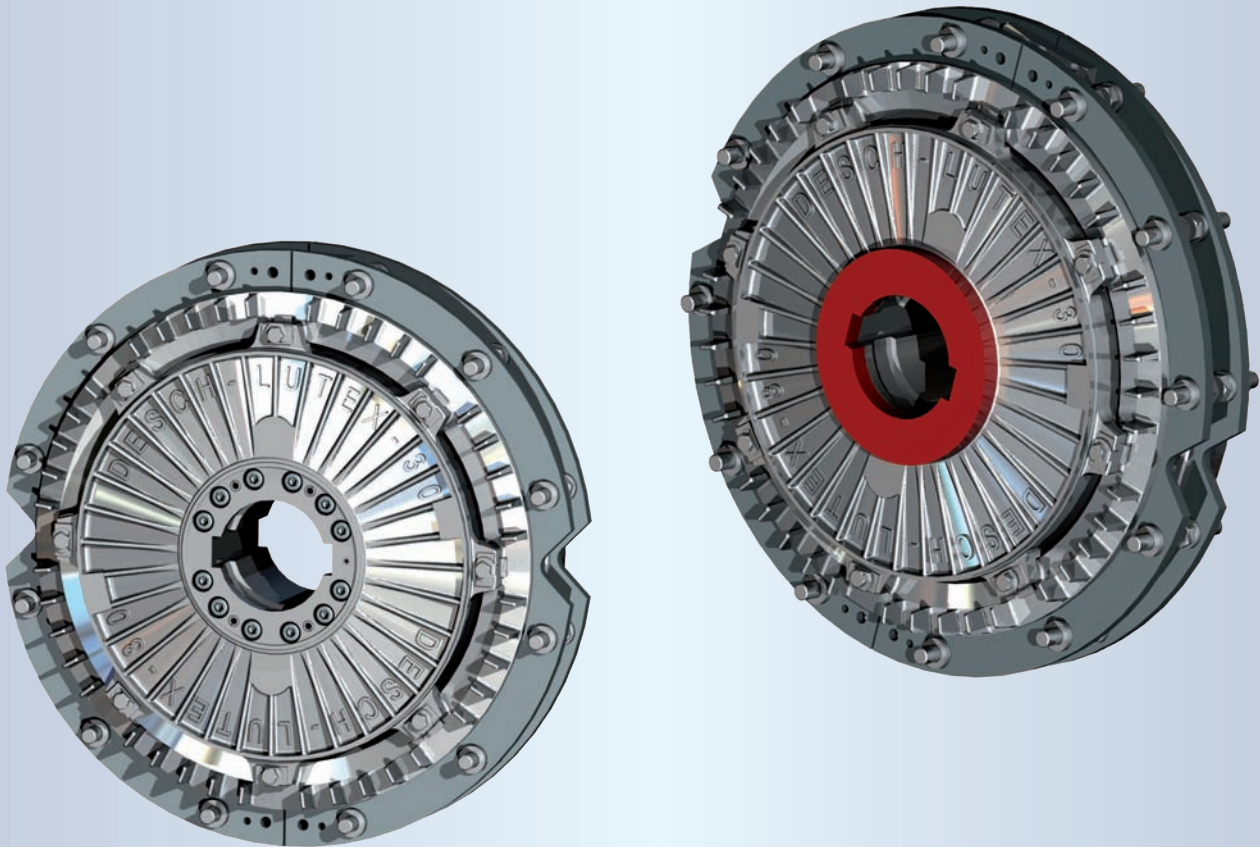


WHEN FULL POWER IS NEEDED



DRIVE TECHNOLOGY

**DESCH**  
**Lutex® Clutch/Brake Combination**  
**Type LKB and LKB<sup>plus</sup>**  
pneumatically actuated



Technology KB 10 - GB

# Lutex® Clutch/Brake Combination

## LKB and LKB<sup>plus</sup>



### Function

The brake disc is mounted on the press/machine frame whilst the clutch disc is mounted on the flywheel. The piston is mounted on the hub and is free to move axially between the hub and the cylinder. In the "non-air pressure" state spring tension keeps the brake disc in contact with the cylinder. The brake is on. As air is inflowing into the cylinder the spring tension is overcome and the brake begins to release, the increase in air pressure engages the clutch.

The friction discs are available with either 12-point or 2-point mounting (see schema on page 3). In the 2-point system the mounting points can be either long or short depending upon the machine frame requirements.

### Application Area

The pneumatically actuated Lutex® LKB is a dry single plate combined clutch/brake combination (it is referred to the following text as the C-B-C).

Originally developed for use on presses and shearing machines it is particularly suitable for applications where medium and large inertias are to be accelerated or decelerated. The heat resistant properties of the friction surfaces enables the Lutex® C-B-C to achieve the high operating cycle required by presses.

Its compact construction allows the C-B-C to be mounted in a very small space between the machine frame and the flywheel. The C-B-C conforms to the safety requirements of the EN 692/2006.

### Features and Benefits of the Lutex® Clutch/Brake Combination (C-B-C):

- LKB und LKB<sup>plus</sup> decken die Anschlussmaße der gängigsten Baureihen ab
- Low-maintenance, safe, reliable
- Low inertia
- Large shaft bore
- High heat resistant
- Low air consumption
- High frequency of operation
- Accurate repeatability
- High volume friction surfaces
- **Highly stressable friction linings with maximum durability**
- 2-point mounting system with plastic collar for noise and vibration absorption
- Quick and easy replacement of the friction discs
- Several methods of mounting the friction discs
- Wide range of brake and clutch torque
- Ability to adjust worn friction discs (on sizes 30 to 75)
- Certificate of conformity to safety regulations
- **Advice of abrasion** (as an option)
- Application of clamping elements (as an option)

### Ergänzungs-Baureihe

#### LKB<sup>plus</sup>

Die LKB<sup>plus</sup> basiert auf der bewährten LKB-Baureihe. Die Anschlussmaße werden mittels Distanzring und Modifikation der Kupplungsbohrung so angepasst, dass die LKB<sup>plus</sup> gegen gängige Wettbewerbsbaureihen problemlos ausgetauscht werden kann.

The types LKB and LKB<sup>plus</sup> are exchangeable with the most standard C-B-C

# Types

## Type LKB

## Type LKB<sup>plus</sup>

Mounting of the friction disc					
Type	brake disc		clutch disc		
	12 - point	2 - point	12 - point	2 - point	
		short strap	long strap	short strap	long strap
LKB	•			•	
LKB <sup>plus</sup>	•			•	
LKBZ		•			•
LKBZ <sup>plus</sup>		•			•
LKBBZ		•		•	
LKBBZ <sup>plus</sup>		•		•	
LKBZU			•		•
LKBZU <sup>plus</sup>			•		•
LKBBZU			•	•	
LKBBZU <sup>plus</sup>			•	•	

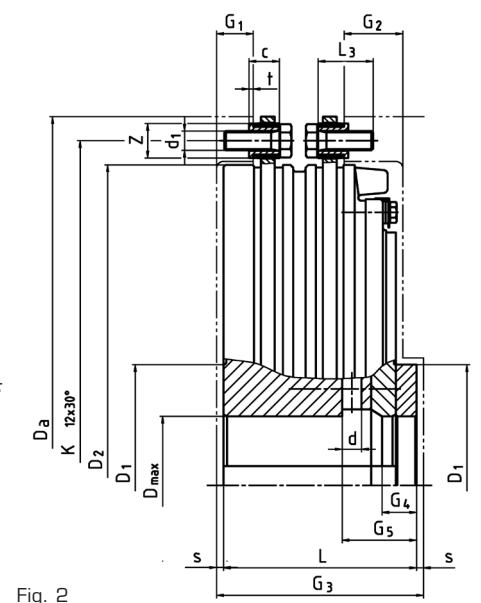
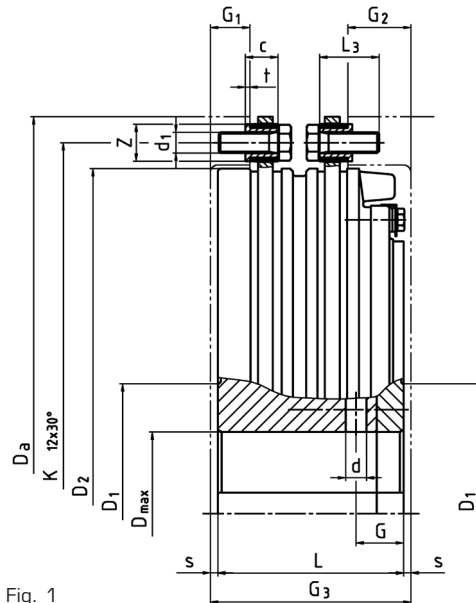


Fig. 1

Fig. 2

## Type LKBZ

## Type LKBBZ

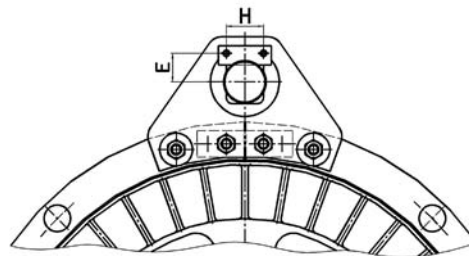
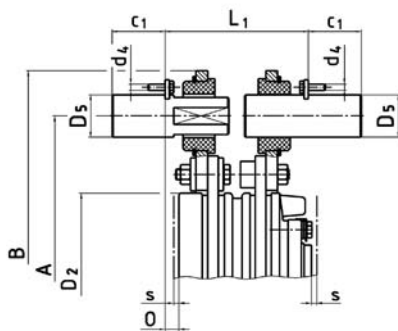


Fig. 3

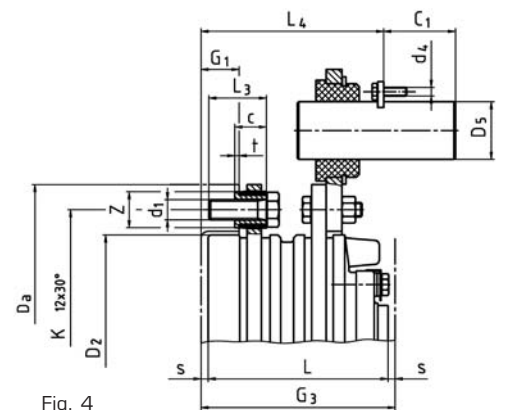


Fig. 4

## Type LKBZU

## Type LKBBZU

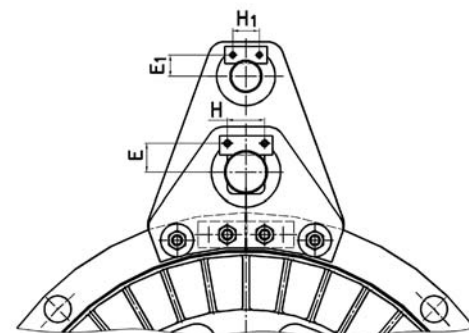
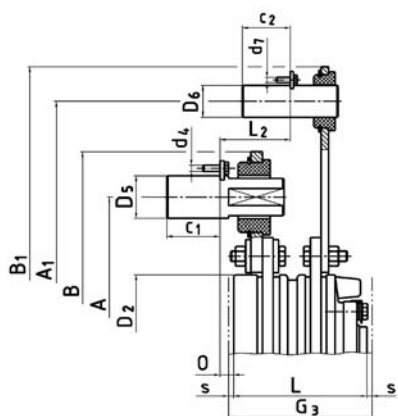


Fig. 5

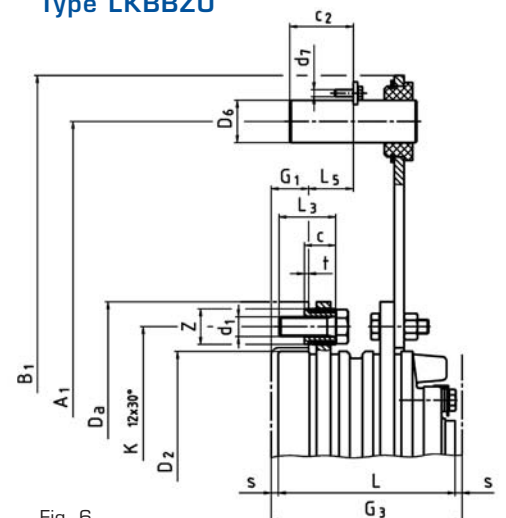


Fig. 6

## Air Supply

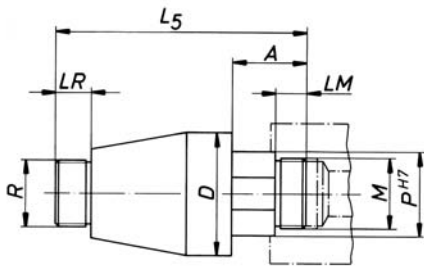


Fig. 6

Direct connection of the press safety valve or the electromagnetic valve with the rotating air supply is possible.

A rotary air supply system for higher speed is available as an option.

Rotor size R	G <sup>3</sup> / <sub>8</sub>	G <sup>1</sup> / <sub>2</sub>	G <sup>3</sup> / <sub>4</sub>	G1	G1 <sup>1</sup> / <sub>4</sub>	G1 <sup>1</sup> / <sub>2</sub>	G2
Part number	653	654	655	656	657	658	659
Max. speed [rpm]	2800	2500	1400	1200	800	700	600
A	26,5	35,5	37,5	37,5	42,0	42,0	51,0
LM	14	15	15	15	22	22	25
LR	12	12	16	18	20	22	25
D	38	55	65	65	88	88	110
M	M 16	M 35x1,5	M 35x1,5	M 35x1,5	M 50x1,5	M 50x1,5	M 65x1,5
pH7	20	40	40	40	60	60	70
L5	81,5	115,5	123,5	125,5	149,0	151,0	214,0
Suitable for Lutex® LKB-...	05-10	10-20	20-30	25-40	45-60	55-65	65-75

## Shaft Sealing

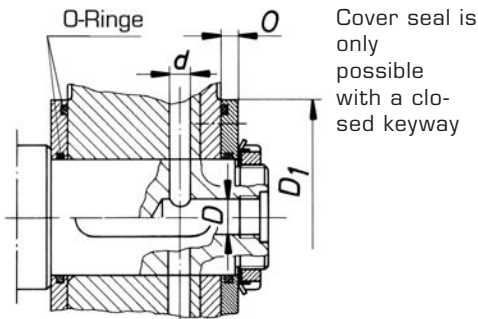


Abb. 7

Cover seal is only possible with a closed keyway

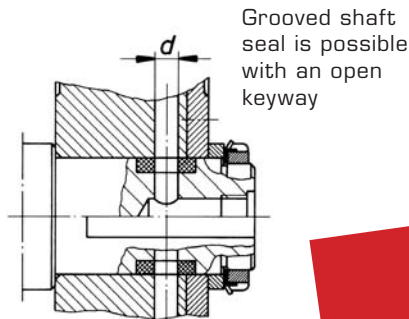


Abb. 8

Grooved shaft seal is possible with an open keyway

The diameter "D" of the shaft bore should be approximately 1.4 times that of the air supply bore, diameter "d".

**ACHTUNG!**  
Stopfenabdichtung bei der Bauform LKB<sup>plus</sup> vor Einbau konstruktiv prüfen.

## Examples of Installation

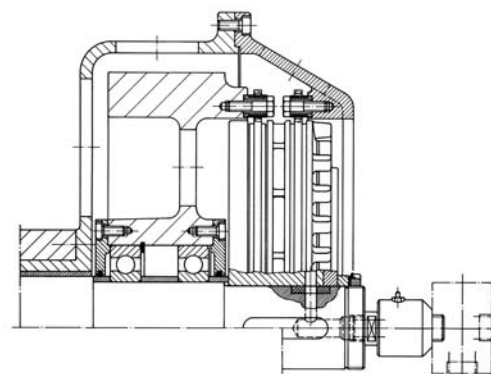


Fig. 9 LKB

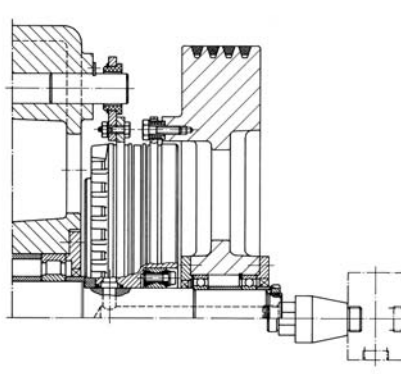


Fig. 10 LKBBZ

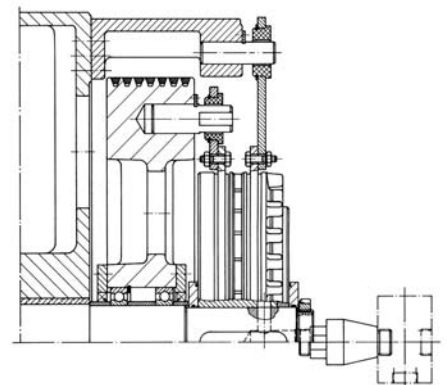
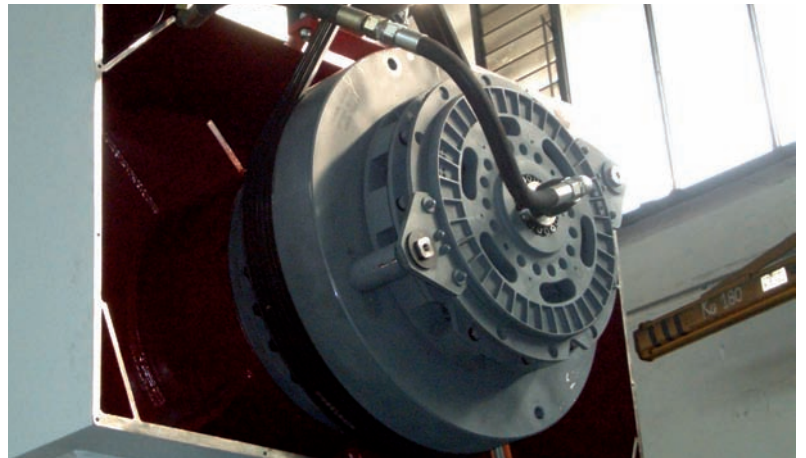
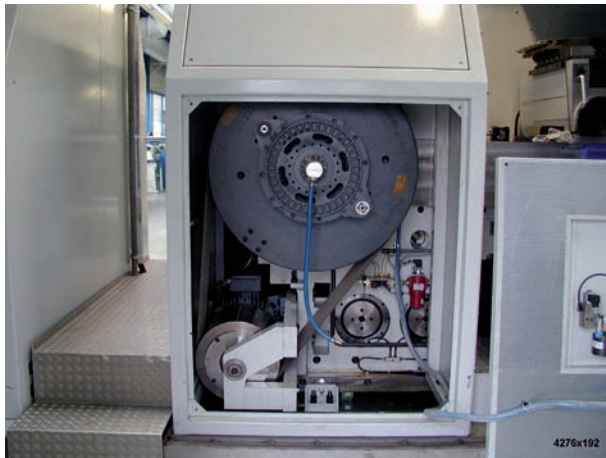


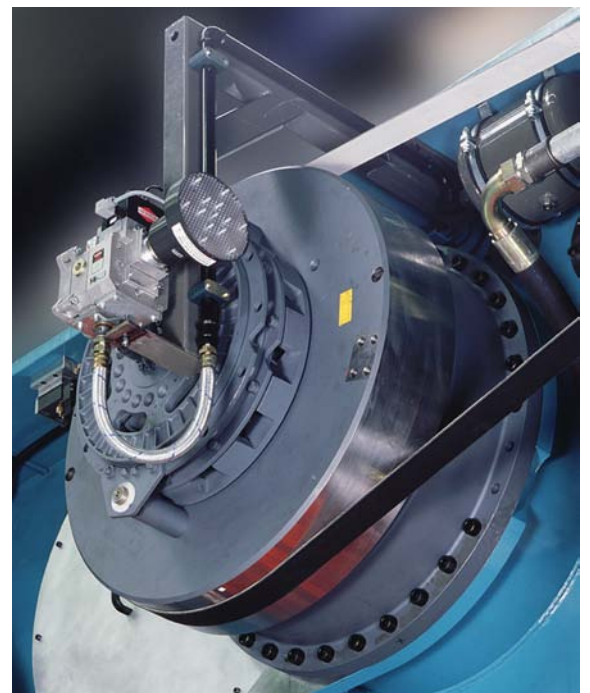
Fig. 11 LKBZU

## DESCH Lutex®-Clutch in use



## Other Lutex® Products for Press Drives

- Lutex® LS** pneumatically actuated clutch/brake combination with high torque at small dimensions
- Lutex® HKB, HK, HB** hydraulically actuated clutch/brake combination
- DESCH Complete Press Drive KA** complete press drives (either hydraulically or pneumatically operated) together with planetary gearbox and flywheel
- DESCH Complete Press Drive KAS** complete press drives with hydraulically actuated clutch and brake, with planetary gearbox, flywheel and additionally with an engageable gear step
- DESCH Complete Press Drive KAE** **Komplettantrieb bestehend aus Planetengetriebe, pneumatisch/hydraulisch schaltbarer Kupplungs-Brems-Kombination und einem Schwungrad mit integriertem Torque-Motor**
- DESCH Servox** Planetengetriebe, hydraulisch belüftete Bremse und Adapter zum Anschluss handelsüblicher Servo-Motoren
- Further Components** flywheels, pulleys and accessories



**Kundenspezifischen Lösungen auf Anfrage!**

## Technical data

Size		05	10	15	20	25	25 <sup>plus</sup>	30	30 <sup>plus</sup>	35
Clutch <sup>3)</sup>	T <sub>0</sub> <sup>1)</sup> Nm	250	400	760	1500	3000	3000	5700	5700	7200
Brake <sup>3)</sup>	T <sub>s</sub> <sup>2)</sup> Nm	140	225	430	850	1700	1700	3200	3200	4100
Weight kg	LKB / LKB <sup>plus</sup>	5,3	7,0	12,6	23,6	45,1	47,8	87,2	91,2	109,8
	LKBZ / LKBZ <sup>plus</sup>	5,7	7,6	14,2	25,6	49,0	51,6	95,8	99,8	118,9
	LKBZU / LKBZU <sup>plus</sup>	5,8	7,7	14,4	25,7	49,7	52,4	96,3	100,3	119,4
	LKBBZ / LKBBZ <sup>plus</sup>	5,4	7,3	13,4	24,6	47,1	49,7	91,5	95,5	114,4
	LKBBZU / LKBBZU <sup>plus</sup>	5,6	7,4	13,6	24,4	47,8	50,5	92,0	96,0	114,9
J inside	kgm <sup>2</sup> all types	0,014	0,024	0,064	0,202	0,59	0,59	1,61	1,62	2,31
J outside	LKB/LKBBZ/ LKBBZU	0,004	0,006	0,017	0,047	0,16	0,16	0,58	0,58	0,81
	LKB <sup>plus</sup> /LKBBZ <sup>plus</sup> /LKBBZU <sup>plus</sup>	0,007	0,010	0,035	0,074	0,25	0,25	0,90	0,90	1,18
	LKBZ/LKBZU/LKBKZ									
	LKBZ <sup>plus</sup> /LKBZU <sup>plus</sup> /LKBKZ <sup>plus</sup>									
Cylinder volume dm <sup>3</sup>	new <sup>4)</sup>	0,04	0,05	0,08	0,19	0,3	0,3	0,5	0,5	0,6
	worn <sup>4)</sup>	0,06	0,09	0,15	0,31	0,6	0,6	0,9	0,9	1,2
Max. speed	rpm <sup>5)</sup>	2800	2800	2500	1800	1400	1400	1200	1200	1100
Linear dimensions in mm	A ISO JS 10 <sup>6)</sup>	230	250	315	390	495	495	610	610	645
	A <sub>1</sub> ISO JS 10 <sup>6)</sup>	305	325	410	490	635	635	790	790	830
	B	262	282	360	435	560	560	695	695	730
	B <sub>1</sub>	337	357	442	522	680	680	855	855	895
	c	9	11	12	15	19	19	22	22	27
	c <sub>1</sub>	25	20	35	35	45	45	50	50	50
	c <sub>2</sub>	25	20	20	20	35	35	45	45	45
	E	11	11	16	16	20	20	27	27	27
	E <sub>1</sub>	11	11	11	11	16	16	20	20	20
	H	20	20	25	25	25	25	35	35	35
	H <sub>1</sub>	20	20	20	20	25	25	25	25	25
	G	17	18	20	22	29	-	32	-	37,5
	G <sub>1</sub>	11	12	15	18	22,5	21	26,5	27	29,5
	G <sub>2</sub>	17	21	23	30,5	36,5	52	42,5	60	48
	G <sub>3</sub>	56	64	73	90	110	122	135	150	150
	G <sub>4</sub>	-	-	-	-	-	20,5	-	25	-
	G <sub>5</sub>	-	-	-	-	-	48	-	54	-
	L	50	58	65	82	100	112	125	140	140
	L <sub>1</sub>	55	62	78	95	112	105	135	128	148
	L <sub>2</sub>	26,5	30	38	50	52	52	66	66,5	75
L <sub>3</sub>	16	20	20	25	35	35	40	40	45	
L <sub>4</sub>	55,5	58	72	86	104	93	127	122,5	140	
L <sub>5</sub>	13	14	17	23	21,5	24	31,5	34	37,5	
s	3	3	4	4	5	5	5	5	5	
t	2	2	2	3	3	3	3	3	3	
0	7	7	10	13	13	13	13	13	13	
Diameter in mm	D <sub>s</sub>	196	220	275	347	435	435	535	535	570
	D <sub>1</sub>	80	85	105	125	155	155	175	175	185
	D <sub>2</sub>	166	188	235	304	380	380	465	465	497
	D <sub>5</sub> ISO k6 <sup>6)</sup>	14	14	22	22	30	30	40	40	40
	D <sub>6</sub> ISO k6 <sup>6)</sup>	14	14	14	14	22	22	30	30	30
	d	7	8	8,5	12	14	14	14	14	18
	d <sub>1</sub> <sup>7)</sup>	M5	M5	M6	M8	M10	M10	M14	M14	M14
	d <sub>4</sub>	M4 x 12	M4 x 12	M5 x 16	M5 x 16	M5 x 16	M5 x 16	M6 x 20	M6 x 20	M6 x 20
	d <sub>7</sub>	M4 x 12	M4 x 12	M4 x 12	M4 x 12	M5 x 16	M5 x 16	M5 x 16	M5 x 16	M5 x 16
	K JS 10 <sup>6)</sup>	182	205	255	325	408	408	500	500	536
	Z - 0,1	10	10	12	15	18	18	25	25	25
	D <sub>max</sub> ( ISO H7) <sup>8)</sup>	35	40	52	70	90	80	110	100	115
	keyway DIN 6885									
D <sub>min</sub> ( ISO H7)	20	25	35	40	45	45	45	45	60	

In the range of max. speed (ca. 0,7 x n<sub>max</sub>) we recommend dynamical balancing.

1) T<sub>0</sub> = static torque at p = 6 bar

2) T<sub>s</sub> = dynamic torque

3) Iteration of clutch/brake torque relation possible. Dates on request

4) Type with reduced cylinder volume on request

5) Not permitted for operation with single strokes

6) Tolerances for connecting parts

7) Self-locking screws

8) Clamping elements on request



## DRIVE TECHNOLOGY

	40	40 <sup>plus</sup>	45	45 <sup>plus</sup>	50	50 <sup>plus</sup>	55	55 <sup>plus</sup>	60	65	70	75
	9000	9000	13000	13000	17500	17500	23500	23500	37000	56000	80000	115000
	5100	5100	7400	7400	10000	10000	13400	13400	21000	32000	46000	65000
	133,9	142,4	179,8	191,8	271,3	284,9	367,9	382,8	603,2	764,9	1048,8	1577,5
	143,8	152,2	194,4	206,3	294,7	308,3	395,4	410,4	649,8	811,5	1104,8	1662,7
	144,5	152,9	196,7	208,6	298,4	312,0	399,1	414,1	657,7	819,3	1115,4	1678,7
	138,8	147,3	187,1	199,0	283,0	296,6	381,7	396,6	626,5	788,2	1076,8	1620,1
	139,6	148,0	189,4	201,3	286,7	300,3	385,3	400,3	634,4	796,0	1087,4	1636,1
	3,33	3,35	5,41	5,43	10,42	10,43	17,09	17,23	40,48	57,93	98,79	191,93
	1,14	1,14	1,88	1,88	3,78	3,78	6,84	6,84	13,10	14,07	25,72	43,69
	1,62	1,62	2,56	2,56	5,51	5,51	9,07	9,07	19,04	19,04	36,76	63,07
	0,8	0,8	1,2	1,2	1,7	1,7	2	2	2,9	4,1	5,1	8,8
	1,5	1,5	2,3	2,3	3,4	3,4	4	4	6,3	10	12,6	18,4
	1000	1000	900	900	800	800	700	700	600	600	550	500
	695	695	770	770	880	880	970	970	1140	1140	1300	1465
	885	885	990	990	1135	1135	1235	1235	1450	1450	1645	1855
	780	780	870	870	1000	1000	1090	1090	1280	1280	1460	1625
	950	950	1075	1075	1235	1235	1335	1335	1570	1570	1790	1995
	27	27	28	28	35	35	36	36	40	40	50	50
	50	50	60	60	70	70	70	70	90	90	90	110
	45	45	50	50	60	60	60	60	70	70	70	90
	27	27	29,5	29,5	38,5	38,5	38,5	38,5	44,5	44,5	44,5	50,5
	20	20	27	27	29,5	29,5	29,5	29,5	38,5	38,5	38,5	45,5
	35	35	35	35	45	45	45	45	45	45	45	45
	25	25	35	35	35	35	35	35	45	45	45	45
	38	-	42,5	-	48	-	55,0	-	65	70	75	90
	29,5	30	31,0	32	35,5	34	38,5	39	45	49	54	61
	49,5	68	56,0	84	64,5	90	72	100	85	141	144	180
	155	170	170,0	195	195	215	215	240	260	320	350	410
	-	28,5	-	34	-	36,5	-	43,5	-	-	-	-
	-	62	-	76,5	-	78	-	90	-	-	-	-
	145	160	160	185	185	205	205	230	250	310	340	400
	155	148	165	158	186	185	202	194	248	257	288	325
	82	80,5	83	81	98	98,5	110	107,5	145	148	172	170
	45	45	50	50	60	60	70	70	70	70	90	90
	145	140	155	150,5	176	172	192	186,5	233	242	273	308
	47	42,5	42	41,5	52,5	51,5	61,5	61	87,5	84	103	92
	5	5	5	5	5	5	5	5	5	5	5	5
	3	3	5	5	5	5	5	5	5	5	5	5
	13	13	15	15	15	15	15	15	20	20	20	22
	620	620	680	680	775	775	865	865	1000	1000	1150	1290
	190	190	210	210	245	245	280	280	320	320	365	420
	543	543	593	593	675	675	755	755	885	885	1005	1140
	40	40	45	45	55	55	55	55	65	65	65	80
	30	30	40	40	45	45	45	45	55	55	55	65
	18	18	18	18	20	20	20	20	24	28	30	32
	M14	M14	M16	M16	M20	M20	M24	M24	M24	M24	M30	M32
	M6 x 20	M6 x 20	M6 x 20	M6 x 20	M8 x 25	M8 x 25	M8 x 25	M8 x 25	M8 x 25	M8 x 25	M8 x 25	M8 x 25
	M5 x 16	M5 x 16	M6 x 20	M6 x 20	M6 x 20	M6 x 20	M6 x 20	M6 x 20	M8 x 25	M8 x 25	M8 x 25	M8 x 25
	584	584	640	640	725	725	810	810	945	945	1080	1220
	25	25	30	30	35	35	40	40	40	40	50	50
	125	105	140	120	160	145	180	180	210	210	240	270
	60	60	70	70	70	70	80	80	90	90	130	165



DRIVE TECHNOLOGY

## Product Range

### Friction Clutches

Planox® friction clutches  
Conax® friction clutches  
Centrex® centrifugal clutches

### Flexible Couplings

Hadeflex® couplings  
Habix® couplings  
Orpex® couplings  
DESCH Flex couplings  
DESCH HRC couplings

### Rigid Couplings

### Press Drives

Lutex® clutch/brake combinations  
Complete press drives

### Gears

Planetary gears  
Special gears

### Complete Transmission Solutions

Flywheel back gears for no-delay units  
Drive stations for stretcher  
Levelling units  
Back gears with engageable/  
disengageable clutches

### Belt Drives

V-belt pulley drives  
Timing belt drives  
Flat belt drives  
V-belt pulley drives  
with taper bushes  
V-belt pulley and flywheels  
to customers' specification  
V-belts and timings belts  
Bolt-on-hubs  
Weld-on-hubs

### Bearings

Grease lubricated plain bearings

DESCH is a member



### Telephone numbers of our head office in Arnsberg

		Telephone	Fax
<b>DES</b> DESCH Engineering Service	+49 29 32	300-200	300-154
<b>DPC</b> DESCH Power Transmission Center	+49 29 32	300-103	300-830
<b>DCT</b> DESCH Clutch Technology	+49 29 32	300-170	300-50
<b>DGP</b> DESCH Press Drives	+49 29 32	300-153	300-811
<b>DGP</b> DESCH Gearboxes	+49 29 32	300-268	300-50

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