площадь торм. колодки = 200 см²
D1	теоретический торм. диаметр в мм
D2	наружний диаметр диска в мм
D3	max диаметр муфты или ступицы
B	стандартная толщина диска = 30 мм,
L	R1 + 70мм,

Вес: прим. 80 кг (без эл. гидротолкателя)				Тип электрогидротолкателя											
				EB 220-50			EB 300-50			EB 500-60			EB 800-60		
			E	327			327			347			352		
				Тормозной момент **M** в **Нм** при μ = 0,35											
D2	D1	D3	R1	C	M min	M max	C	M min	M max	C	M min	M max	C	M min	M max
315	225	130	47,5	345	390	510	345	390	550	365	390	1160	370	780	1730
355	285	185	75,5	375	500	640	375	500	690	395	500	1470	400	1000	2190
400	340	235	102	400	600	770	400	600	830	420	600	1760	425	1190	2610
450	390	285	127	425	680	880	425	680	950	445	680	2020	450	1350	3000
500	437	335	152	450	750	990	450	750	1070	470	750	2260	475	1500	3360
560	495	390	182	480	850	1120	480	850	1210	500	850	2560	505	1700	3810
630	565	455	217	515	980	1280	515	980	1380	535	980	2920	540	1950	4350
710	653	530	257	555	1100	1480	555	1100	1590	575	1100	3380	580	2250	5020

Siegerland Bremsen – Emde GmbH & Co. KG – Auf der Stücke 1-5 – D-35708 Haiger, Germany
Tel.: +49 2773 94000 – Fax: +49 2773 9400-10 – e-mail: info@sibre.de – www.sibre.de

Тормозное устройство с колодками

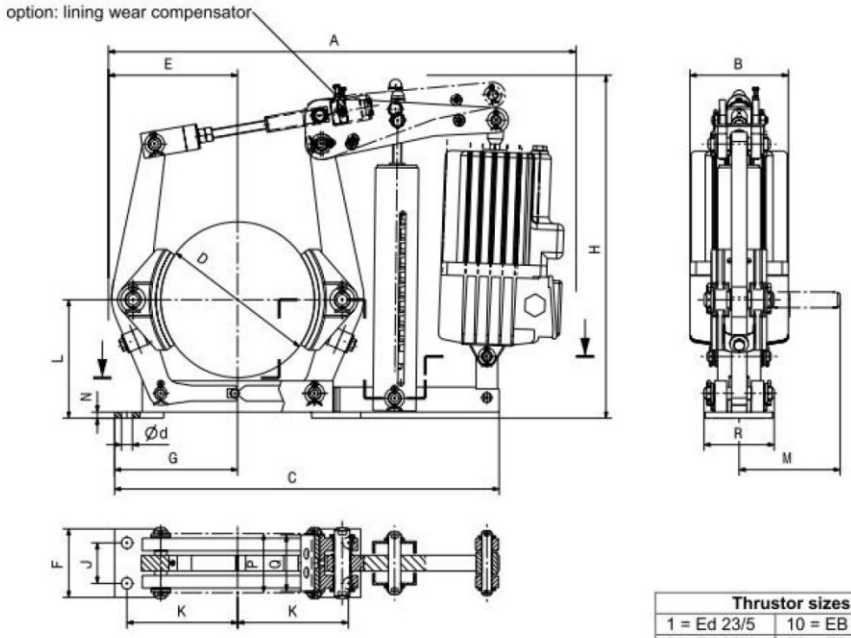
T1-2.1

SIBRE Safe to be safe
Siegerland Bremsen

Drum Brakes **TE**

acc. to DIN 15435
with external torque spring and electro-hydraulic thrustor

M 900 1000 E-DE/EN
page 1 / 1
02.2008



Thrustor sizes	
1 = Ed 23/5	10 = EB 220-50
2 = Ed 30/5	20 = EB 300-50
3 = Ed 50/6	30 = EB 500-60
4 = Ed 80/6	40 = EB 800-60
5 = Ed 121/6	50 = EB 1250-60
6 = Ed 201/6	60 = EB 2000-60
7 = Ed 301/6	70 = EB 3000-60

When ordering please advise:
- Brake Type and thrustor e.g. TE 250/23/5
- power supply voltage for thrustor
- with our without lining wear compensator
- options

Brake-Type	Thrustor size	Torque Range in Nm at μ = 0,4	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	d	kg*
TE 200	1 / 10	50 – 300	640	160	515	200	170	90	160	475	55	145	160	115	10	75	70	96	14	19
	2 / 20	85 – 400	640	160						475										
TE 250	1 / 10	40 – 325	760	160	625	250	210	110	200	550	65	180	190	133	10	95	90	113	18	30
	2 / 20	40 – 450	760	160						550										
	3 / 30	100 – 850	800	195						560										
TE 315	1 / 10	70 – 420	885	160	735	315	260	125	240	650	80	220	230	160	10	118	110	135	18	50
	2 / 20	70 – 550	885	160						650										
	3 / 30	75 – 1050	925	195						660										
	4 / 40	90 – 1700	925	195						660										
TE 400	2 / 20	80 – 575	1030	160	900	400	310	160	300	765	100	270	280	199	12	150	140	167	22	85
	3 / 30	100 – 1100	1075	195						775										
	4 / 40	100 – 1800	1075	195						775										
	5 / 50	125 – 2750	1075	240						775										
TE 500	3 / 30	200 – 1400	1225	195	1025	500	385	190	355	870	130	325	340	242	13	190	180	202	22	130
	4 / 40	200 – 2200	1225	195						870										
	5 / 50	200 – 3400	1215	240						870										
	6 / 60	200 – 5400	1215	240						870										
TE 630	5 / 50	500 – 3300	1365	240	1190	630	465	250	440	1000	170	400	420	295	15	236	225	244	27	206
	6 / 60	500 – 5500	1365	240						1000										
	7 / 70	500 – 8200	1365	240						1000										
TE 710	5 / 50	500 – 3800	1500	240	1302	710	525	270	490	1100	190	450	470	332	15	265	255	276	27	268
	6 / 60	500 – 6300	1500	240						1100										
	7 / 70	500 – 9400	1500	240						1100										

kg* = weight without thrustor

Alterations reserved

Siegerland Bremsen – Emde GmbH & Co. KG – Auf der Stücke 1-5 – D-35708 Haiger, Germany
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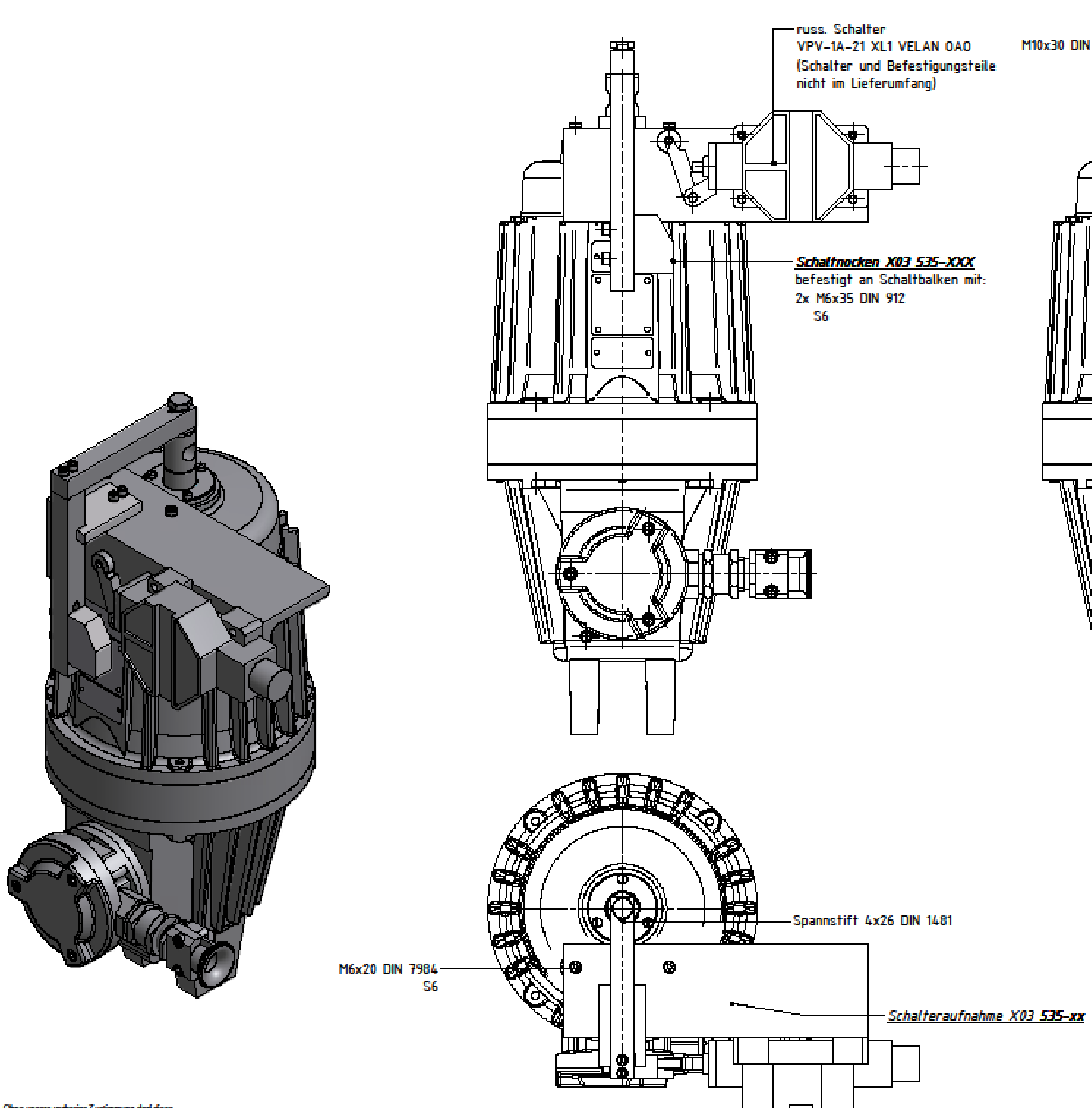
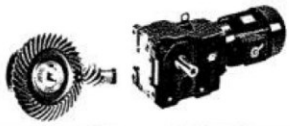


Verwendung	Fertigteil-Nr.	Maßstab 1:2,5	Gewicht 0,00 kg
EdEx 80/ .. 150/60 X03	Rohteil-Nr.	Werkstoff, Halbz. Modell, Gesenk-Nr.	
	Erst. 27.09.2012 CSchl	ELHY-Gerät EdEx 80/ .. 150/60 Lm2 X03 russ. Schalter	
	Bearb.		
	Gepr.		
	Inventor ELTENG-00104695.idw		
	EMG	535-Zxxx	Blatt 20 / A2
Zust. / Änderung / Datum / Name	Ursprung	Ersatz für	Ersetzt durch

Вспомогательный привод

45,0 kW
55,0 kW
75,0 kW

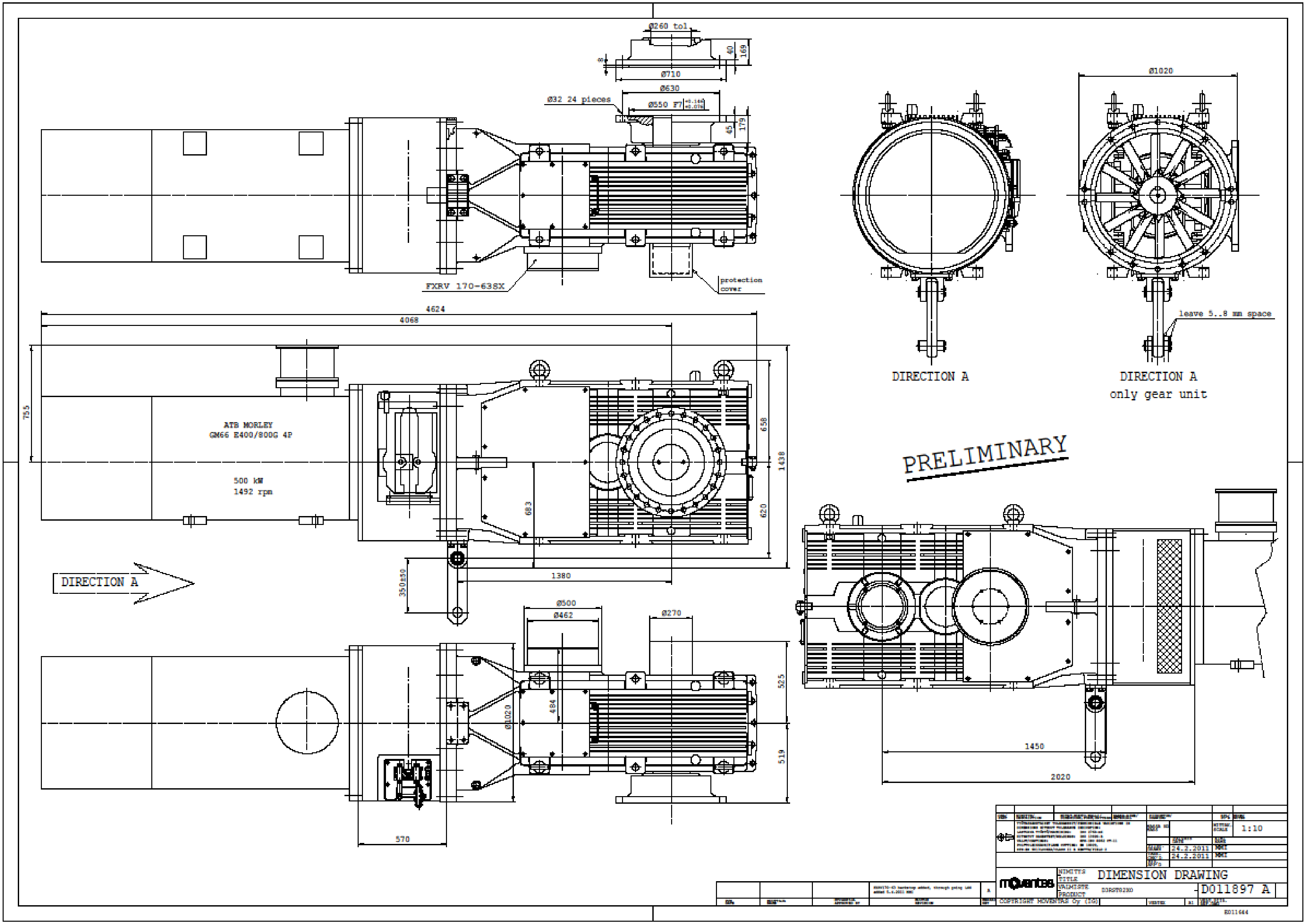


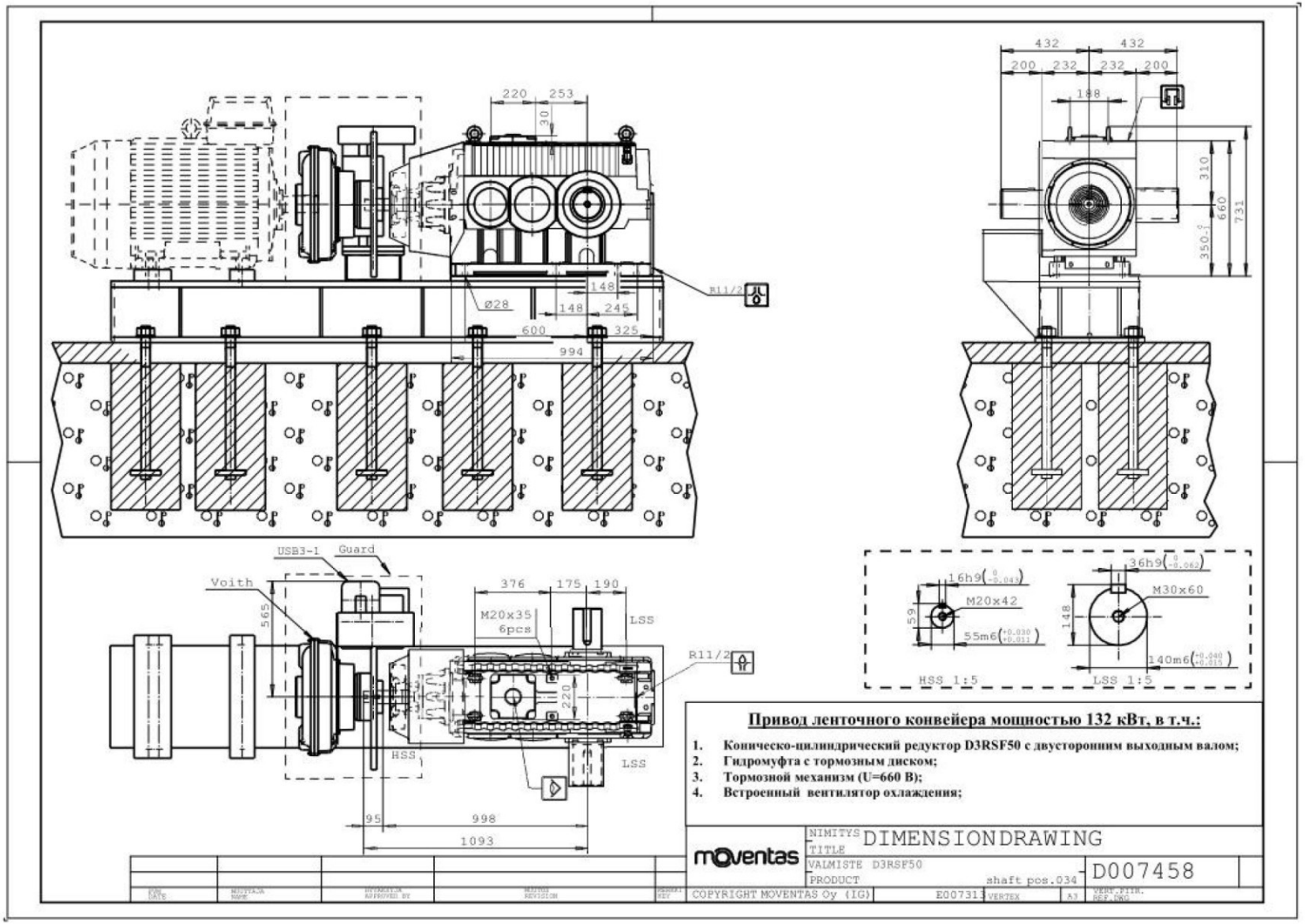
P_1 [kW]	n_2 [min^{-1}]	M_2 [Nm]	f_B	i_{ges}	F_R [kN]	F_A [kN]	$F_{R\,VL}$ [kN]	$F_{A\,VL}$ [kN]		kg	mm
45,0	50	8563	1,0	29,29	39,0	50,0	54,5	17,8	**SK 9072.1 - 225M/4**	571	D90-91
	58	7379	1,2	25,24	39,4	50,0	56,1	18,6			
	65	6566	1,3	22,46	39,6	50,0	57,0	19,0			
	71	6025	1,4	20,61	39,6	50,0	57,4	19,2			
	80	5347	1,5	18,29	39,4	50,0	57,8	19,5			
	89	4806	1,6	16,44	39,1	50,0	58,0	19,6			
	95	4502	1,7	15,40	38,6	50,0	57,1	19,4			
	105	4110	1,3	14,06	37,4	50,0	55,2	18,7			
	118	3657	1,4	12,51	37,1	49,8	55,1	18,7			
	122	3526	1,4	12,06	36,9	49,6	55,0	18,7			
	128	3356	1,5	11,48	36,7	49,4	55,0	18,7			
	144	2979	1,6	10,19	36,1	48,8	54,3	18,6			
	160	2678	1,8	9,16	35,6	48,1	53,8	18,4			
55,0	9,6	54757	0,9	154,29	220,0	100,0	-	-	**SK 9096.1 - 250M/4**	2170	D98-99
	11	47390	1,1	133,53	220,0	100,0	-	-			
	13	41942	1,2	118,18	220,0	100,0	-	-			
	14	36264	1,4	102,18	220,0	100,0	-	-			
	17	31799	1,6	89,60	220,0	100,0	-	-			
	18	28899	1,7	81,43	220,0	100,0	-	-			
	21	24988	2,0	70,41	220,0	100,0	-	-			
	23	23093	2,2	65,07	220,0	100,0	-	-			
	26	19967	2,5	56,26	218,4	100,0	-	-			
	31	16961	2,7	47,79	210,9	100,0	-	-			
	14	37517	0,9	102,28	104,2	70,0	160,0	70,0	**SK 9092.1 - 250M/4**	1835	D96-97
	16	32828	1,0	91,60	119,2	70,0	160,0	70,0			
	19	27645	1,2	80,00	131,9	70,0	160,0	70,0			
	21	25012	1,3	68,87	137,1	70,0	160,0	70,0			
	25	21010	1,5	58,66	143,8	70,0	160,0	70,0			
	30	17508	1,8	49,75	148,5	70,0	160,0	70,0			
	36	14590	2,2	40,65	151,7	70,0	160,0	70,0			
	38	13822	2,3	39,10	152,4	70,0	160,0	70,0			
	43	12215	2,5	34,15	153,8	70,0	160,0	70,0			
	51	10299	2,9	29,28	155,2	70,0	160,0	70,0			
	22	23875	0,8	67,50	83,0	65,0	120,0	65,0	**SK 9086.1 - 250M/4**	1225	D94-95
	25	21010	1,0	58,90	93,5	65,0	120,0	65,0			
	29	18112	1,1	50,30	95,1	65,0	120,0	65,0			
	35	15007	1,3	42,13	94,1	65,0	120,0	65,0			
	42	12506	1,4	35,44	91,7	65,0	120,0	65,0			
	50	10505	1,9	29,52	90,4	65,0	120,0	65,0			
	59	8903	2,2	25,21	88,1	65,0	120,0	65,0			
	70	7504	2,7	21,12	85,5	65,0	120,0	63,4			
	83	6328	2,8	17,77	82,4	65,0	120,0	61,2			
	90	5836	3,0	16,38	81,3	65,0	120,0	60,3			
	101	5200	2,6	14,70	78,4	65,0	120,0	58,1			
	120	4377	2,8	12,31	75,6	65,0	120,0	56,0			
	128	4104	3,1	11,60	75,2	65,0	120,0	55,8			
	155	3389	3,0	9,55	71,4	65,0	120,0	53,0			
	33	15917	0,8	44,63	65,7	60,0	95,0	54,9	**SK 9082.1 - 250M/4**	1015	D92-93
	36	14590	0,9	41,54	65,9	60,0	95,0	54,9			
	41	12811	1,0	35,83	65,9	60,0	95,0	54,9			
	47	11176	1,2	31,27	65,6	60,0	95,0	54,5			
	55	9550	1,4	26,71	65,0	60,0	95,0	53,8			
	66	7958	1,6	22,37	63,8	60,0	95,0	52,8			
	73	7195	1,8	20,16	62,8	60,0	95,0	52,0			
	85	6179	2,1	17,35	61,4	60,0	95,0	50,8			
	101	5200	2,5	14,61	59,7	60,0	95,0	49,3			
	120	4377	1,9	12,31	56,8	60,0	95,0	46,9			
	184	2855	2,5	8,04	52,2	60,0	95,0	43,1			
75,0	11	64405	0,8	133,53	220,0	100,0	-	-	**SK 9096.1 - 280S/4**	2345	D98-99
	13	57001	0,9	118,18	220,0	100,0	-	-			
	15	49284	1,0	102,18	220,0	100,0	-	-			
	17	43216	1,2	89,60	220,0	100,0	-	-			
	18	39276	1,3	81,43	220,0	100,0	-	-			
	21	33960	1,5	70,41	216,8	100,0	-	-			
	23	31385	1,6	65,07	214,5	100,0	-	-			
	26	27136	1,8	56,26	208,7	100,0	-	-			
	31	23050	2,0	47,79	202,7	100,0	-	-			
	36	19930	2,0	41,32	196,5	100,0	-	-			
	41	17479	2,2	36,24	191,5	100,0	-	-			
	45	15883	2,3	32,93	187,5	100,0	-	-			

Примеры исполнения комплектации приводов

производства фирмы «Moventas» (Финляндия), предназначенных для ленточных конвейеров.

Привод D3RST82XO (500 кВт)

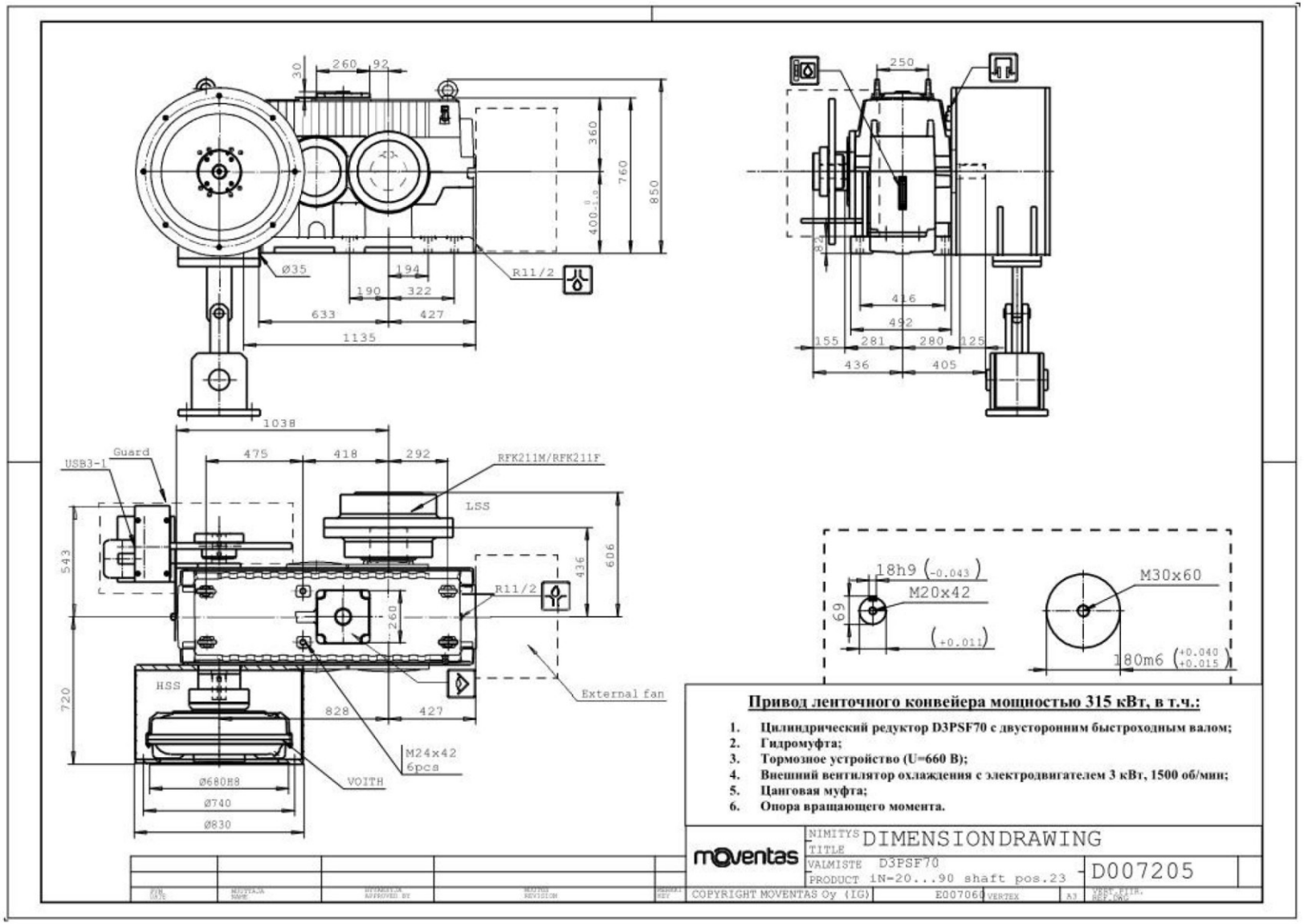

Ø260 tol
Ø710
Ø630
Ø550 F7
Ø32 24 pieces
FXRV 170-63SX
protection cover
4624
4068
755
ATB MORLEY
GM66 E400/800G 4P
500 kW
1492 rpm
658
1438
620
683
1380
350±50
DIRECTION A
Ø500
Ø462
Ø270
Ø1020
484
525
519
570
DIRECTION A
DIRECTION A
only gear unit
Ø1020
leave 5..8 mm space
PRELIMINARY
1450
2020
NIMITYS
TITLE
DIMENSION DRAWING
VAIMISTE
PRODUCT
D011897 A
1:10
24.2.2011
24.2.2011
COPYRIGHT MOVENTAS Oy (IG)



Привод ленточного конвейера мощностью 132 кВт, в т.ч.:

1. **Коническо-цилиндрический редуктор D3RSF50 с двусторонним выходным валом;**
2. **Гидромуфта с тормозным диском;**
3. **Тормозной механизм (U=660 В);**
4. **Встроенный вентилятор охлаждения;**

moventas	NIMITYS / TITLE	DIMENSIONDRAWING
	VALMISTE D3RSF50 / PRODUCT shaft pos.034	D007458
COPYRIGHT MOVENTAS Oy (IG)	E007313 VERTEX	A3

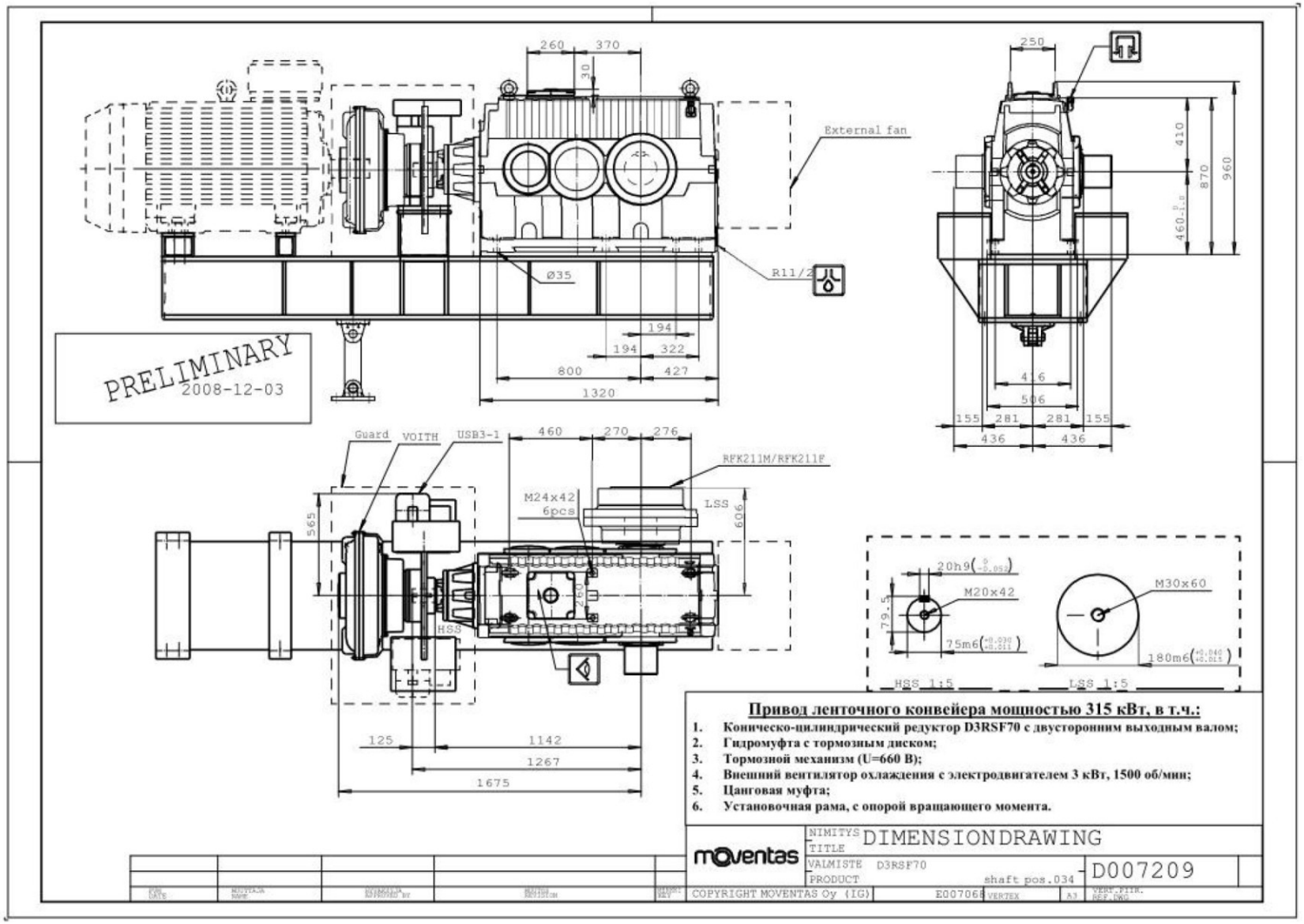


Привод ленточного конвейера мощностью 315 кВт, в т.ч.:

1. **Цилиндрический редуктор D3PSF70 с двусторонним быстроходным валом;**
2. **Гидромуфта;**
3. **Тормозное устройство (U=660 В);**
4. **Внешний вентилятор охлаждения с электродвигателем 3 кВт, 1500 об/мин;**
5. **Цанговая муфта;**
6. **Опора вращающего момента.**

moventas	NIMITYS / TITLE	DIMENSIONDRAWING
	VALMISTE	D3PSF70
	PRODUCT	iN=20...90 shaft pos.23
		D007205

E007060 VERTEX A3

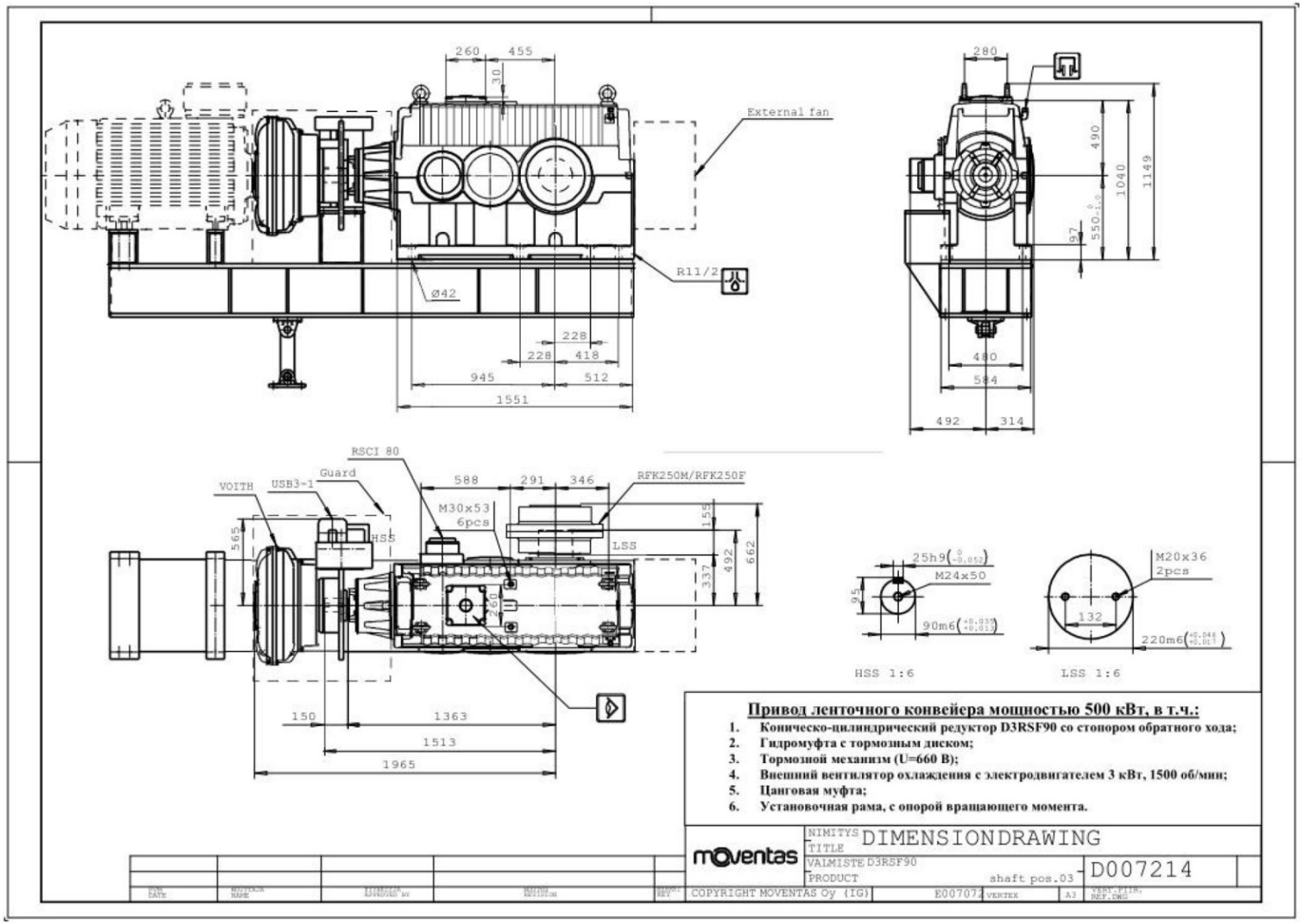


Привод ленточного конвейера мощностью 315 кВт, в т.ч.:

1. **Коническо-цилиндрический редуктор D3RSF70 с двусторонним выходным валом;**
2. **Гидромуфта с тормозным диском;**
3. **Тормозной механизм (U=660 В);**
4. **Внешний вентилятор охлаждения с электродвигателем 3 кВт, 1500 об/мин;**
5. **Цанговая муфта;**
6. **Установочная рама, с опорой вращающего момента.**

NIMITYS TITLE	DIMENSIONDRAWING
VALMISTE	D3RSF70
PRODUCT	shaft pos.034
	D007209

E007068 VERTEX A3



Привод ленточного конвейера мощностью 500 кВт, в т.ч.:

1. **Коническо-цилиндрический редуктор D3RSF90 со стопором обратного хода;**
2. **Гидромуфта с тормозным диском;**
3. **Тормозной механизм (U=660 В);**
4. **Внешний вентилятор охлаждения с электродвигателем 3 кВт, 1500 об/мин;**
5. **Цанговая муфта;**
6. **Установочная рама, с опорой вращающего момента.**

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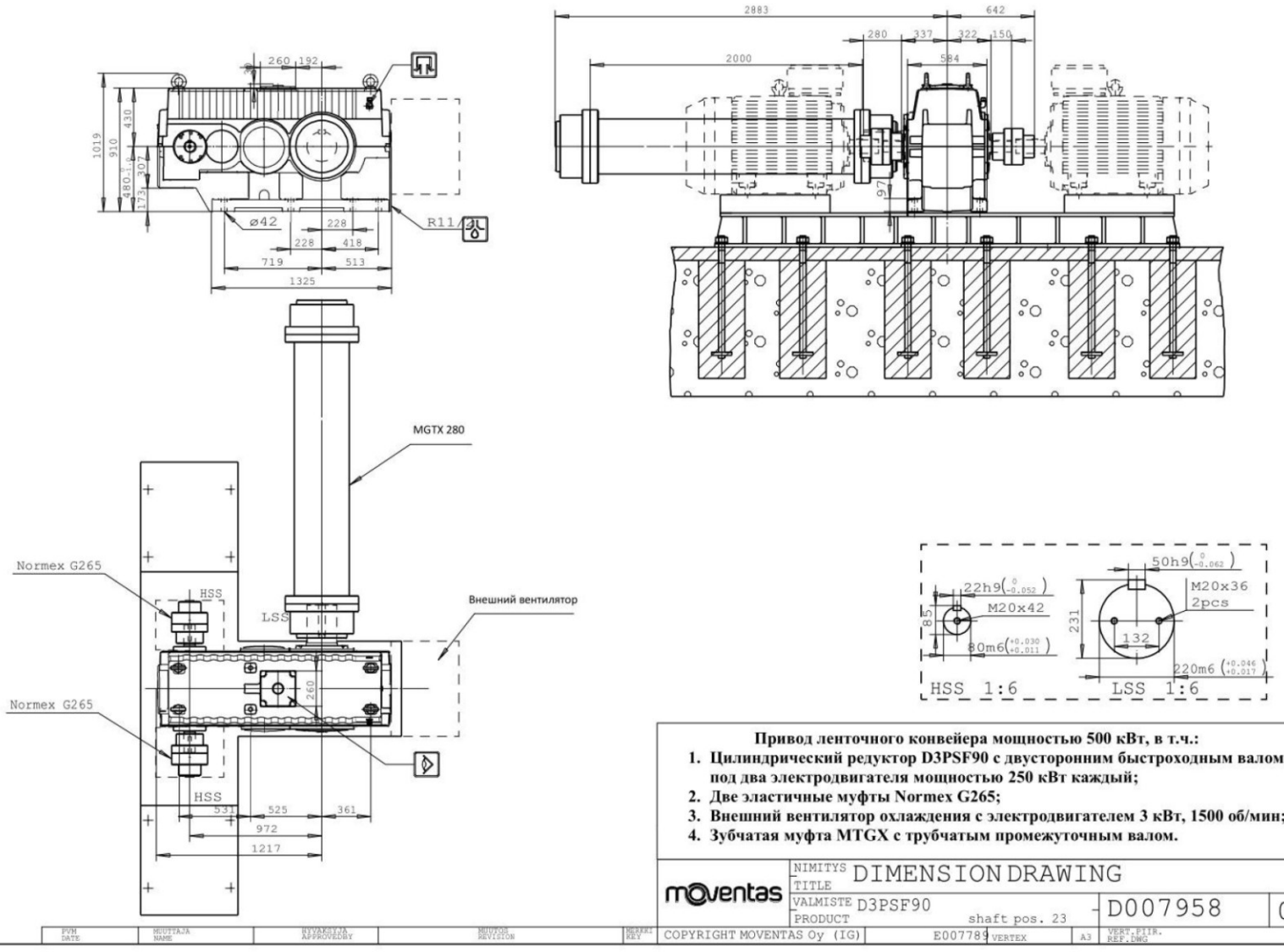
NIMITYS TITLE DIMENSIONDRAWING

VALMISTE D3RSF90

PRODUCT shaft pos.03

D007214

E007073 VERTEX A3



Привод ленточного конвейера мощностью 500 кВт, в т.ч.:

1. **Цилиндрический редуктор D3PSF90 с двусторонним быстроходным валом под два электродвигателя мощностью 250 кВт каждый;**
2. **Две эластичные муфты Normex G265;**
3. **Внешний вентилятор охлаждения с электродвигателем 3 кВт, 1500 об/мин;**
4. **Зубчатая муфта MTGX с трубчатым промежуточным валом.**

moventas	NIMITYS TITLE	DIMENSION DRAWING	
	VALMISTE PRODUCT	D3PSF90 shaft pos. 23	D007958 0

PVM DATE | MUUTTAJA NAME | HYVÄKSYTTY APPROVEDBY | MUUTOS REVISION | MERKKI KEY

 E007789 VERTEX A3 VERT.PIIR. REF.DWG