

HYDRAULIC DISC BRAKES LB, LBS, LBV- Wet



APPLICATION

- » Heavy Duty machinery
- » Wheel drives
- » Material handling
- » Mining
- » Agriculture
- » Conveyors
- » Door openers and swing drives etc.



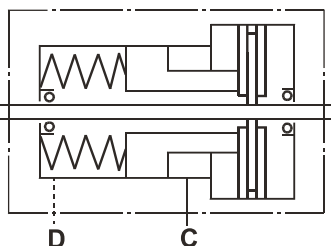
GENERAL

Fluid type	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C	-30 ÷ 90
Viscosity range, mm ² /s	20 ÷ 75
Filtration	ISO code 20/16 (nominal filtration of 25 micron)
Maintenance	Changed after the first 50-100 h, then after every 500-1500 h.

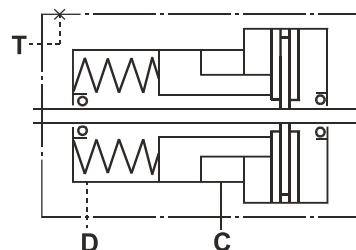
CONTENTS

Hydraulic Disc Brake for MP, MR and MS Motors type LB/288	4÷5
Hydraulic Disc Brake for MSS and MSV type LBS(V)/289	6
Hydraulic Disc Brake for MSS and MSV type LBS(V)/290	7
Specification data for LBS(LBV)/289, 290	8
Load curve for LBS(LBV)/289, 290	8
Output Shafts for LBS(LBV)/289, 290	8
Internal Spline data	9
Order code for LB/288,LBS(LBV)/289, 290	9
Hydraulic Disc Brake for MTS and MTV type LBS(LBV)/314	10
Hydraulic Disc Brake for MTS and MTV type LBS(LBV)/315	11
Specification data for LBS(LBV)/314, 315	12
Load curve for LBS(LBV)/314, 315	12
Output Shafts for LBS(LBV)/314, 315	13
Order code for LBS(LBV)/314, 315	13

LB, LBS

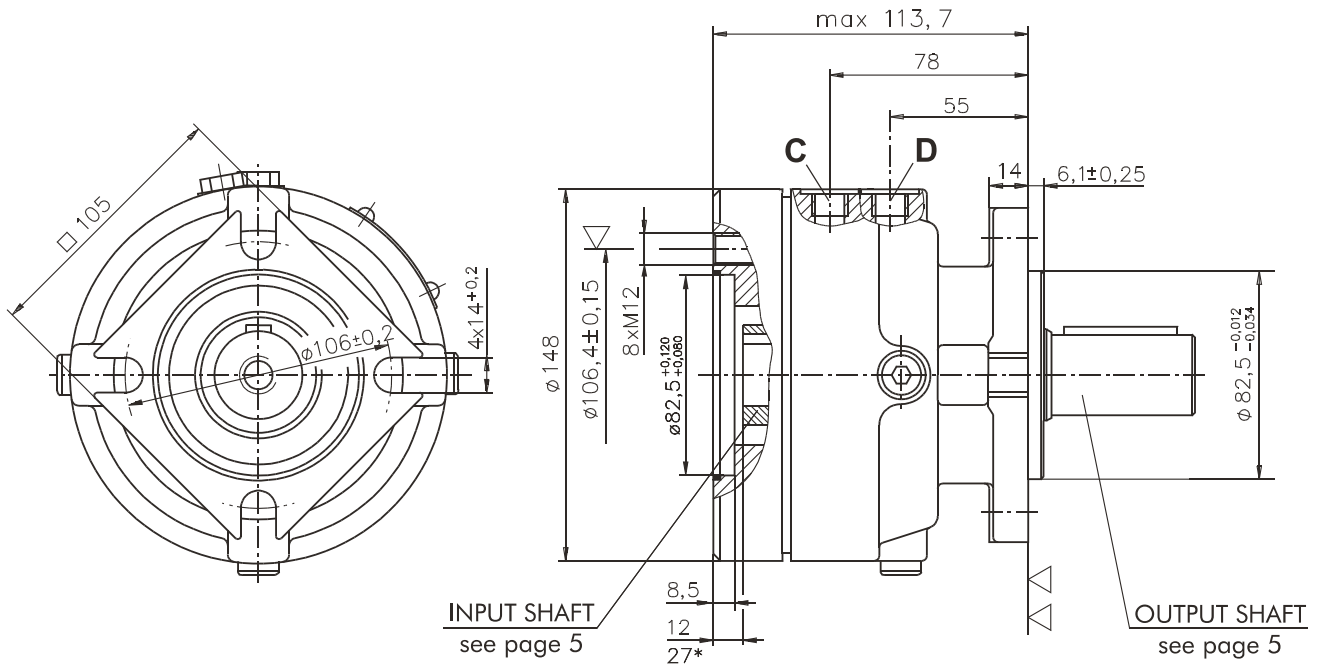


LBV



**HYDRAULIC DISC BRAKE FOR FLANGE ATTACHMENT
TO MP, MR AND MS HYDRAULIC MOTORS**

TYPE LB/288



C : Brake release Port - G $\frac{1}{4}$, 9 mm depth

D : Drainage tap - G $\frac{1}{4}$, 9 mm depth

▽- Place for attachment
(tightening torque for bolts M12x30 - 8.8 DIN 931 - 7 daNm)

▽▽- Place for attachment

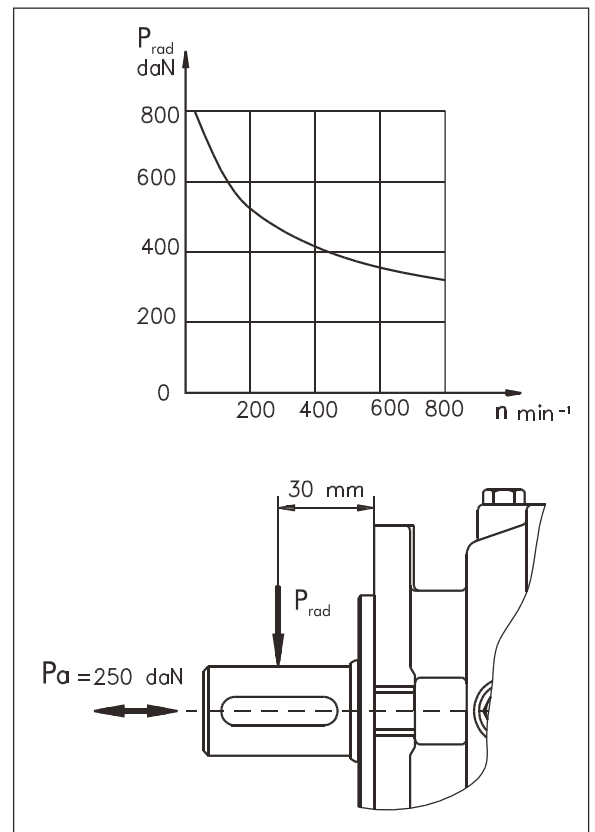
* - For Input Shaft Hole Versions **SH** and **SB**.

SPECIFICATION DATA

Description LB/288...	7	14	21	32	43	63
*Static Torque [daNm]	6-8	13-15	20-22	31-34	41-45	61-64
Opening Pressure [bar]	min	4-8	9-16	17-23		
	max	300				
Min. oil quantity for brake releasing [cm 3]	7- 8					
Oil volume [cm 3]	50 - 120					
Max. Pressure in drain space [bar]	0,5					
Weight [kg]	9					

*Static torque is obtained at working pressure - 0 bar.

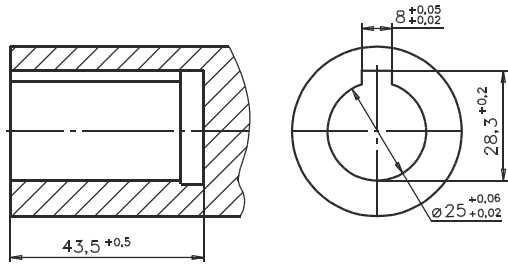
LOAD CURVE



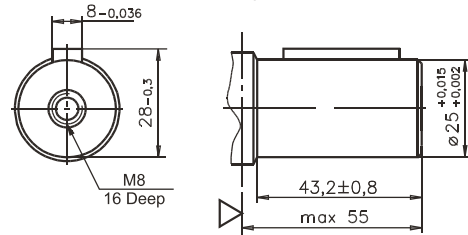
INPUT SHAFT HOLES

OUTPUT SHAFT EXTENSIONS

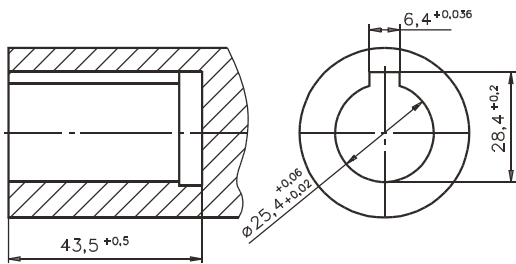
C



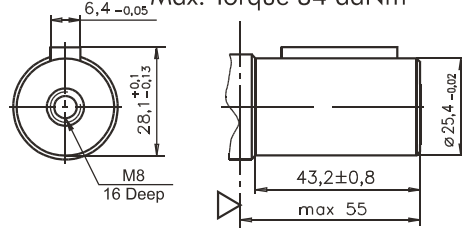
C - $\varnothing 25$ straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm



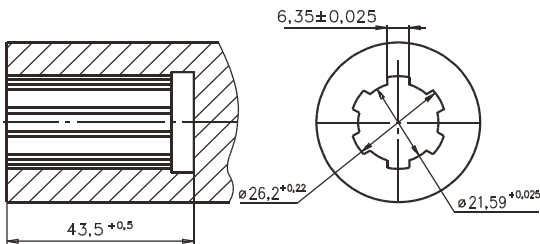
CO



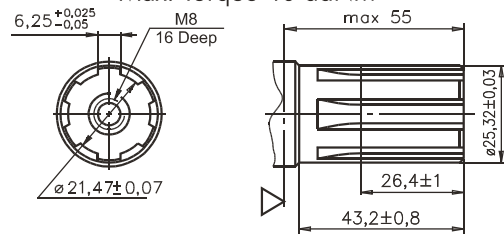
CO - $\varnothing 1$ " straight Parallel key $\frac{1}{4}$ "x $\frac{1}{4}$ "x $1\frac{1}{4}$ " BS46
Max. Torque 34 daNm



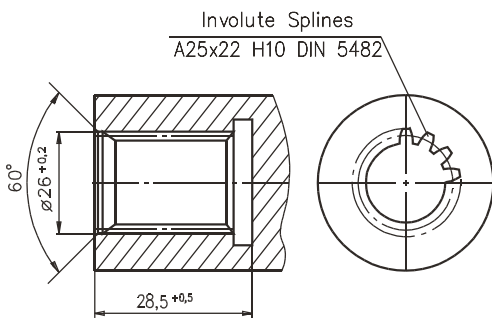
SH



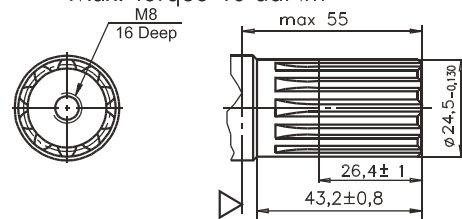
SH - splined BS 2059 (SAE 6B)
Max. Torque 40 daNm



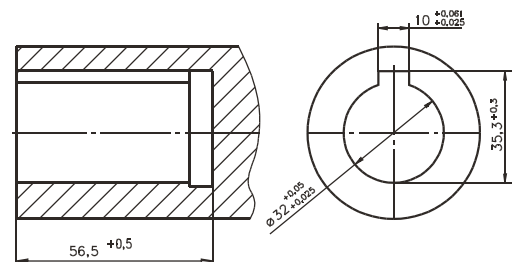
SB



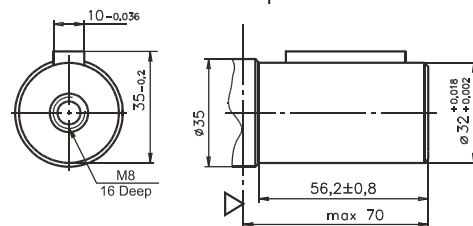
SA - splined B25x22 h9 DIN 5482
Max. Torque 40 daNm



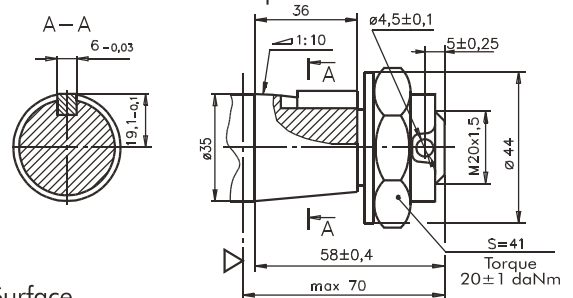
CB



CB - $\varnothing 32$ straight, Parallel key A10x8x45 DIN6885
Max. Torque 77 daNm



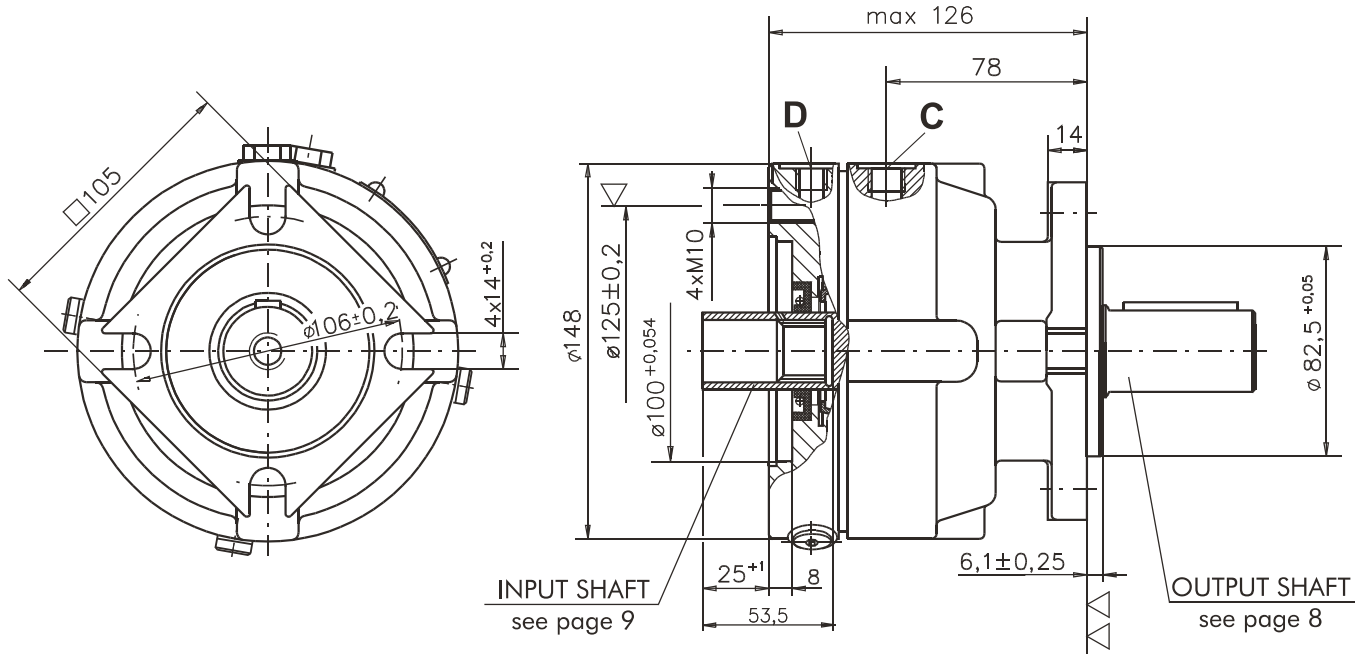
KB - tapered 1:10, Parallel key B6x6x20 DIN6885
Max. Torque 95 daNm



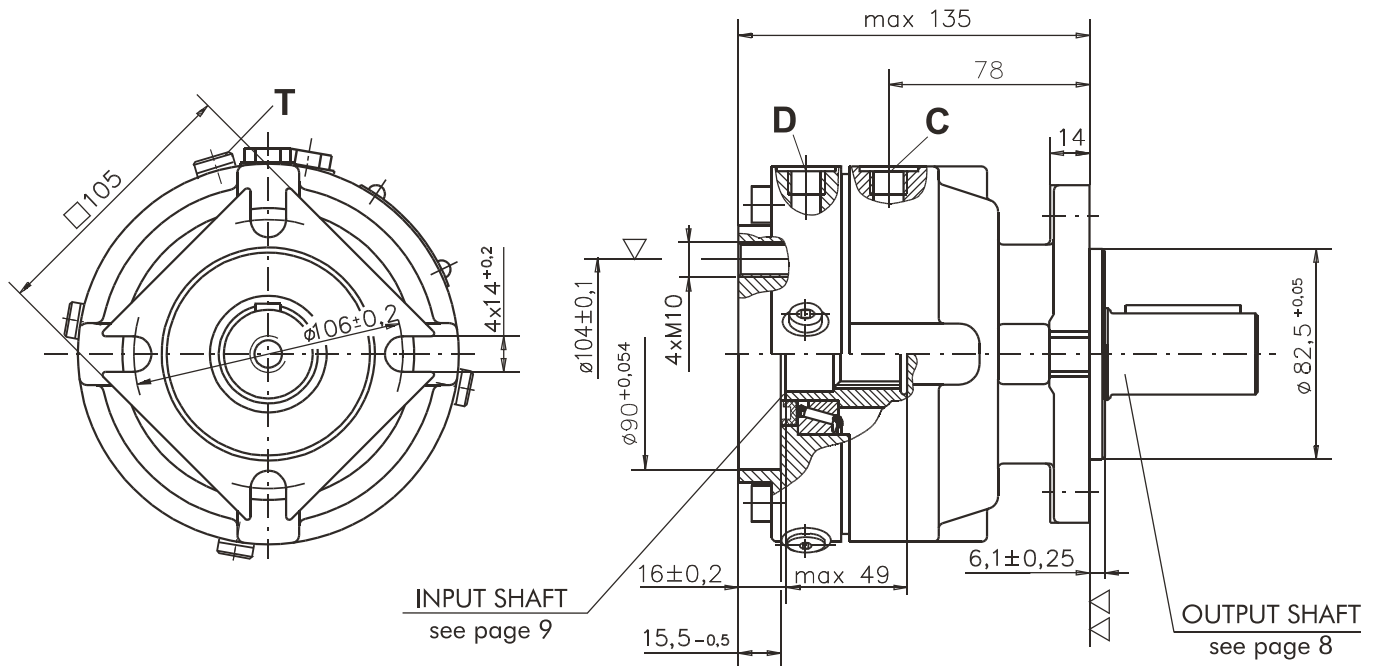
▽ - Disc Brake Mounting Surface

**HYDRAULIC DISC BRAKE FOR FLANGE ATTACHMENT
TO MSS AND MSV HYDRAULIC MOTORS**

TYPE LBS/289



TYPE LBV/289

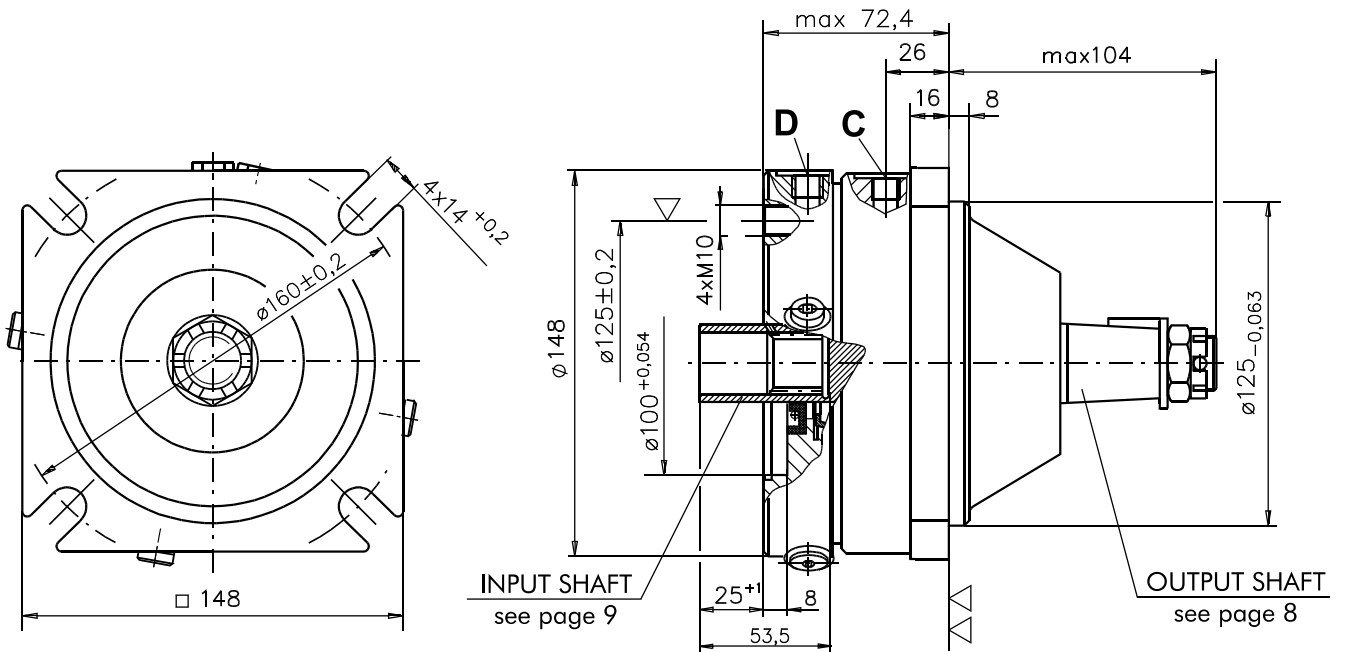


▽ - Place for attachment
(tightening torque for bolts M10x35 - 8.8 DIN 912 - 5 daNm)
▽▽ - Place for attachment

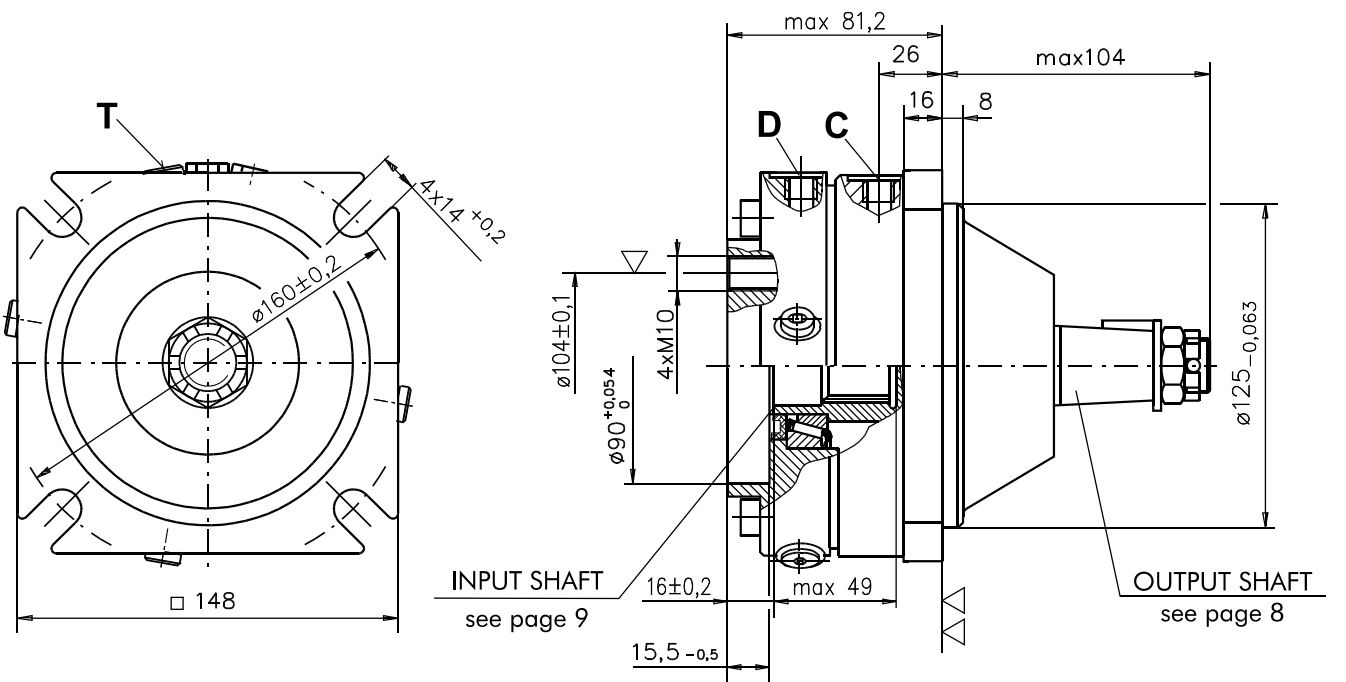
C : Brake release Port - G¹/₄, 9 mm depth
D, T : Drainage tap - G¹/₄, 9 mm depth

**HYDRAULIC DISC BRAKE FOR FLANGE ATTACHMENT
TO MSS AND MSV HYDRAULIC MOTORS**

TYPE LBS/290



TYPE LBV/290

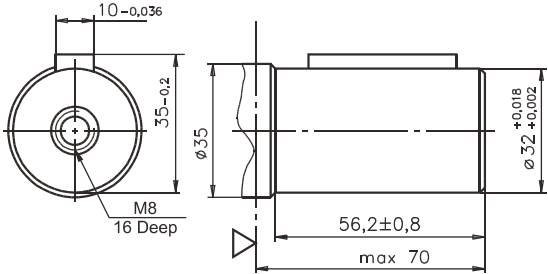


▽ - Place for attachment
(tightening torque for bolts M10x35 - 8.8 DIN 912 - 5 daNm)
▽▽ - Place for attachment

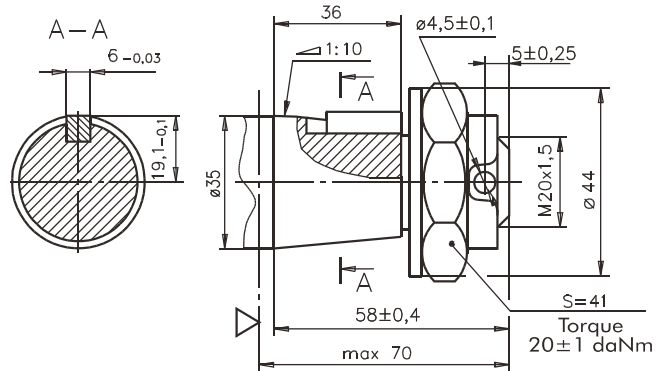
C : Brake release Port - G¹/₄, 9 mm depth
D, T : Drainage tap - G¹/₄, 9 mm depth

OUTPUT SHAFT EXTENSIONS

CB - $\varnothing 32$ straight, Parallel key A10x8x45 DIN6885
Max. Torque 77 daNm



KB - tapered 1:10, Parallel key B6x6x20 DIN6885
Max. Torque 95 daNm



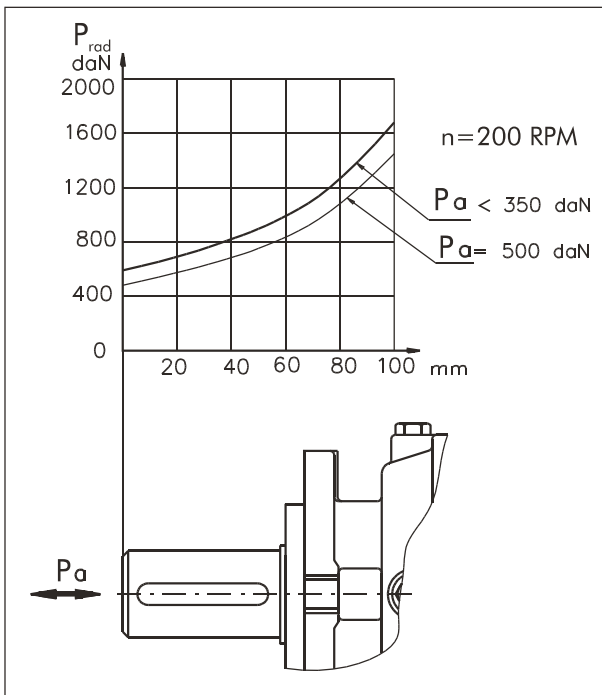
SPECIFICATION DATA

Description	LBS/289(290) LBV/289(290)	21	32	43	63
*Static Torque	[daNm]	20-22	31-34	41-45	61-64
Opening Pressure	min	17-23			
	max	300			
Min. oil quantity for brake releasing	[cm ³]	7- 8			
Oil volume	[cm ³]	50 - 120			
Max. Pressure in drain space	[bar]	5			
Weight .../289(290)	[kg]	10(11)			

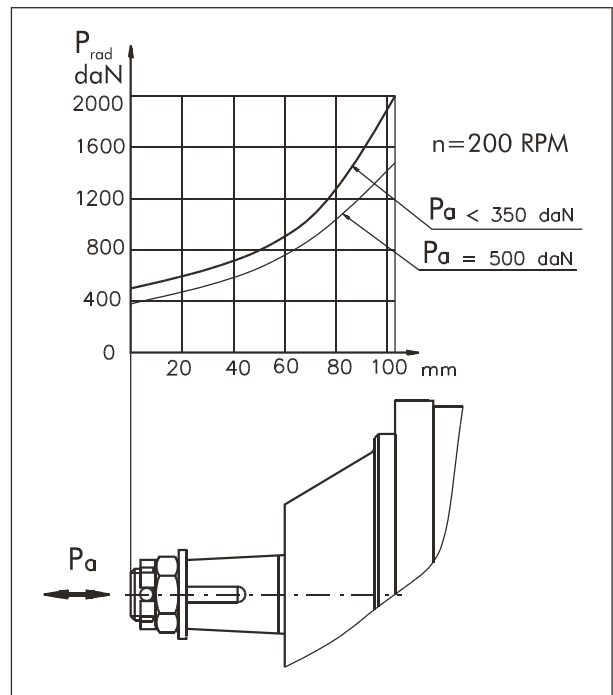
*Static torque is obtained at working pressure - 0 bar.

LOAD CURVE

LBS(V)/289



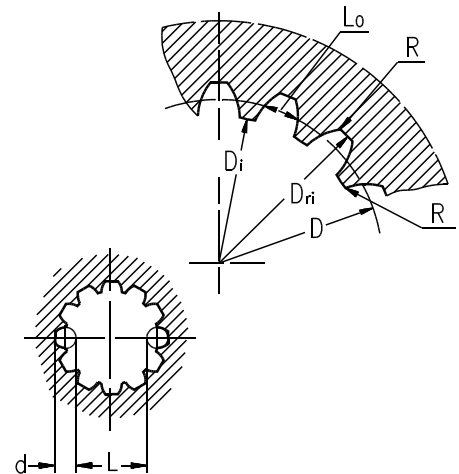
LBS(V)/290



INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

Standard ANSI B92.1-1976, class 5
[m=2,1166]

Fillet Root Side Fit		LBS(V)/289 LBS(V)/290	LBS(V)/314 LBS(V)/315
Number of Teeth	z	12	16
Diametral Pitch	DP	12/24	12/24
Pressure Angle		30°	30°
Pitch Dia.	D [mm]	25,4	33,8656
Major Dia.	D _{ri} [mm]	28,0 _{-0,1}	38,4 ^{+0,4}
Minor Dia.	D _i [mm]	23,0 ^{+0,033}	32,15 ^{+0,06}
Space Width [Circular]	L _o [mm]	4,308±0,020	4,516±0,037
Fillet Radius	R [mm]	0,2	0,5
Max. Measurement between Pin	L [mm]	17,62 ^{+0,15}	26,9 ^{+0,10}
Pin Dia.	d [mm]	4,835±0,001	4,835±0,001
Corrected	x.m [mm]	+0,8	+1,0



ORDER CODE - LB/288

1	2	3	4	5
LB/288	-			

Pos.1 - **Input Shaft Hole**

C, CO, SH, CB, SB

CB - ø32 straight, Parallel key A10x8x45 DIN 6885

KB - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

Pos.2 - **Static Torque code** (See Specification data)

7, 14, 21, 32, 43, 63

Pos.4 - **Option (Paint)****

omit - no Paint

P - Painted

PC - Corrosion Protected Paint

Pos.3 - **Output Shaft Extensions***

C - ø25 straight, Parallel key A8x7x32 DIN 6885

CO - ø1" straight, Parallel key 1/4"x1/4"x1 1/4" BS46

SH - ø25,32 splined BS 2059 (SAE 6B)

SA - ø24,5 splined B25x22 DIN 5482

Pos.5 - **Design Series**

omit - Factory specified

ORDER CODE - LBS, LBV

1	2	3	4	5	6
LB	/	-			

Pos.1 - **Type**

S - Disc Brake for short motor **S**- MSS

V - Disc Brake for very short motor **V**- MSV

Pos.4 - **Output Shaft Extensions***

CB - ø32 straight, Parallel key A10x8x45 DIN 6885

KB - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

Pos.2 - **Design code**

289 - for MSS and MSV Motors

290 - for MSS and MSV Motors (Wheel Mount)

Pos.5 - **Option (Paint)****

omit - no Paint

P - Painted

PC - Corrosion Protected Paint

Pos.3 - **Static Torque code** (See Specification data)

21, 32, 43, 63

Pos.6 - **Design Series**

omit - Factory specified

NOTES:

* The permissible output torque for shafts must be not exceeded! For Max. Torque values see data on page 5 and 8.

** The color is by customer's request.

The Disc Brakes are mangano-phosphatized as standard.

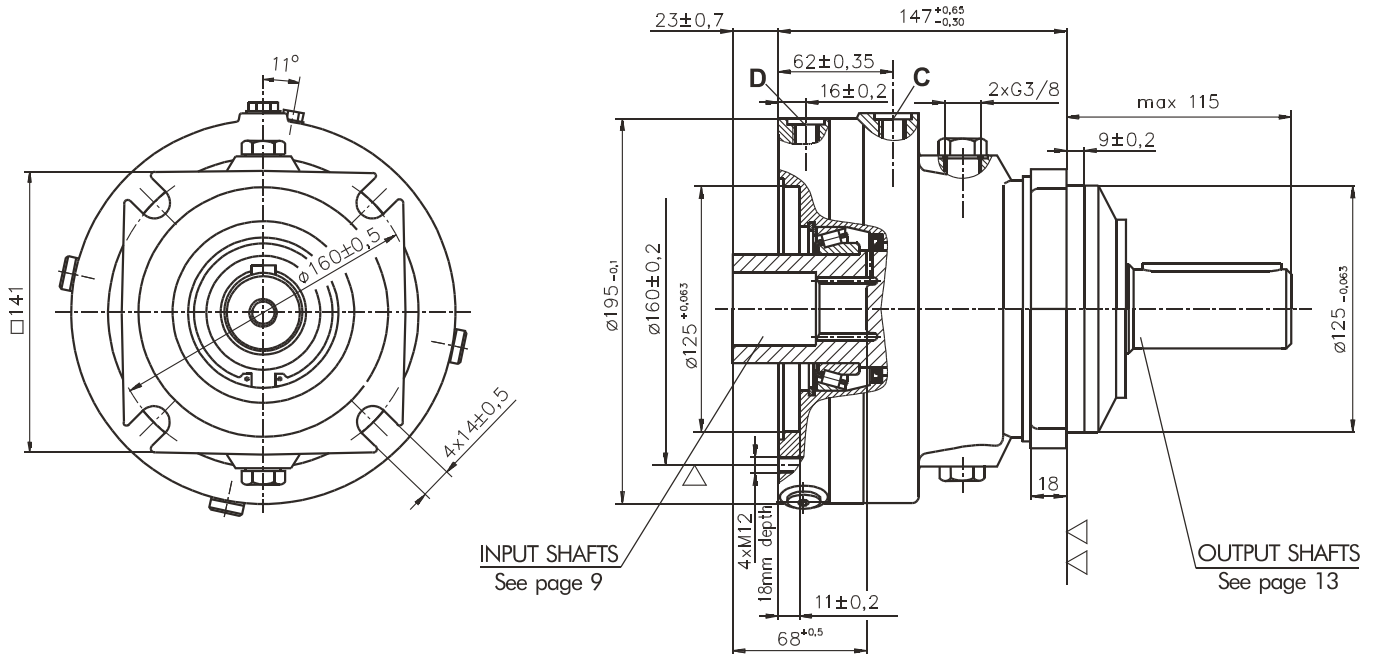
ATTENTION:

1. Hydraulic brake is delivered without oil (it is lubricated only).

2. In all brakes, friction discs and separators should be lubricated. Space is filled with 50 ÷ 120 cm³ mineral oil HLP (DIN 51524) or HM (ISO 6743/4). For LB/288 fill oil after hydraulic motor assembly.

**HYDRAULIC DISC BRAKES
FOR FLANGE ATTACHMENT TO MTS AND MTV HYDRAULIC MOTORS**

TYPE LBS/314



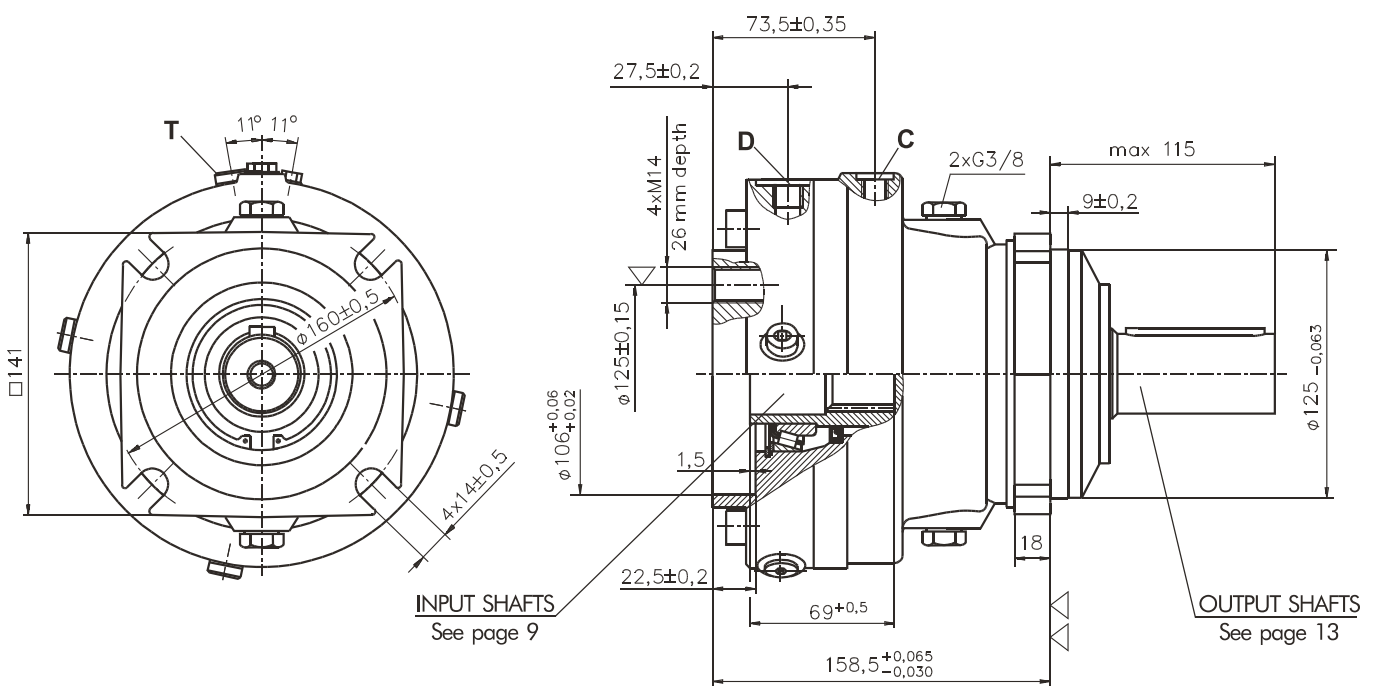
▽ - Place for attachment
(tightening torque for bolt M12 - 8.8 - 8,5 da Nm)

▽▽ - Place for attachment

C : Brake release Port - G $\frac{1}{4}$, 9 mm depth

D : Drainage tap - G $\frac{1}{4}$, 9 mm depth

TYPE LBV/314



▽ - Place for attachment
(tightening torque for bolt M14 - 8.8 - 14 da Nm)

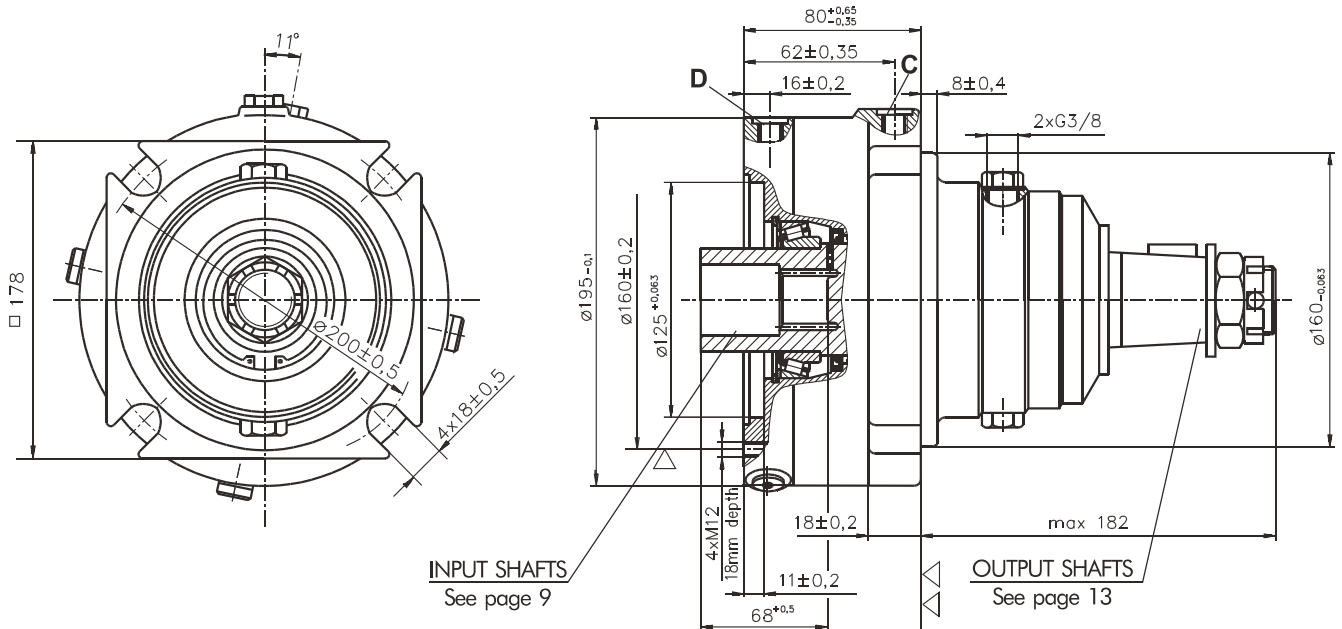
▽▽ - Place for attachment

C : Brake release Port - G $\frac{1}{4}$, 9 mm depth

D,T : Drainage tap - G $\frac{1}{4}$, 9 mm depth

**HYDRAULIC DISC BRAKES
FOR FLANGE ATTACHMENT TO MTS AND MTV HYDRAULIC MOTORS**

TYPE LBS/315



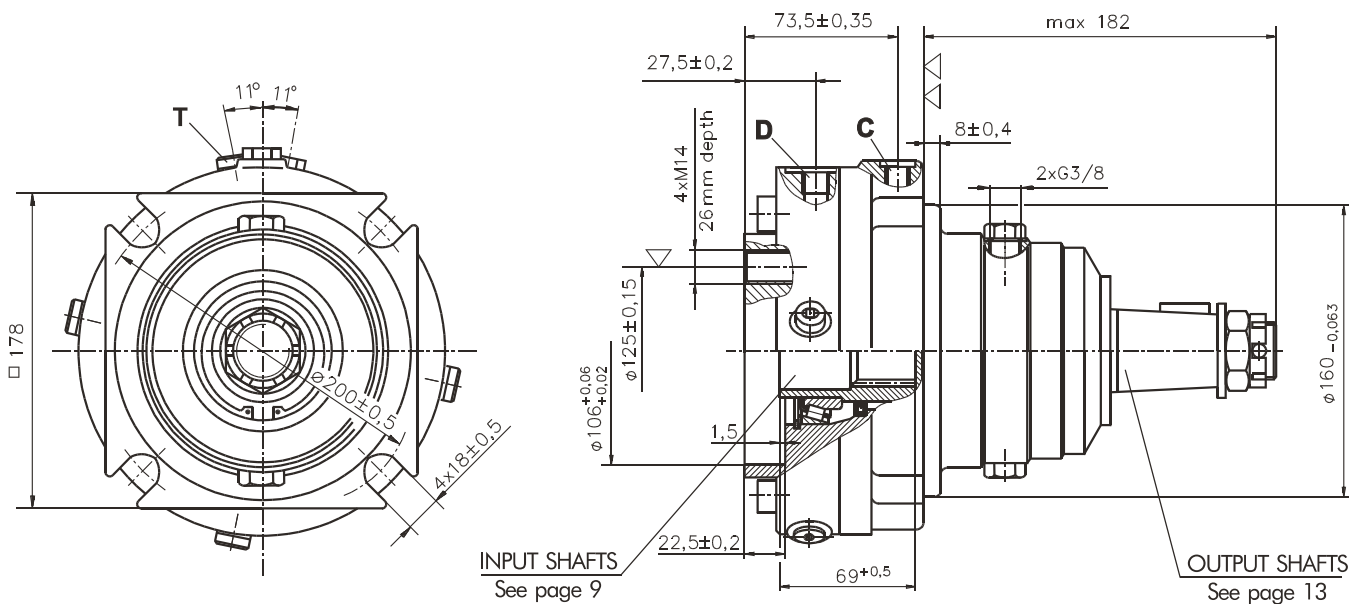
▽ - Place for attachment
(tightening torque for bolt M12 - 8.8 - 8,5 daNm)

▽▽ - Place for attachment

C : Brake release Port - G $\frac{1}{4}$, 9 mm depth

D : Drainage tap - G $\frac{1}{4}$, 9 mm depth

TYPE LBV/315



▽ - Place for attachment
(tightening torque for bolt M14 - 8.8 - 14 daNm)

▽▽ - Place for attachment

C : Brake release Port - G $\frac{1}{4}$, 9 mm depth

D,T : Drainage tap - G $\frac{1}{4}$, 9 mm depth

**HYDRAULIC DISC BRAKES
FOR FLANGE ATTACHMENT TO MTS AND MTV HYDRAULIC MOTORS**

SPECIFICATION DATA

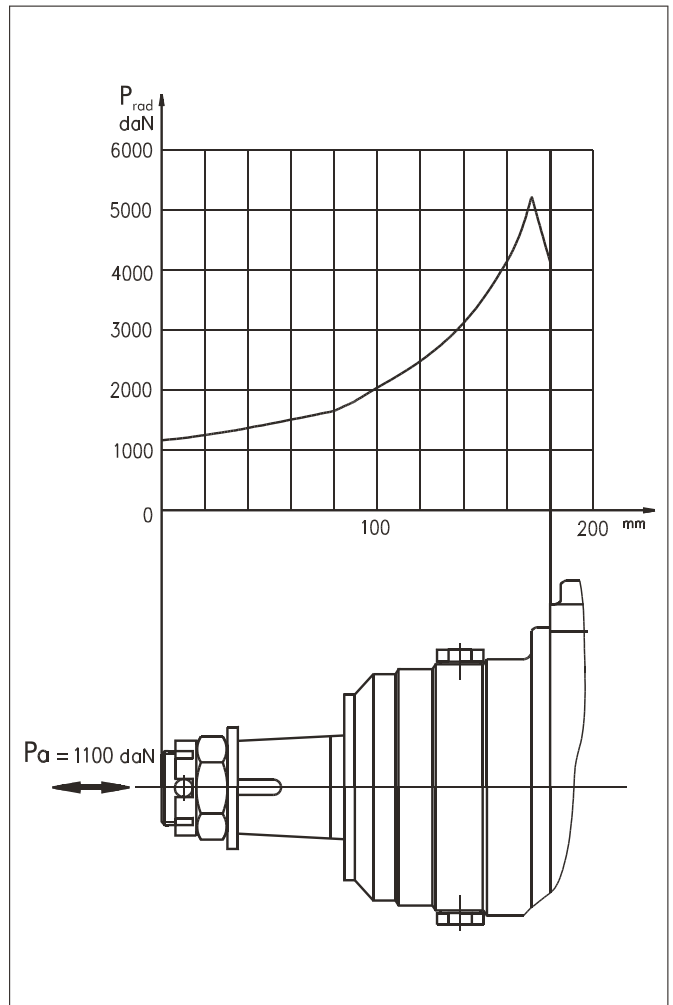
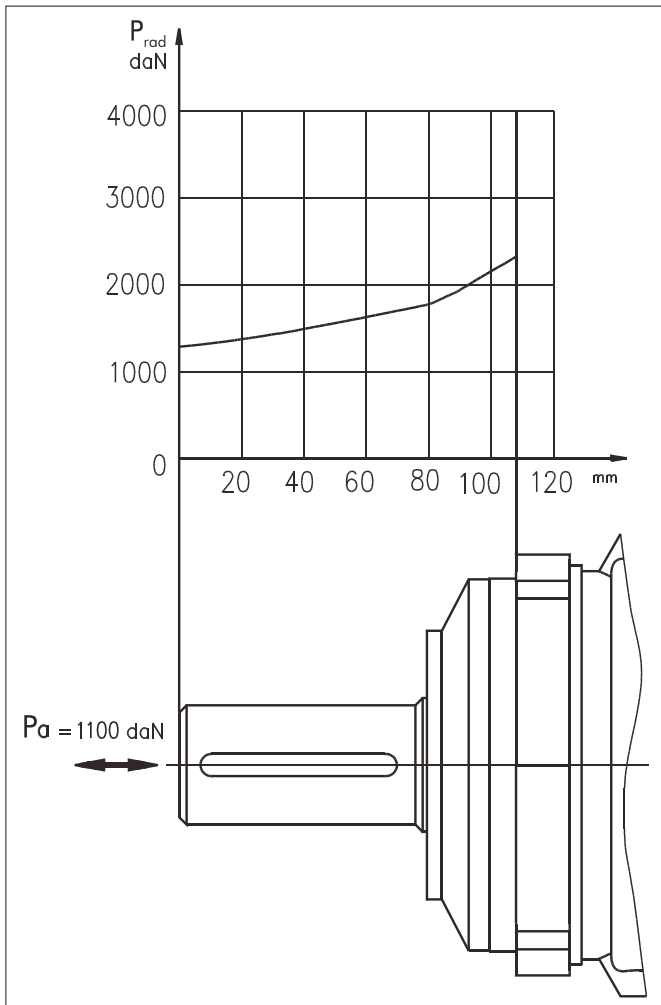
Description	LBS/314(315) LBV/314(315)	21	29	43	65	85	110	130
*Static Torque [daNm]		18-23	28-33	42-46	61-70	83-92	108-118	126-136
Opening Pressure [bar]	min	4-5	6-7	9-10	13-15	18-20	23-25	27-29
	max	300						
Min. oil quantity for brake releasing [cm ³]		8- 9						
Oil volume [cm ³]		150 - 300						
Max. Pressure in drain space [bar]		5						
Weight .../314(315) [kg]		24(25)						

*Static torque is obtained at working pressure - 0 bar.

LOAD CURVE

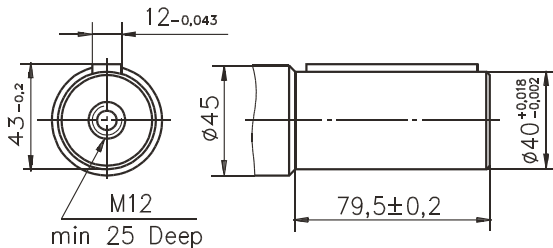
LBS(V) ... /314

LBS(V) ... /315

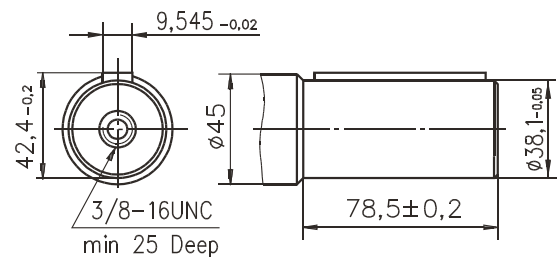


OUTPUT SHAFT EXTENSIONS

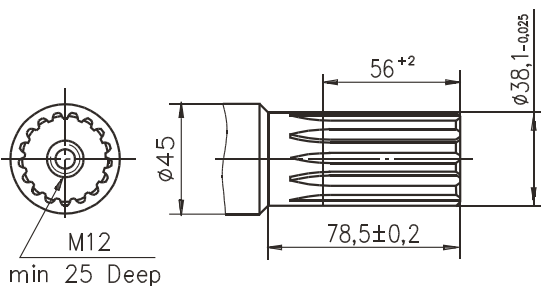
C - $\varnothing 40$ straight, Parallel key A12x8x70 DIN 6885
Max. Torque 132,8 daNm



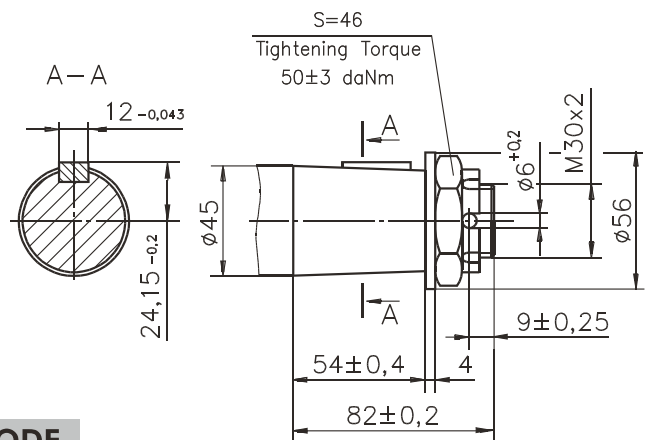
CO - $\varnothing 1\frac{1}{2}$ " straight, Parallel key $\frac{3}{8}$ "x $\frac{3}{8}$ "x $2\frac{1}{4}$ " BS46
Max. Torque 132,8 daNm



SH - $\varnothing 1\frac{1}{2}$ " splined 17T, DP12/24 ANSI B92.1-1976
Max. Torque 132,8 daNm



K - tapered 1:10, Parallel key B12x8x28 DIN 6885
Max. Torque 210,7 daNm



ORDER CODE

1	2	3	4	5	6
LB	/	-			

Pos. 1 - Type

- S** - Disc Brake for short motor **S** - MTS
- V** - Disc Brake for very short motor **V** - MTV

Pos. 2 - Designe code

- 314** - for MTS and MTV Motors
- 315** - for MTS and MTV Motors (Wheel Mount)

Pos. 3 - Static Torque code (See Specification data)

- 21, 29, 43, 65, 85, 110, 130

Pos. 4 - Output Shaft Extensions*

- C** - $\varnothing 40$ straight, Parallel key A12x8x70 DIN 6885
- CO** - $\varnothing 1\frac{1}{2}$ " straight, Parallel key $\frac{3}{8}$ "x $\frac{3}{8}$ "x $2\frac{1}{4}$ " BS46
- SH** - $\varnothing 1\frac{1}{2}$ " splined 17T, ANSI B92.1-1976
- K** - $\varnothing 45$ tapered 1:10, Parallel key B12x8x28 DIN6885

Pos. 5 - Option (Paint)**

- omit - no Paint
- P** - Painted
- PC** - Corrosion Protected Paint

Pos. 6 - Design Series

- omit - Factory specified

NOTES:

* The permissible output torque for shafts must be not exceeded!

** The color is by customer's request.

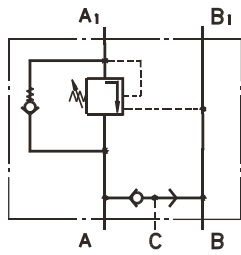
The Disc Brakes are mangano-phosphatized as standard.

ATTENTION:

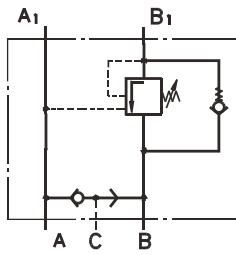
- Hydraulic brake is delivered without oil (it is lubricated only).
- In all brakes, friction discs and separators should be lubricated. Space is filled with 150 ÷ 300 cm³ mineral oil HLP (DIN 51524) or HM (ISO 6743/4).

VALVES FOR HYDRAULIC MOTORS

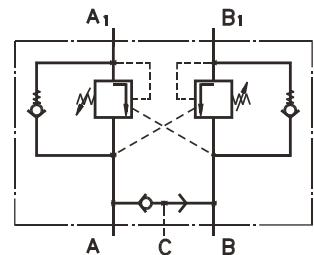
OVERCENTER VALVES WITH BRAKE CONTROL



Single Overcenter Valves with Brake Control type KPB ... EA



Single Overcenter Valves with Brake Control type KPB ... EB



Dual Overcenter Valves with Brake Control type KPB ... D

CONTENTS

Valves for MP and MR type KPBR ... 15	Crossover Relief Valves 21
Valves for MS type KPBS 16	Valves for MP and MR type KP..R ... 22
Valves for MT type KPBT 17	Valves for MS type KP..S 23
Valves for MV type KPBV 18	Valves for MT type KP..T 24
Switch valves type KPWR and KPWS 19	Valves for MV type KP..V 25
Switch valves type KPWT and KPWW 20	Order Code 27

SPECIFICATION DATA

Parameters	Type							
	KPBR...E	KPBS...E	KPBR...D	KPBS...D	KPBT...E	KPBT...D	KPBV...E	KPBV...D
Flow Rate , l/min	60				100		200	
Rated Pressure* , bar	70÷250				70÷250		70÷250	
Pilot Ratio	4,25:1				4,25:1		4,25:1	
Weight , kg	3,300	3,340	3,350	3,390	5,400	5,800	9,200	9,750

*Pressure Settings are at flow rate of 5 lpm and viscosity 32 mm²/s (50 °C).

PRESSURE LOSSES

