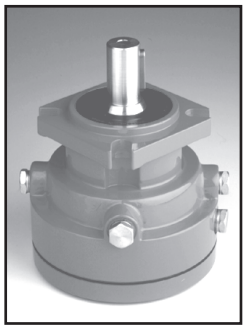
HYDRAULIC DISC BRAKES LB, LBS, LBV- Wet



APPLICATION

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



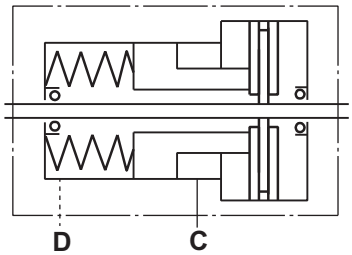
GENERAL

Fluid type	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Viscosity range, mm²/s	20÷75 [98÷347]
Filtration	ISO code 20/16 (nominal filtration of 25 microns)
Maintenance	Changed after the first 50-100 h, then after every 500-1500 h.

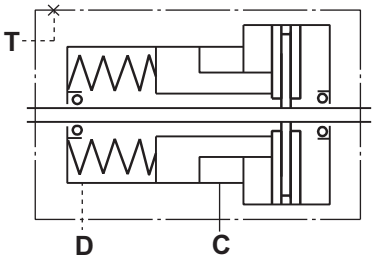
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LB, LBS

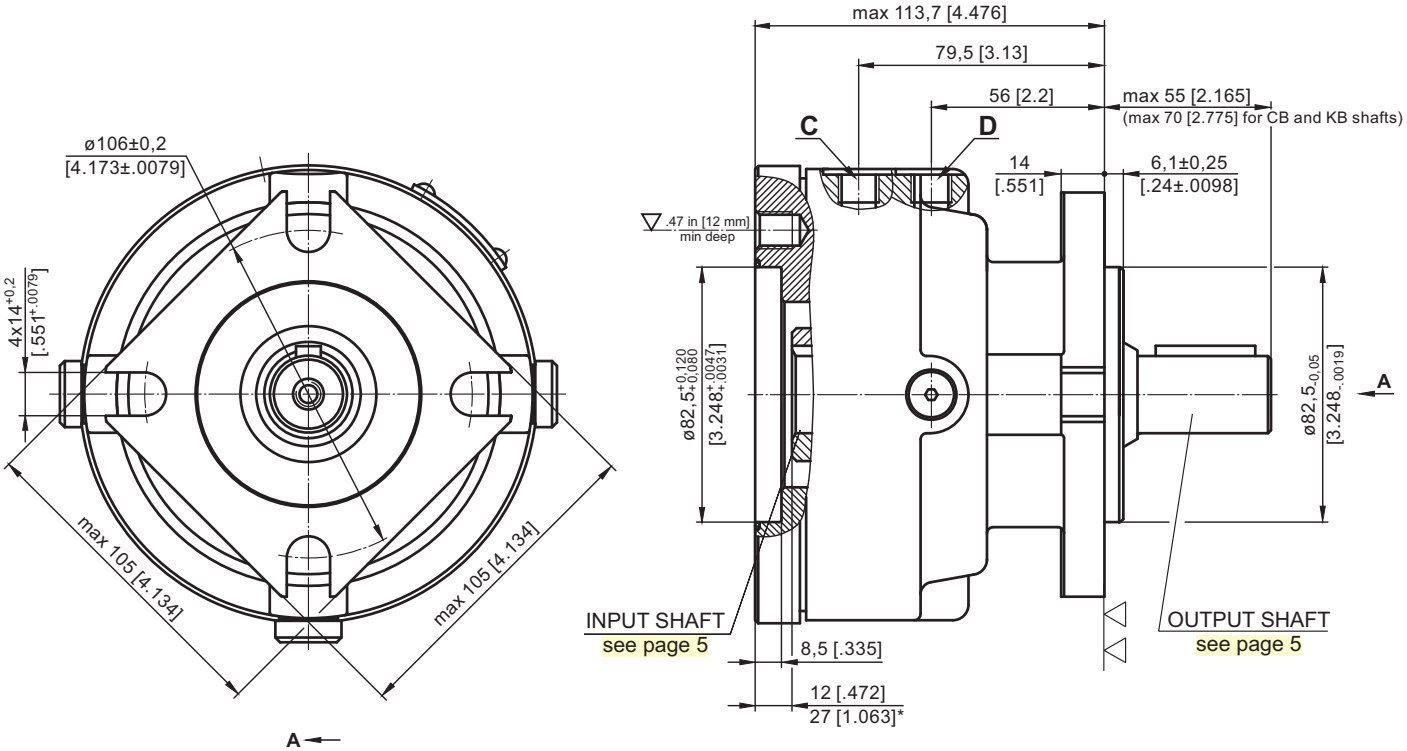


LBV



HYDRAULIC DISC BRAKE for FLANGE ATTACHMENT to MP, MR and MS HYDRAULIC MOTORS

TYPE LB/288



▽- Place for attachment (tightening torque for screw M12-12.9 - $7^{+0,5}$ daNm [620^{+44} lb-in])

▽▽- Place for attachment

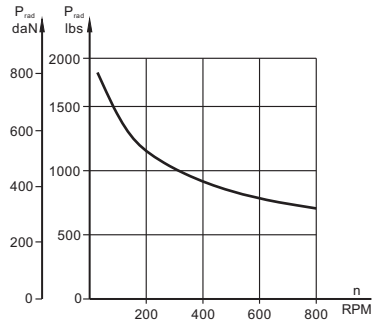
C: Brake release Port - G¼, 9 mm [.35 in] depth

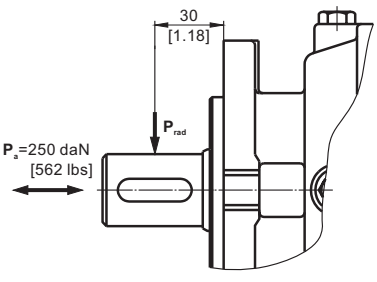
D: Drainage tap - G¼, 9 mm [.35 in] depth

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

mm [in]

LOAD CURVE





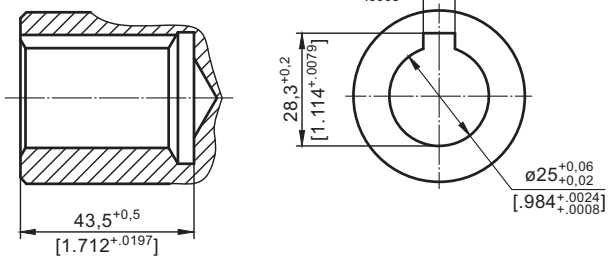
SPECIFICATION DATA

Description **LB/288...**		7	14	21	32	43	63
*Min. Static Torque, daNm [lb-in]		6-8 [531-708]	13-15 [1150-1327]	20-22 [1770-1947]	31-34 [2743-3009]	41-45 [3628-3982]	61-64 [5399-5665]
Opening Pressure, bar [PSI]	min	4-5 [58-73]	8-9 [116-130]	12-13 [174-188]	18-20 [260-290]	24-26 [348-377]	38-39 [550-565]
	max	300 [4350]					
Min. oil quantity for brake releasing, cm^3 [in^3]		7 - 8 [.427 - .488]					
Oil volume, cm^3 [in^3]		50 - 120 [3.5 - 7.35]					
Max. Pressure in drain space, bar [PSI]		0,5 [7.25]					
Weight, kg [lb]		9 [19.8]					

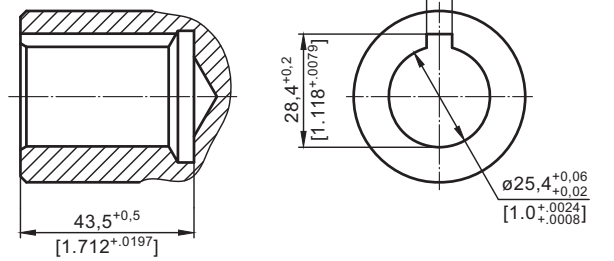
*Static torque is obtained at working pressure - 0 bar [0 PSI].

INPUT SHAFT HOLES

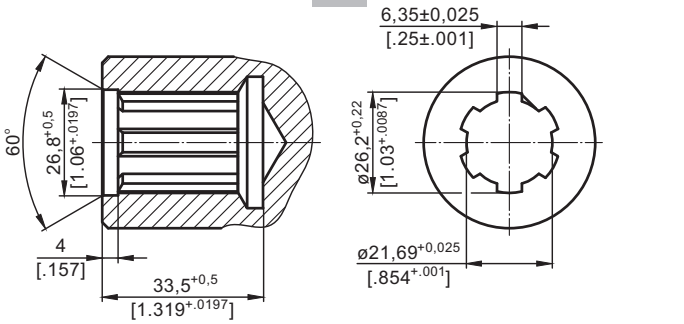
C



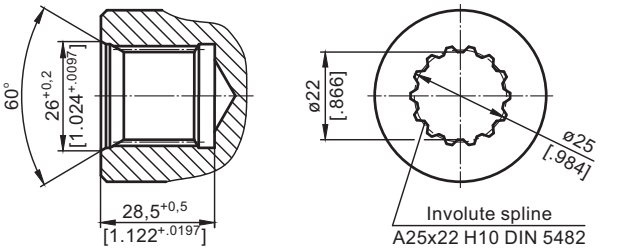
CO



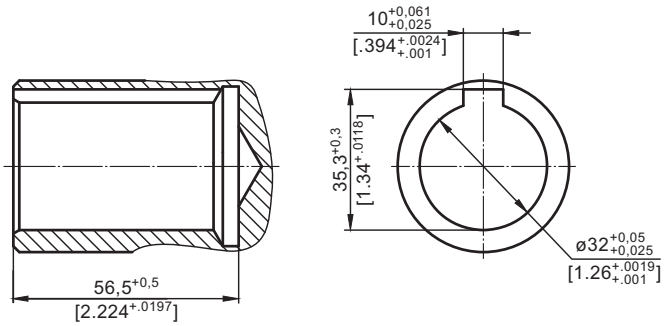
SH



SB



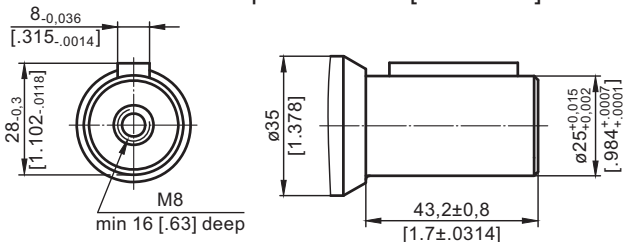
CB



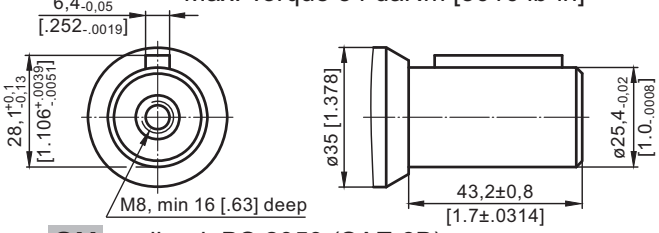
mm [in]

OUTPUT SHAFT EXTENSIONS

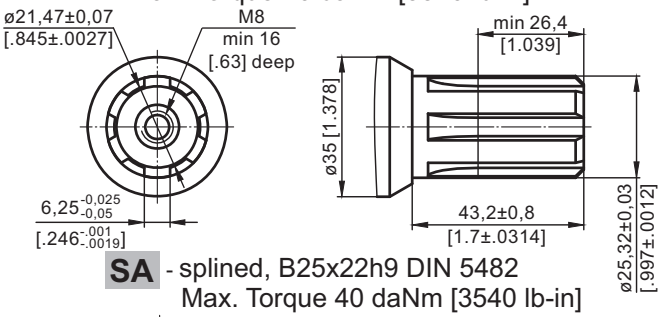
C - ø25 straight, Parallel key A8x7x30 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



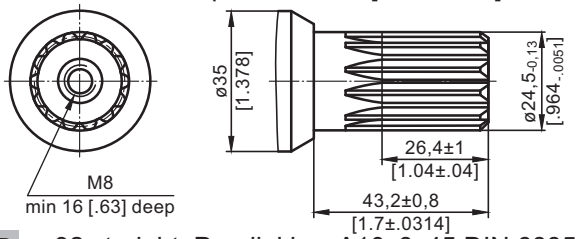
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



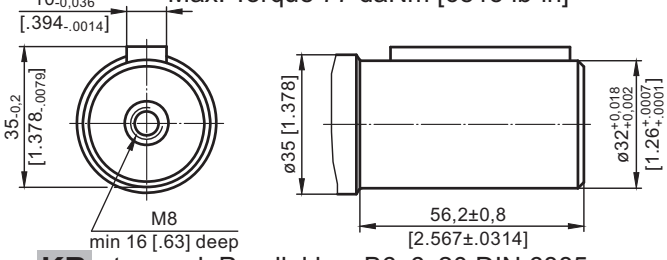
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



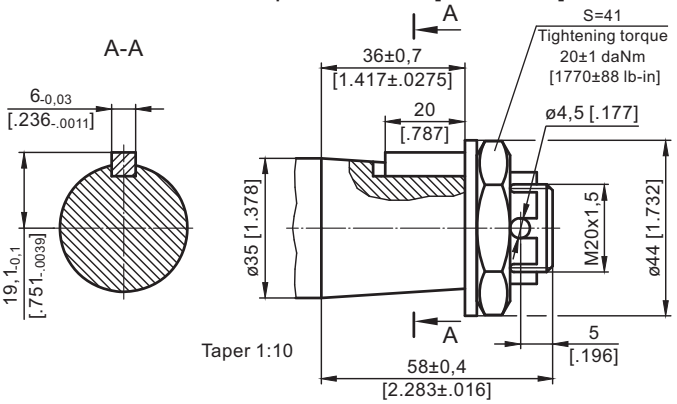
SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]



CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



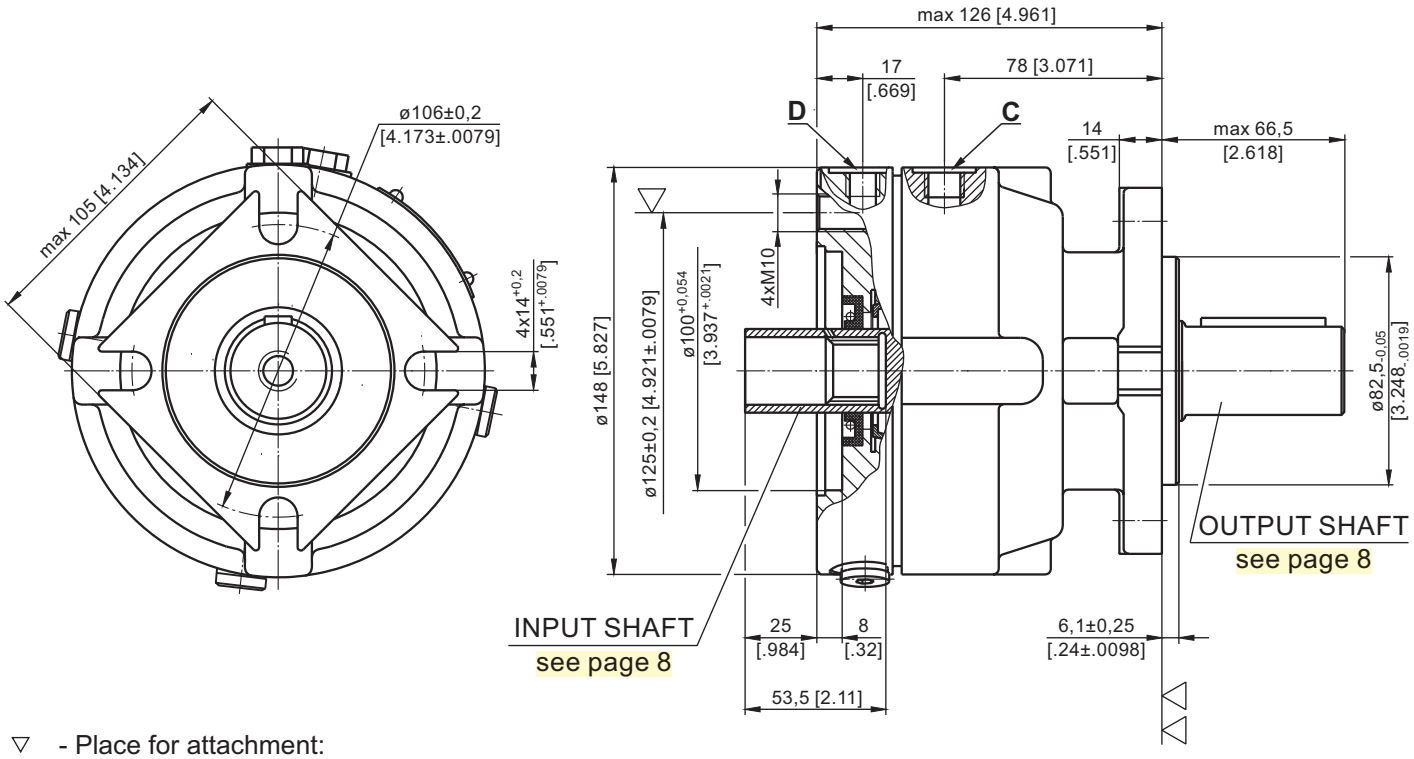
KB - tapered, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm [8400 lb-in]



M+S HYDRAULIC

HYDRAULIC DISC BRAKE for FLANGE ATTACHMENT to MSS and MSV HYDRAULIC MOTORS

TYPE LBS/289



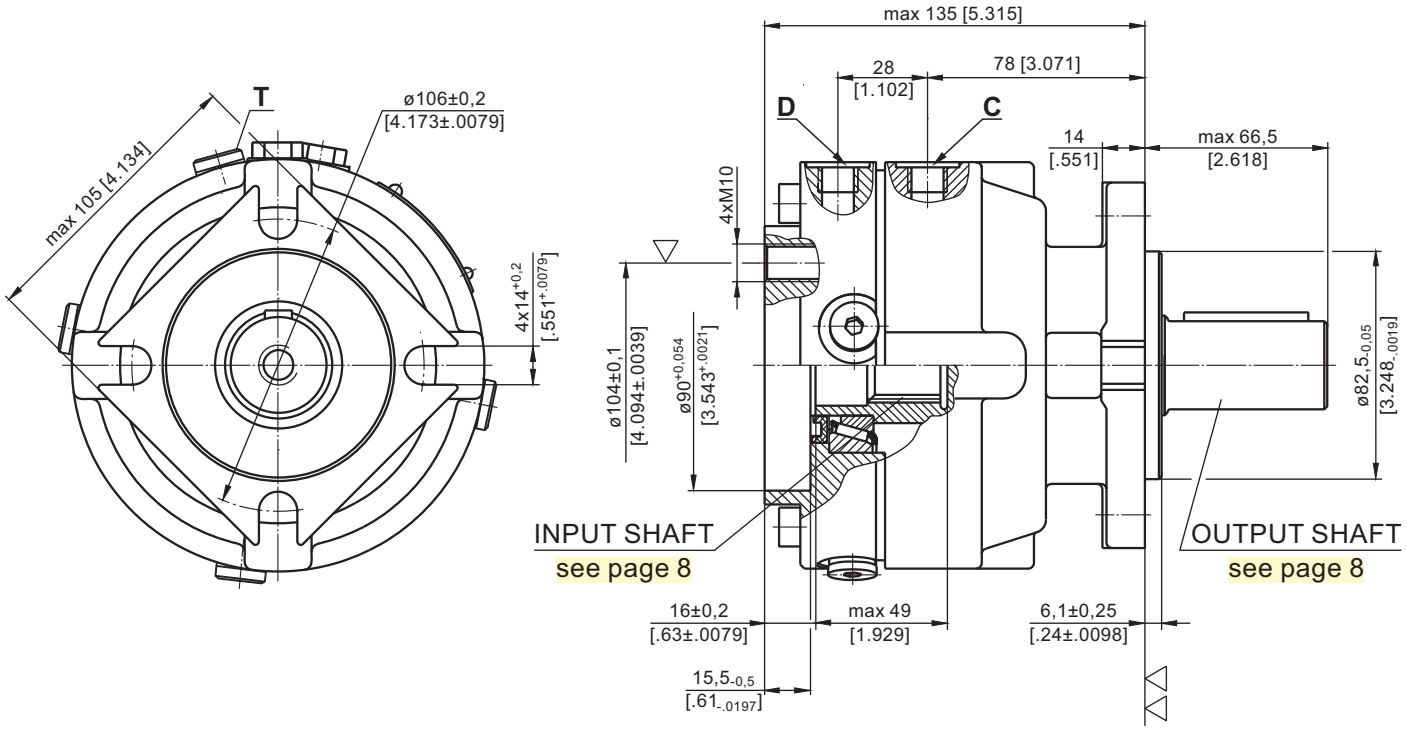
▽ - Place for attachment:
LBS - tightening torque for screw M10x35 - 12.9 DIN 912 - 6,5$^{+0,5}$ daNm [575^{+44} lb-in]
LBV - tightening torque for screw M10xL - 12.9 DIN 931 - 6,5$^{+0,5}$ daNm [575^{+44} lb-in]

▽▽ - Place for attachment

mm [in]

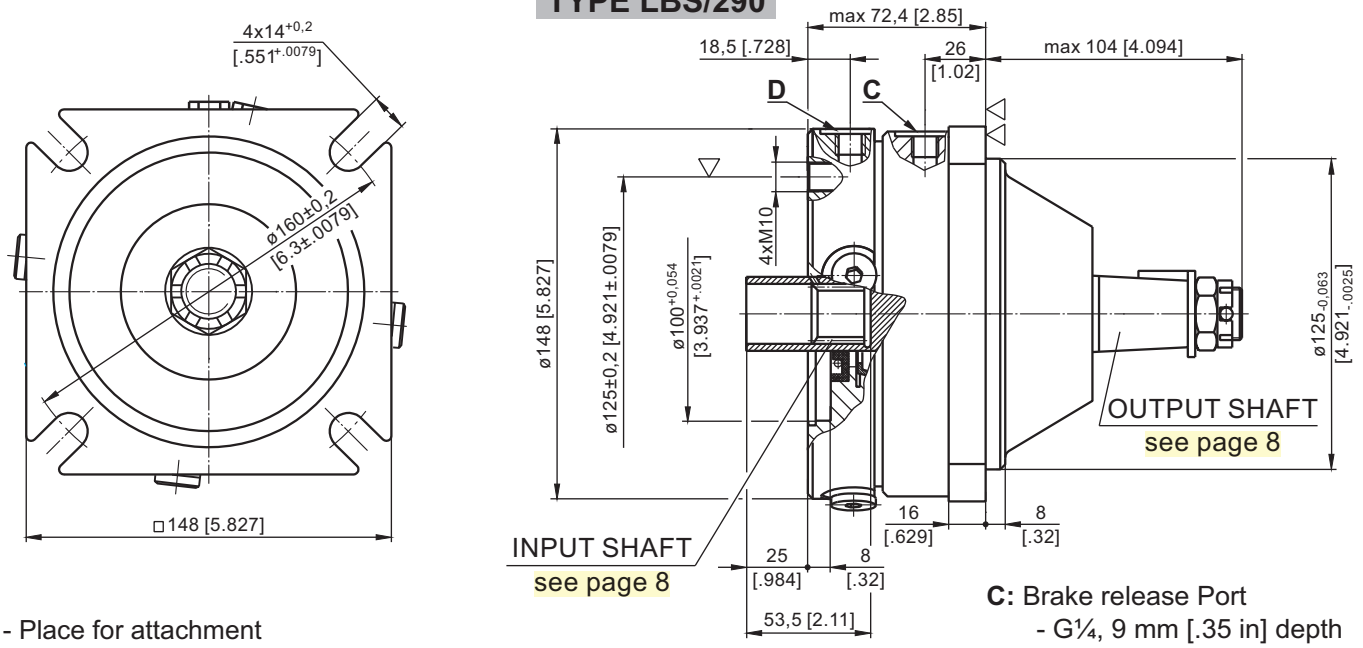
C: Brake release Port - G¼, 9 mm [.35 in] depth
D: Drain plug for the Brake - G¼, 9 mm [.35 in] depth
T: Drain plug for the Motor - G¼, 9 mm [.35 in] depth

TYPE LBV/289



HYDRAULIC DISC BRAKE for FLANGE ATTACHMENT to MSS and MSV HYDRAULIC MOTORS

TYPE LBS/290



▽ - Place for attachment
LBS - tightening torque for screw M10x35 - 12.9 DIN 912 - 6,5+5 daNm [575+44 lb-in]
LBV - tightening torque for screw M10xL - 12.9 DIN 931 - 6,5+5 daNm [575+44 lb-in]

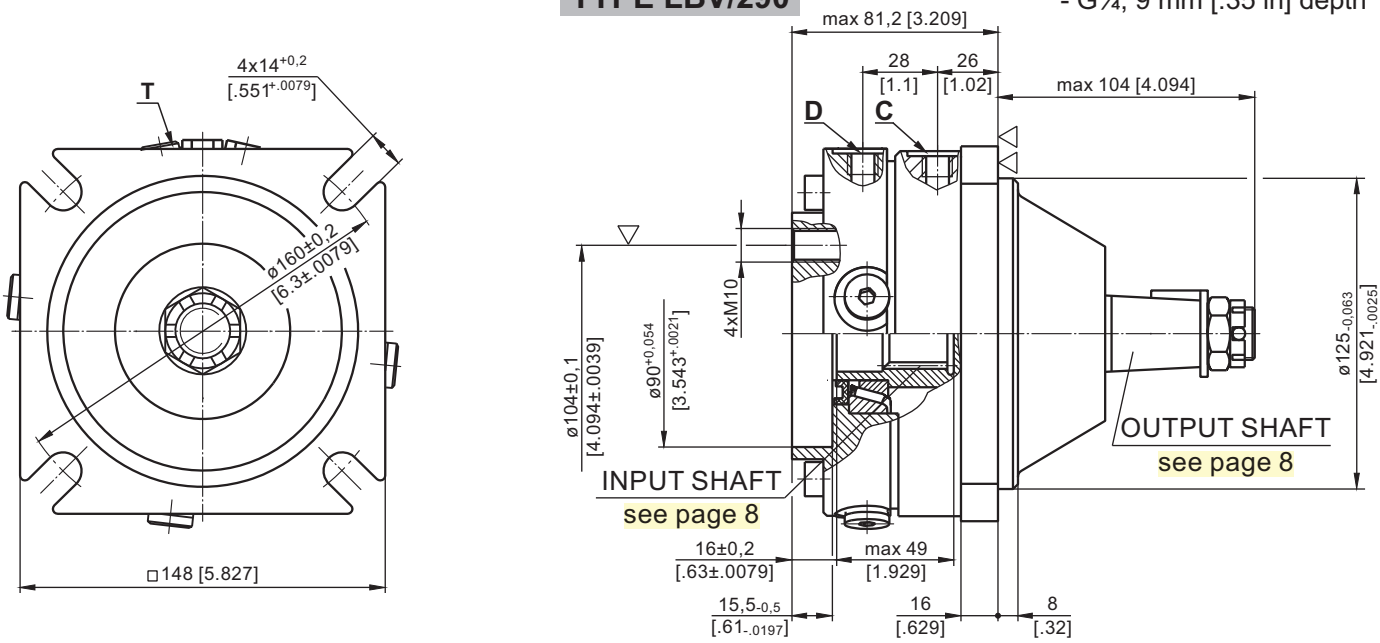
▽▽ - Place for attachment

C: Brake release Port
- G¼, 9 mm [.35 in] depth

D: Drain plug for the Brake
- G¼, 9 mm [.35 in] depth

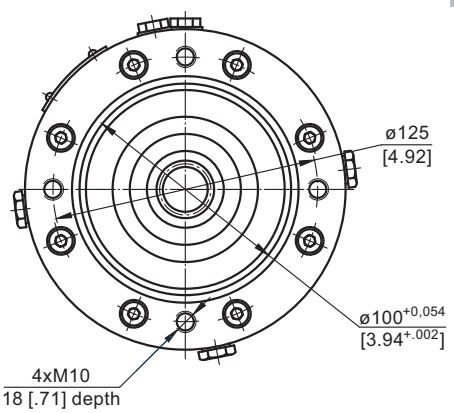
T: Drain plug for the Motor
- G¼, 9 mm [.35 in] depth

TYPE LBV/290



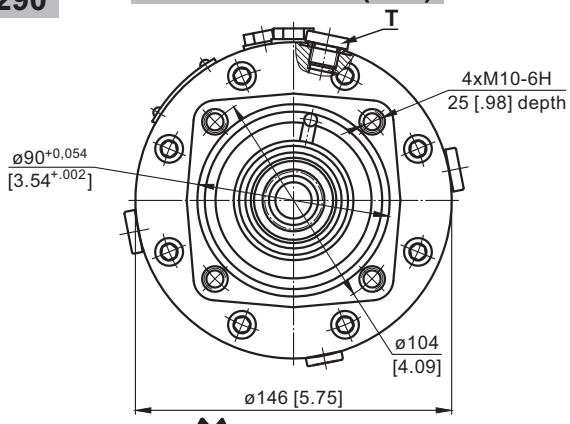
INPUT FACE
For Versions 289 and 290

TYPE LBS/289(290)



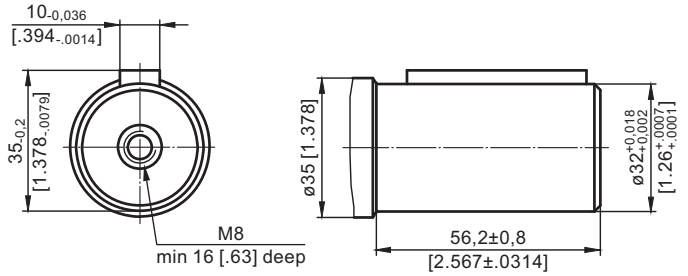
mm [in]

TYPE LBV/289(290)

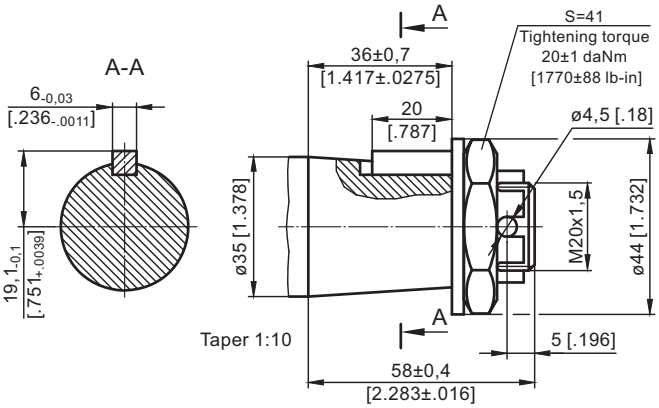


OUTPUT SHAFT EXTENSIONS

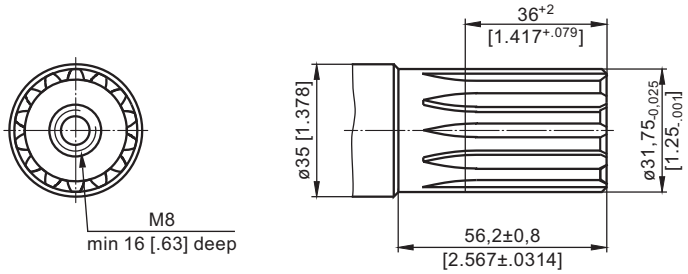
CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



KB - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm [8400 lb-in]



SH - ø1¼" splined 14T, DP12/24 ANS B92.1-1970
Max. Torque 95 daNm [8400 lb-in]



mm [in]

SPECIFICATION DATA

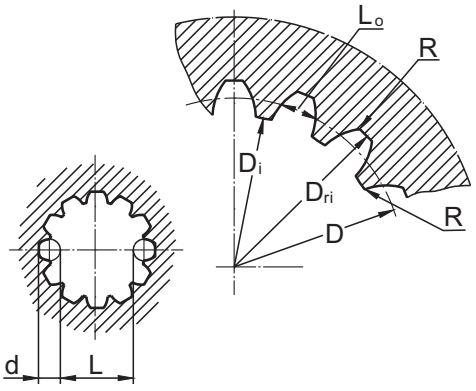
Description LBS/289(290) LBV/289(290)		21	32	43	63	L43	L63
*Min. Static Torque, daNm [lb-in]		20-22 [1770-1947]	31-34 [2743-3009]	41-45 [3628-3982]	61-64 [5399-5665]	41-45 [3628-3982]	61-64 [5399-5665]
Opening Pressure, bar [PSI]	min	12-13 [174-188]	18-20 [260-290]	24-26 [348-377]	37-39 [540-565]	20-22 [290-320]	21-23 [305-333]
	max	300 [4350]					
Min. oil quantity for brake releasing	cm^3 [in^3]	7 - 8 [.427 - .488]					
Oil volume	cm^3 [in^3]	50 - 120 [3.05 - 7.35]					
Max. Pressure in drain space	bar [PSI]	5 [72]					
Weight	kg [lb]	9 [19.8]					

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

INTERNAL SPLINE DATA for the ATTACHED COMPONENT

Fillet Root Side Fit		LBS(V)/289 LBS(V)/290		LBS(V)/314 LBS(V)/315	
		mm	inch	mm	inch
Number of Teeth	z	12	12	16	16
Diametral Pitch	DP	12/24	12/24	12/24	12/24
Pressure Angle		30°	30°	30°	30°
Pitch Dia.	D	25,4	1	33,8656	1.3333
Major Dia.	Dri	$28,0_{-0,1}$	1.1 ÷ 1.098	$38,4^{+0,4}$	1.5118 ÷ 1.5275
Minor Dia.	Di	$23,0^{+0,033}$	.907 ÷ .905	$32,15^{+0,06}$	1.2657 ÷ 1.2673
Space Width [Circular]	Lo	4,308±0,020	.1704 ÷ .1688	4,516±0,037	.1763 ÷ .1791
Fillet Radius	R	0,2	.008	0,5	.02
Max. Measurement between Pins	L	$17,62^{+0,15}$	.699 ÷ .694	$26,9^{+0,10}$	1.063 ÷ 1.059
Pin Dia.	d	4,835±0,001	.19039 ÷ .190314	4,835±0,001	.19026 ÷ .19034
Corrected	x.m	+0,8	+.031	+1,0	+.039

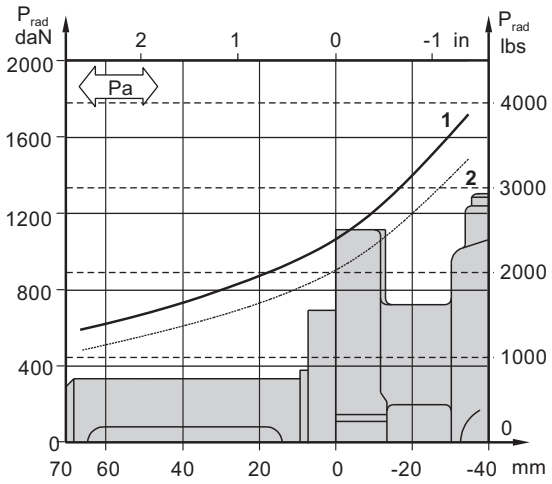
Standard ANS B92.1-1970, class 5 [m=2.1166]



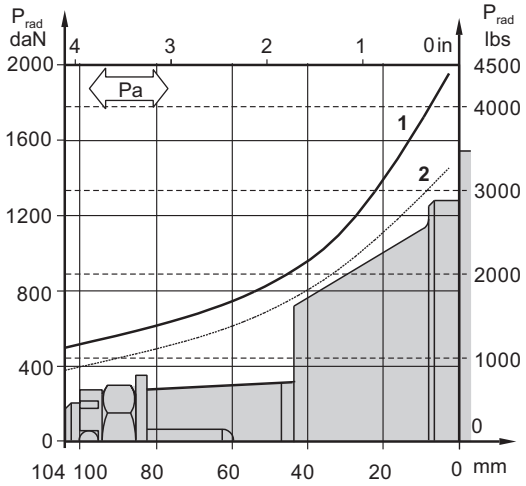
LOAD CURVE

The curve applies to a B10 bearing life of 3000 hours at 200 RPM
1: Pa<350 daN [787 lbs]
2: Pa=500 daN [1125 lbs]

LBS(V)/289



LBS(V)/290



ORDER CODE - LB/288

	1		2	3	4	5
LB/288		**-**				

Pos.1 - Input Shaft Hole

C, CO, SH, CB, SB

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

7, 14, 21, 32, 43, 63

Pos.3 - Output Shaft Extensions**

C	- ø25 straight, Parallel key A8x7x32 DIN6885
CO	- ø1" straight, Parallel key ¼"x¼"x1¼" BS46
SH	- ø25,32 splined BS 2059 (SAE 6B)
SA	- ø24,5 splined B25x22 DIN 5482
CB	- ø32 straight, Parallel key A10x8x45 DIN6885
KB	- ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

Pos.4 - Option (Paint)***

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

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.2 - Design code

289	- for MSS and MSV motors
290	- for MSS and MSV motors (Wheel Mount)

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

21, 32, 43, 63, L43, L63

Pos.4 - Output Shaft Extensions*

CB	- ø32 straight, Parallel key A10x8x45 DIN6885
KB	- ø35 tapered 1:10, Parallel key A6x6x20 DIN6885
SH	- ø1¼" splined 14T ANS B92.1-1970

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 not be exceeded!
For Max. Torque values see data on pages 5 and 8.

** The color is by customer's request.

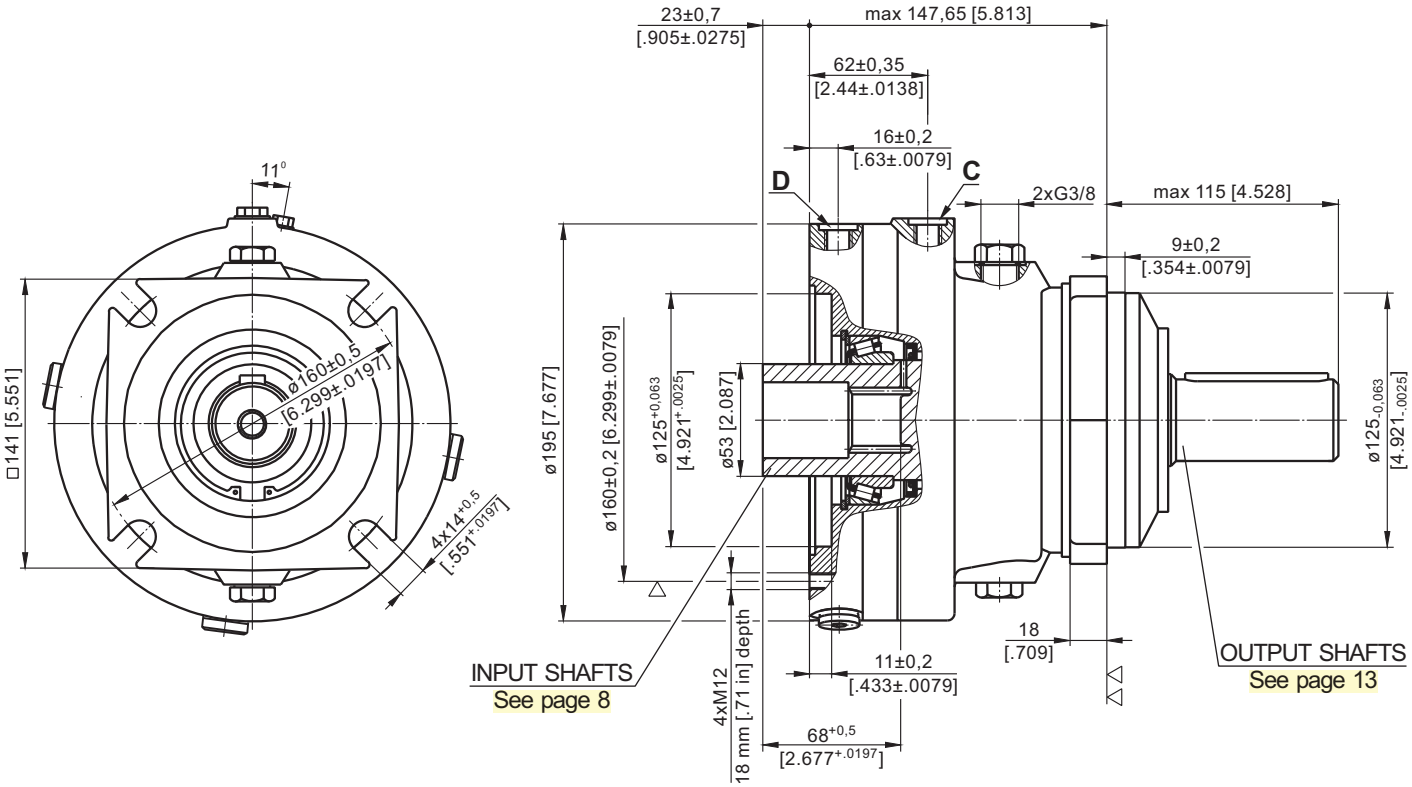
The Disc Brakes are mangano-phosphatized as standard.

ATTENTION:

1. Hydraulic brake is delivered without oil (it is lubricated only).
2. Hydraulic brake is filled through the drain port **D**. Space is filled with 50 ÷ 120 cm^3 [3.05 ÷ 7.32 in^3] mineral oil HLP (DIN 51524) or HM (ISO 6743/4). For LB/288 fill oil after hydraulic motor assembly.
3. In all brakes, friction discs and separators should be lubricated.

HYDRAULIC DISC BRAKES
for FLANGE ATTACHMENT to MTS and MTV HYDRAULIC MOTORS

TYPE LBS/314



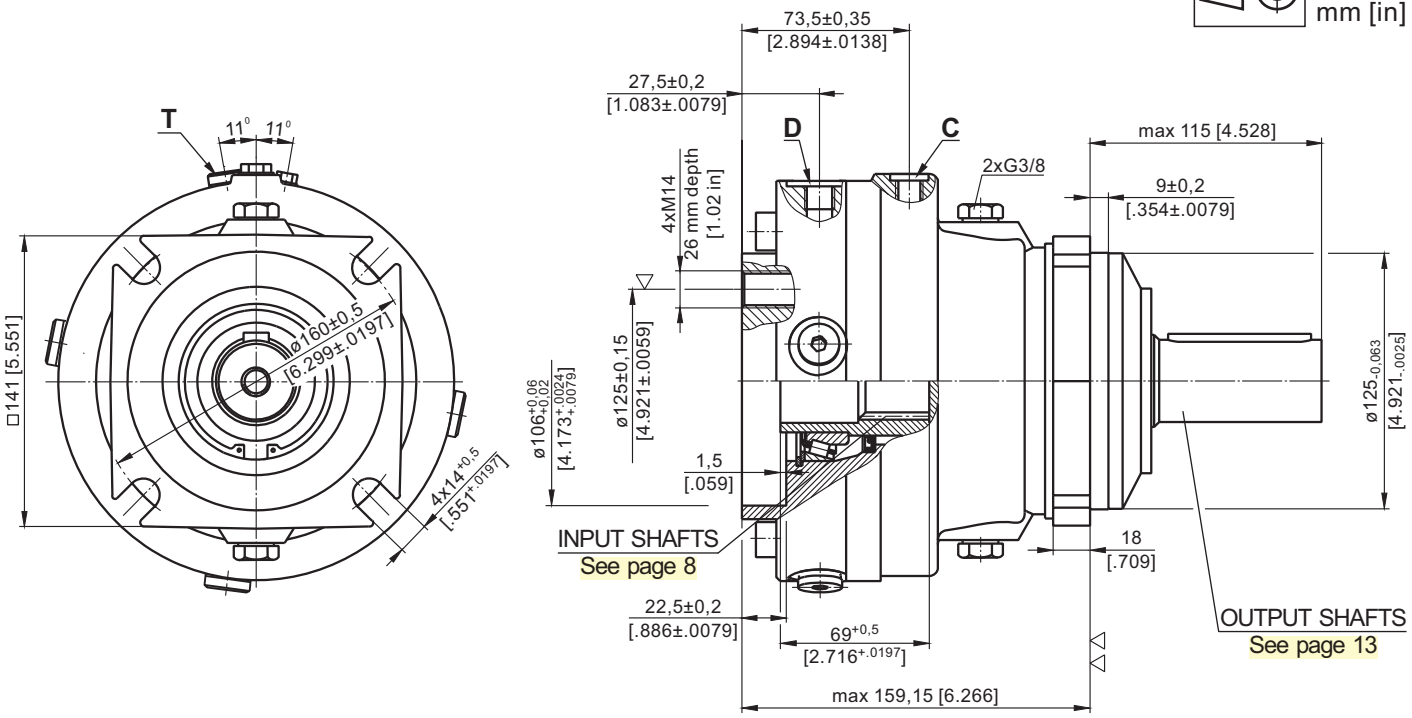
▽ - Place for attachment
(tightening torque for screw M12x30 - 12.9 DIN 912, $10^{+0,5}$ daNm [885^{+44} lb-in])

▽▽- Place for attachment

C: Brake release Port - G¼, 12 mm [.47 in] depth
D: Drainage tap - G¼, 12 mm [.47 in] depth

TYPE LBV/314

mm [in]



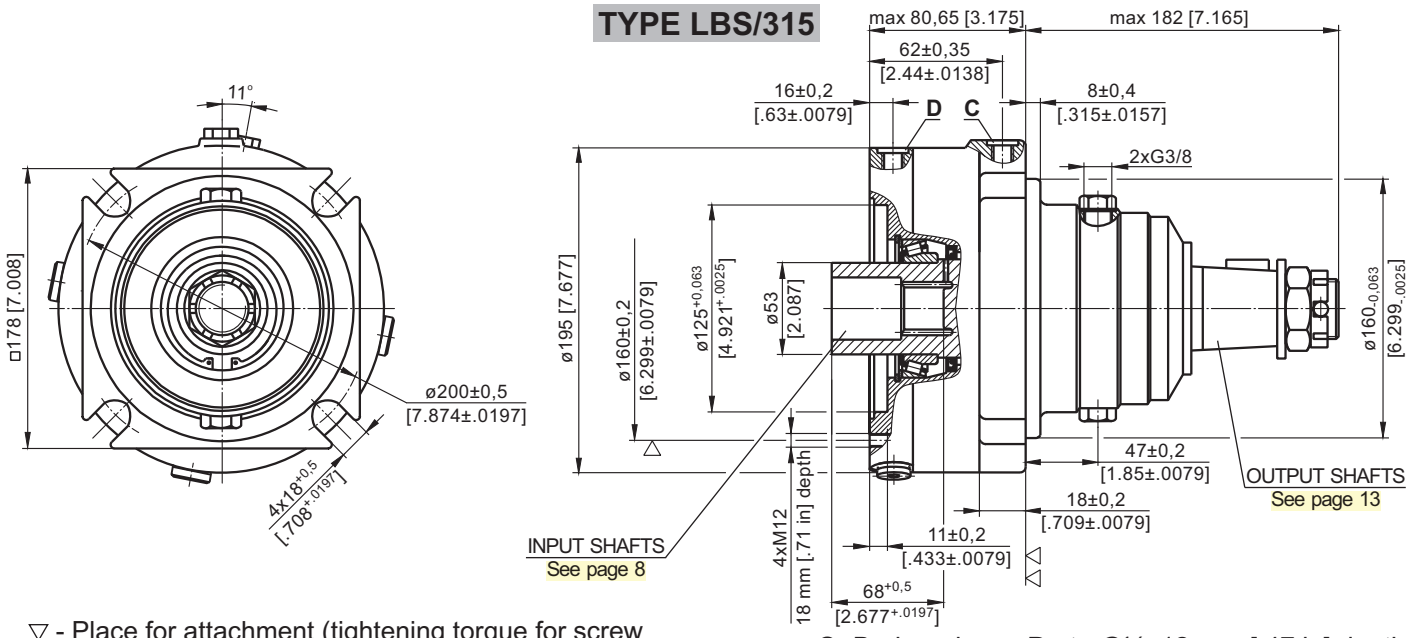
▽- Place for attachment
(tightening torque for screw M14xL - 12.9 DIN 912, $13^{+0,5}$ da Nm [1150^{+44} lb-in])

▽▽- Place for attachment

C: Brake release Port - G¼, 9 mm [.35 in] depth
D: Drain plug for the Brake - G¼, 9 mm [.35 in] depth
T: Drain plug for the Motor - G¼, 9 mm [.35 in] depth

HYDRAULIC DISC BRAKES
for FLANGE ATTACHMENT to MTS and MTV HYDRAULIC MOTORS

TYPE LBS/315



▽ - Place for attachment (tightening torque for screw M12x30 - 12.9 DIN 912, $10^{+0,5}$ daNm [885^{+44} lb-in])

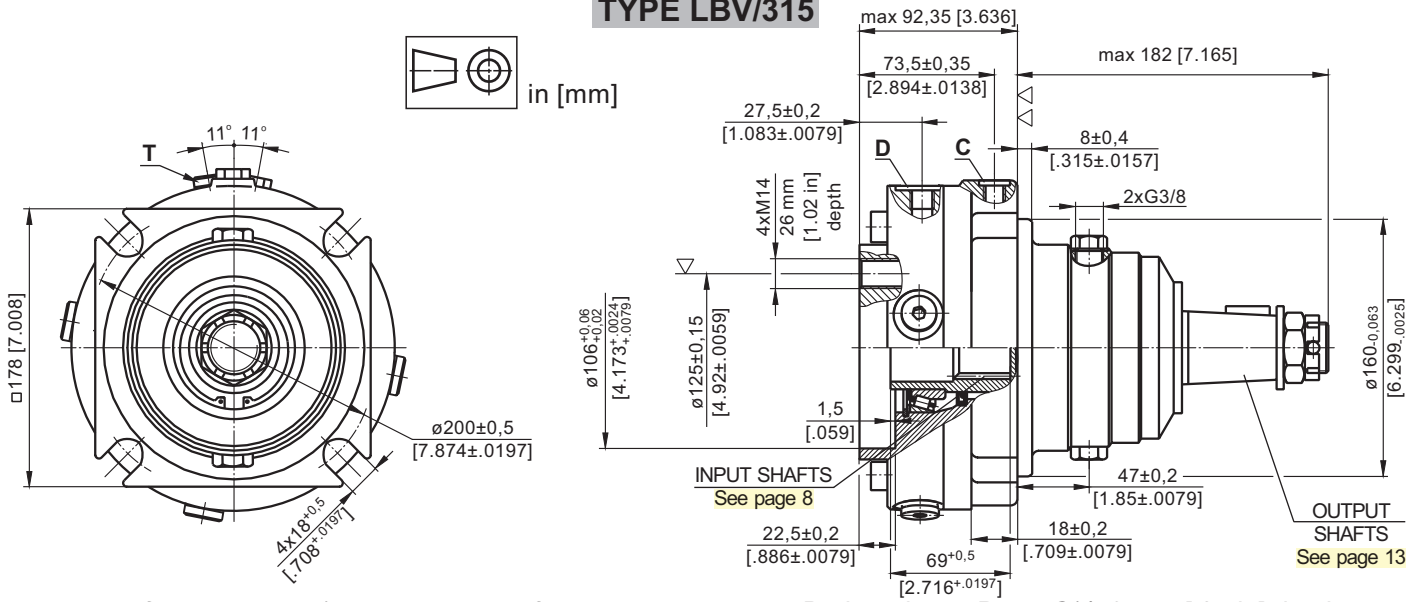
▽▽ - Place for attachment

C: Brake release Port - G¼, 12 mm [.47 in] depth

D: Drainage tap - G¼, 12 mm [.47 in] depth

TYPE LBV/315

in [mm]



▽ - Place for attachment (tightening torque for screw M14xL - 12.9 DIN 912, $13^{+0,5}$ da Nm [1150^{+44} lb-in])

▽▽ - Place for attachment

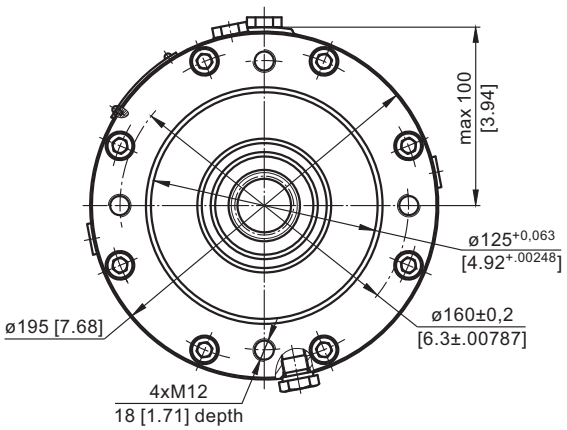
C: Brake release Port - G¼, 9 mm [.35 in] depth

D: Drain plug for the Brake - G¼, 9 mm [.35 in] depth

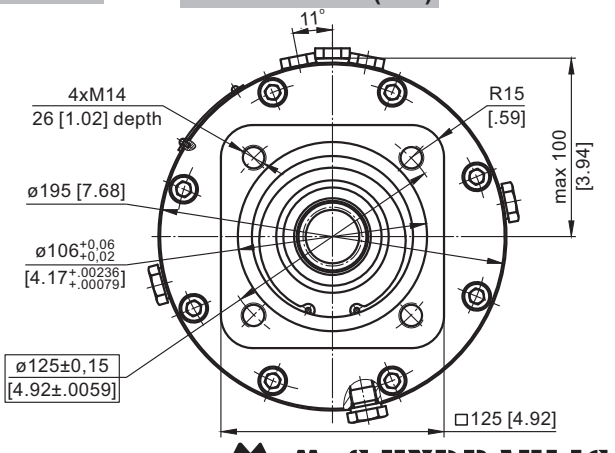
T: Drain plug for the Motor - G¼, 9 mm [.35 in] depth

INPUT FACE
For Versions 314 and 315

TYPE LBS/314 (315)



TYPE LBV/314 (315)



M+S HYDRAULIC

SPECIFICATION DATA

Description **LBS/314,315**			21	29	43	65	85	110	130
*Min. Static Torque,	daNm [lb-in]		18-23 [1593-2036]	28-33 [2478-2921]	42-46 [3717-4071]	61-70 [5399-6196]	83-92 [7346-8143]	108-118 [9559-10444]	126-136 [11152-12037]
Opening Pressure,	bar [PSI]	min**	4-5 [58-72]	6-7 [87-101]	9-10 [130-145]	13-15 [188-217]	18-20 [261-290]	23-25 [333-362]	27-29 [391-420]
		max	300 [4350]						
Min. oil quantity for brake releasing,	cm^3 [in^3]		8-9 [.488-.549]						
Oil volume,	cm^3 [in^3]		250						
Max. Pressure in drain space,	bar [PSI]		5 [72]						
Weight for .../314 .../315	kg [lb]		24 [52.9] 25 [55.1]						

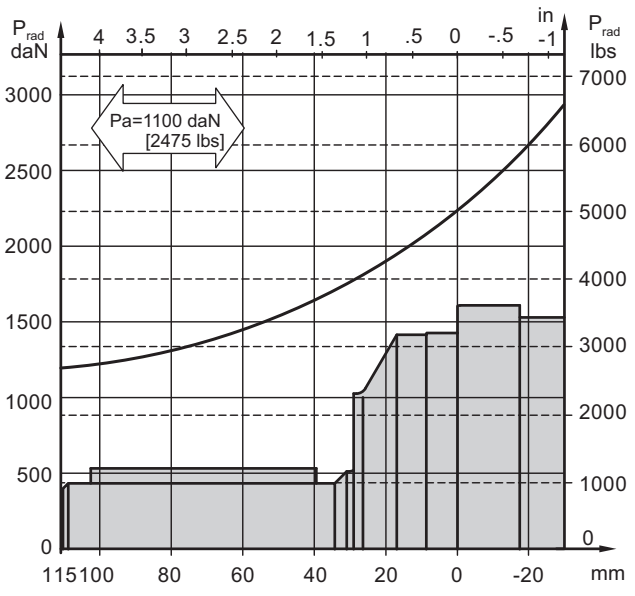
* Static torque is obtained at working pressure - 0 bar.

** The indicated value is a difference between the inlet pressure for driving of the brake and the drain pressure. Brakes must always have a drain line.

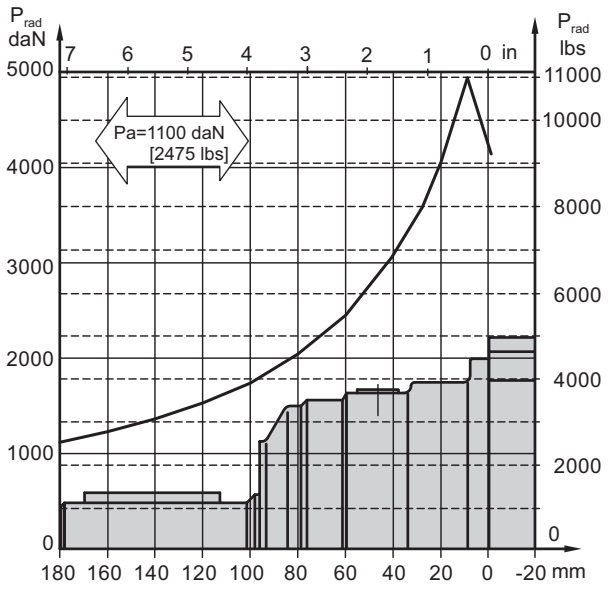
LOAD CURVE

The output shaft runs in tapered bearings that permit high axial and radial forces. The permissible radial load on the shaft is shown for an axial load of 0 N as function of the distance from the mounting flange to the point of load application. The curves apply to a B10 bearing life of 2000 hours at 100 RPM.

LBS(V) ... /314

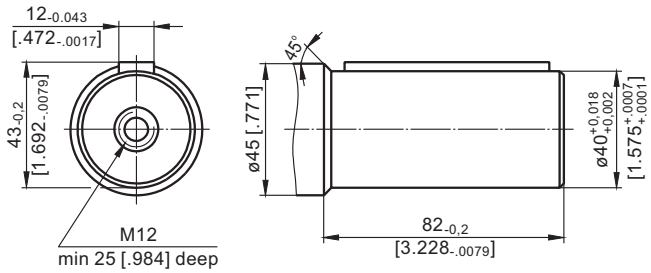


LBS(V) ... /315

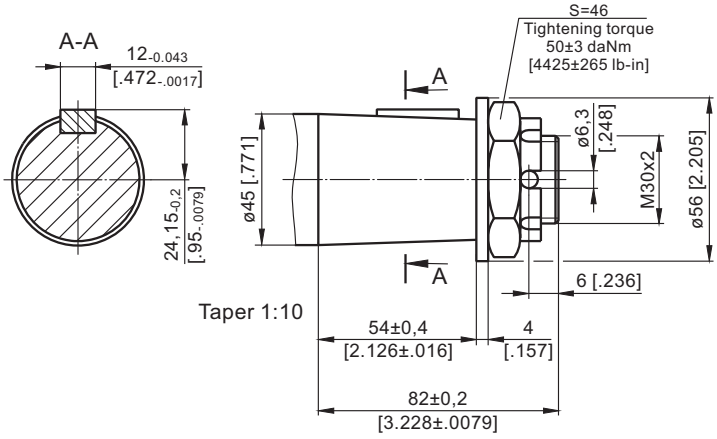


OUTPUT SHAFT EXTENSIONS

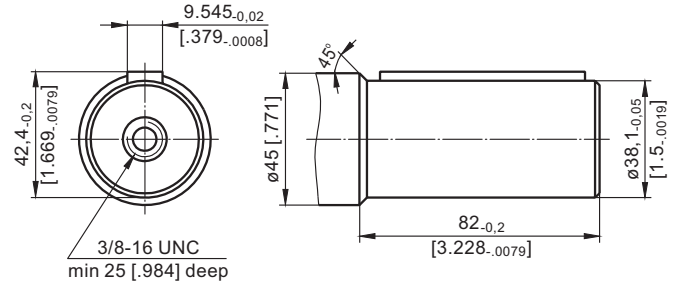
C - ø40 straight, Parallel key A12x8x70 DIN 6885
Max. Torque 132,8 daNm [11755 lb-in]



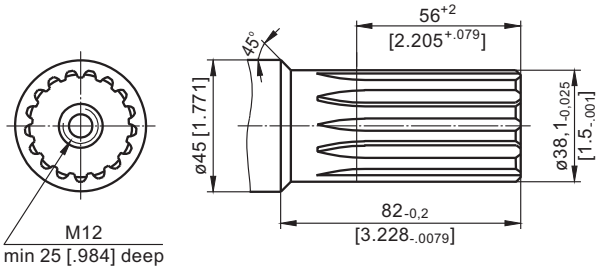
K - tapered 1:10, Parallel key B12x8x28 DIN 6885
Max. Torque 210,7 daNm [18650 lb-in]



CO - ø1½" straight, Parallel key ⅜"x⅜"x 2¼" BS46
Max. Torque 132,8 daNm [11755 lb-in]



SH - ø1½" splined 17T, DP 12/24 ANSI B92.1-1976
Max. Torque 132,8 daNm [11755 lb-in]



mm [in]

ORDER CODE

1	2		3	4	5	6
L B		/		-				

Pos.1 - Type

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

Pos.2 - Design 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	- ø40 straight, Parallel key A12x8x70 DIN6885
CO	- ø1½" straight, Parallel key ⅜"x⅜"x2¼" BS46
SH	- ø1½" splined 17T, ANSI B 92.1-1976
K	- ø45 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 not be exceeded!

** 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. Fill the brake through the drain port **D** with 50 ÷ 120 cm^3 [3.05 ÷ 7.32 in^3] mineral oil HLP (DIN 51524) or HM (ISO 6743/4). LB/288 must be filled after the motor is assembled on the brake.
3. In all brakes, friction discs and separators should be lubricated.