

Slew planetary gear reducer

HPM H300 Series (BONFIGLI 300 Series Interchangeable)

Input Selection:

SERVICE FACTOR f_s						
Working condition	Type of drive unit	Number of starts (/hour)				
		16	32	63	125	250
Uniform load	Electric motor	1.00	1.10	1.15	1.25	1.4
	Hydraulic motor	1.00	1.00	1.10	1.15	1.20
	Endothermic engine	1.25	--	--	--	--
Moderate shock load	Electric motor	1.10	1.15	1.20	1.40	1.60
	Hydraulic motor	1.00	1.00	1.10	1.20	1.30
	Endothermic engine	1.50	--	--	--	--
Heavy shock load	Electric motor	1.20	1.30	1.40	1.60	1.80
	Hydraulic motor	1.10	1.20	1.25	1.35	1.50
	Endothermic engine	2.00	--	--	--	--

Match hydraulic motor:

Based on the specifications of gearbox input:

Input torque ----- M_{r1} (N.m)

Input speed----- n_1 (min⁻¹)

And on allowed pressure P (bar) for the hydraulic circuit, calculate the displacement of the hydraulic motor by

formula:

$$V_c = (20 \times n \times M_{r1}) / (P \times \eta_{mh}) \text{ cm}^3 \quad (F27)$$

Where η_{mh} is the hydraulic mechanical efficiency of the motor (Below Table).

Select a motor size with displacement V that satisfies the following condition:

$$V_c \leq V \quad (F28)$$

Calculate the flow required for the hydraulic motor

$$Q_1 = (V \times n_1) / \eta_v \times 1000 \text{ (l/min-1)} \quad (F29)$$

Duty	Light		Medium		Heavy	
Pressure (bar)	<175		175-200		200-450	
Motor design	Orbital	Gear motor	Radial piston	Axial piston	Cam motor	Axial piston
Speed (rpm)	Mean ≤ 700	High ≤ 3000	Mean ≤ 500	High ≤ 4000	Low ≤ 200	Mean ≤ 4000
η_{mh}	0.80	0.85	0.95	0.93	0.93	0.93
η_v	0.90	0.87	0.95	0.95	0.95	0.95

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HPM
GROUP

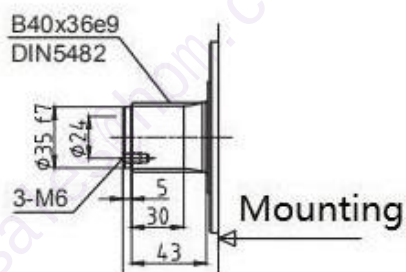
H301 (Bonfigli 301 Series interchangeable)

Technical data:

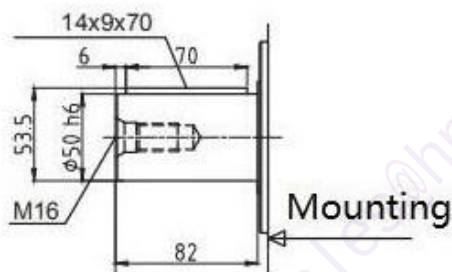
Model	ratio (i)	Rated torque (N.m)	Int. torque (N.m)	Speed (rpm)	Hydraulic motor	Static brack torque (N.m)	Output gear
H301L1	3.5-5.8	1750	2100	5-50	BMR	2300	m=6, z=14, x=0.5

Shaft selection:

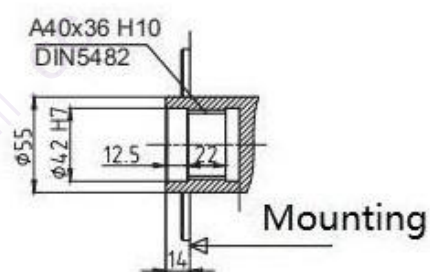
A Shaft



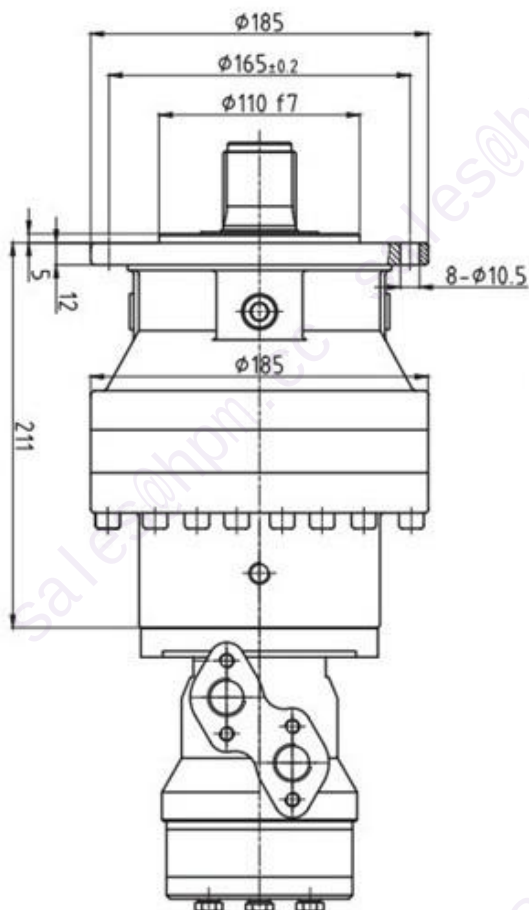
B Shaft



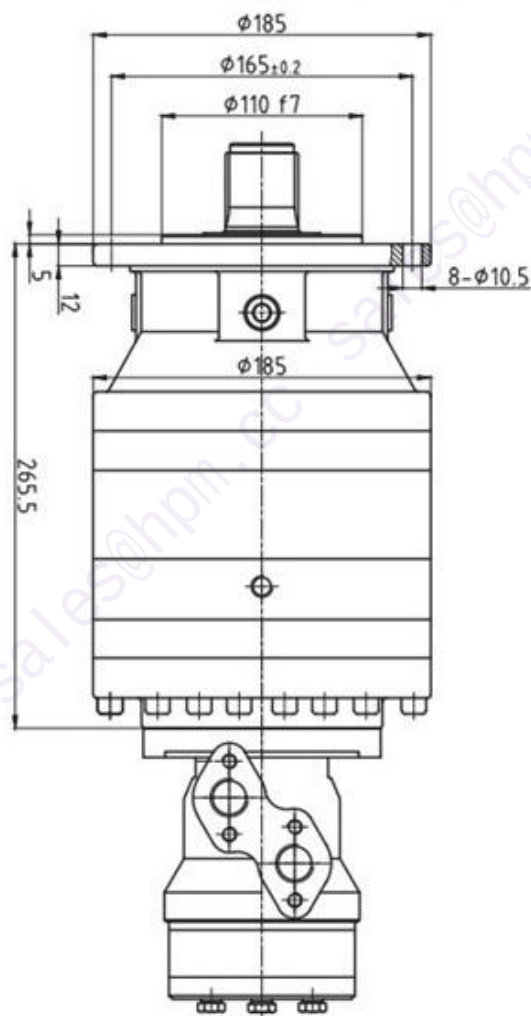
I Shaft



H301 L1 (1750 N.m) without brake



H301 L1 (1750 N.m) with brake

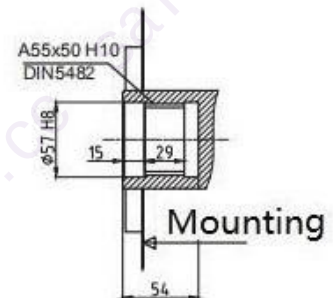
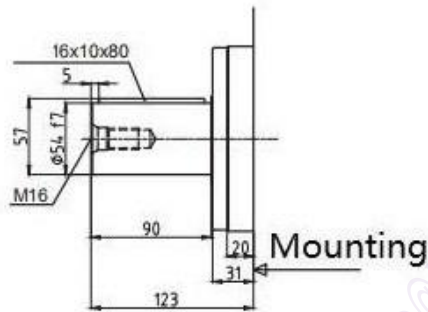


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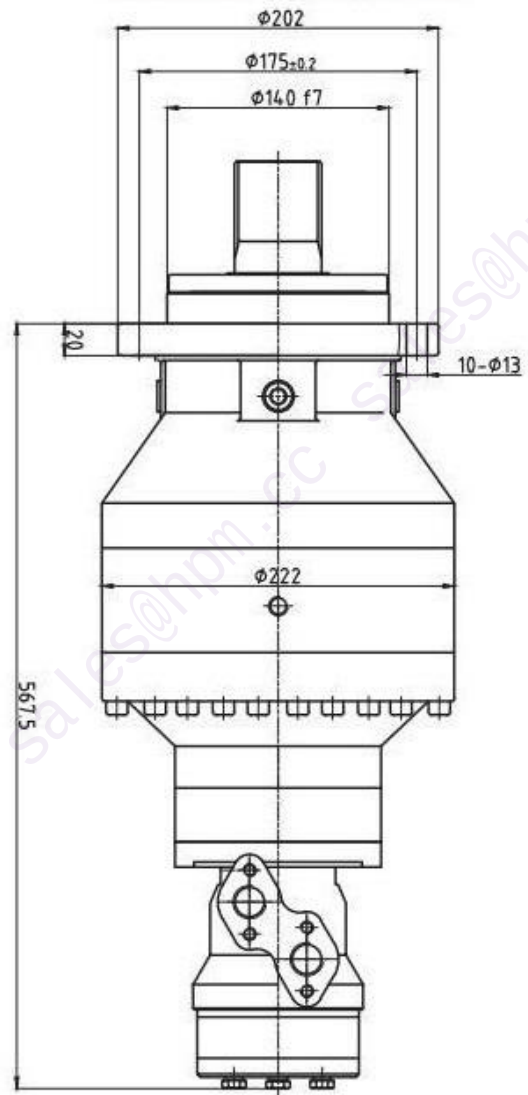
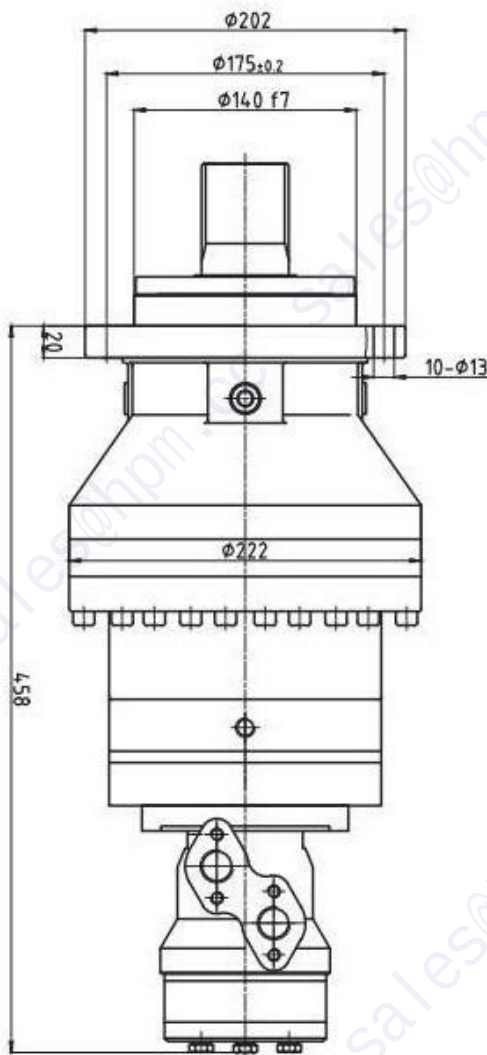
Shaft selection:

B Shaft

1 Shaft



H302 L2 (2800N.m)



Slew planetary gear reducer

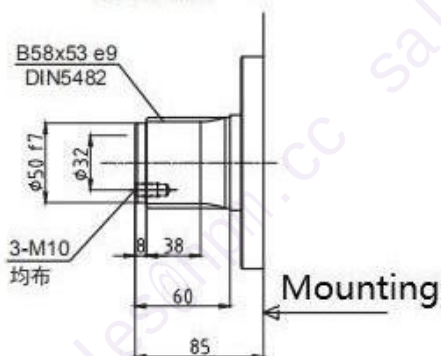
H305(Bonfigli 305 Series interchangeable)

Technical data:

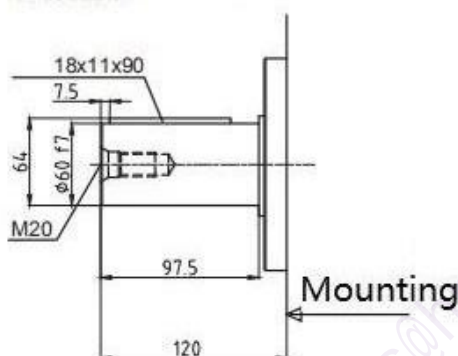
Model	ratio (i)	Rated torque (N.m)	Int. torque (N.m)	Speed (rpm)	Hydraulic motor	Static brack torque (N.m)	Output gear
H305L1	3.7-6.3	5000	6000	5-50	BMT	7500	m=8, z=15, x=0.5

Shaft selection:

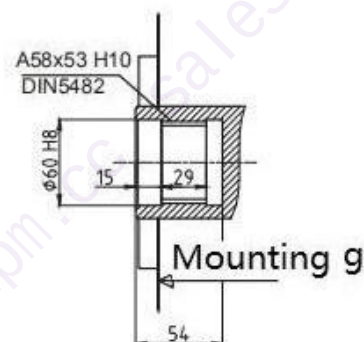
A Shaft



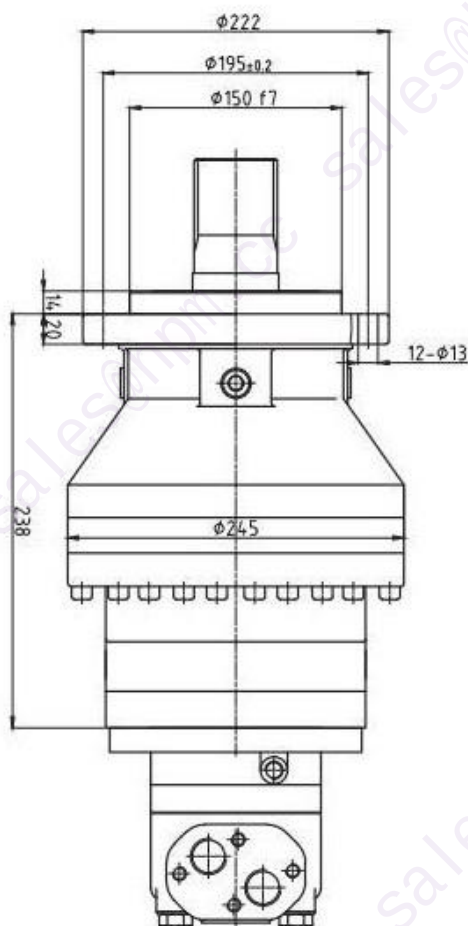
B Shaft



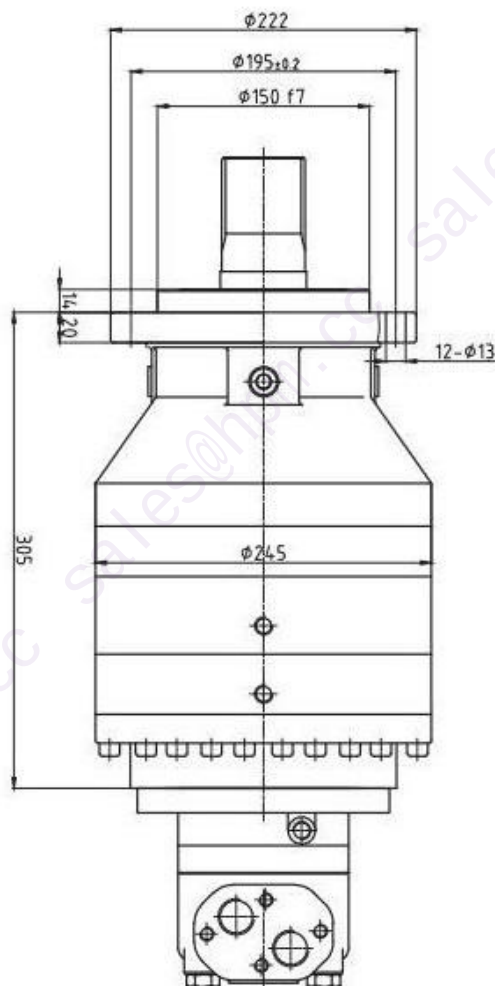
I Shaft



H305L1 (5000 N.m) without brake



H305L1 (5000 N.m) with brake



Slew planetary gear reducer

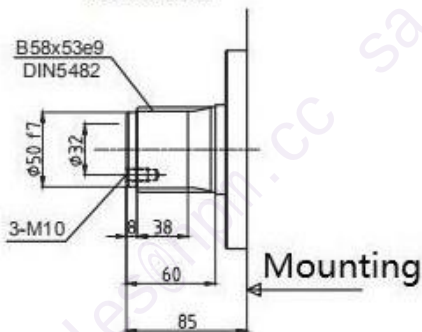
H305(Bonfigli 305 Series interchangeable)

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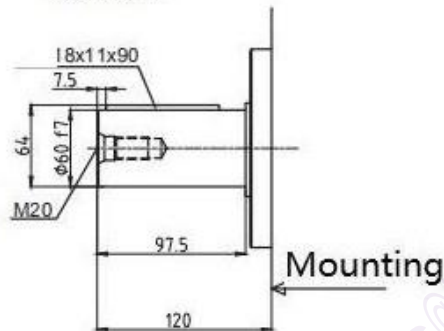
Model	ratio (i)	Rated torque (N.m)	Int. torque (N.m)	Speed (rpm)	Hydraulic motor	Static brack torque (N.m)	Output gear
H305L2	17.5-35	5000	6000	5-50	BMR	7500	m=8, z=15, x=0.5

Shaft selection:

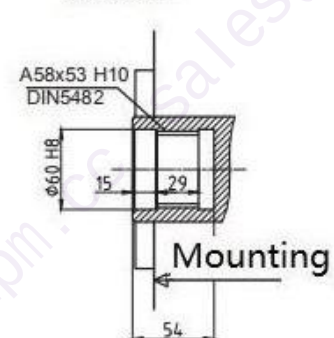
A Shaft



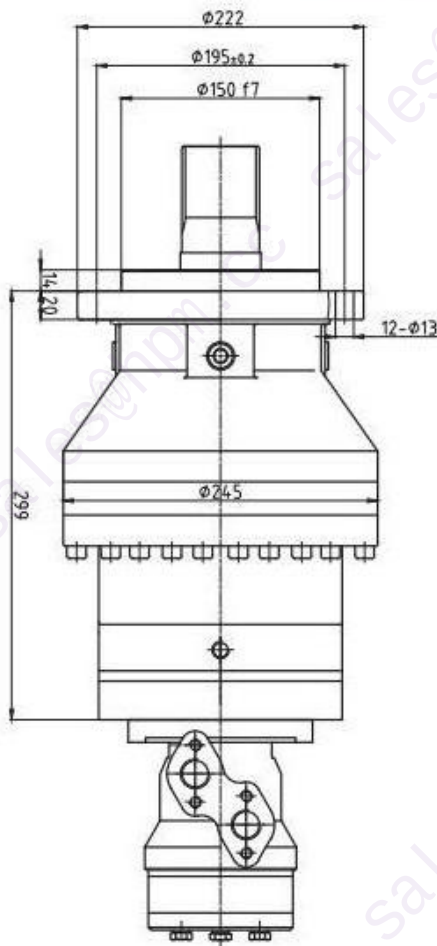
B Shaft



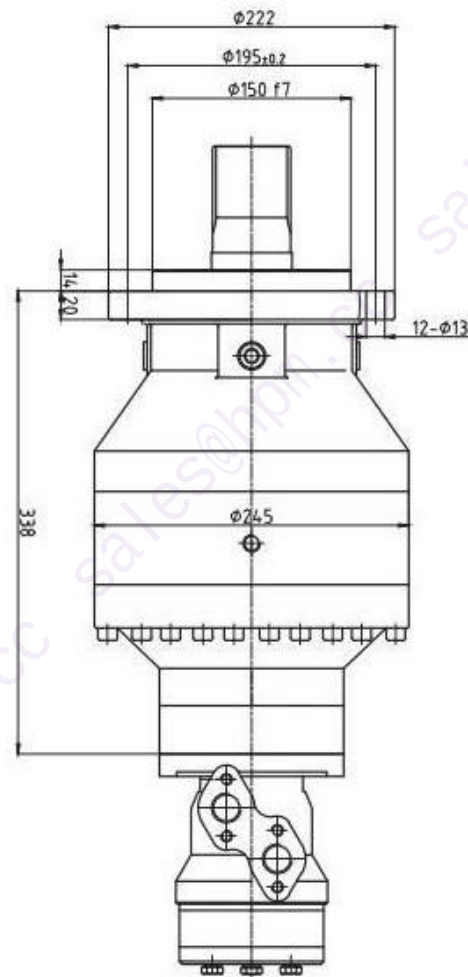
I Shaft



H305L2 (5000 N.m) without brake



H305L2 (5000 N.m) with brake



Slew planetary gear reducer

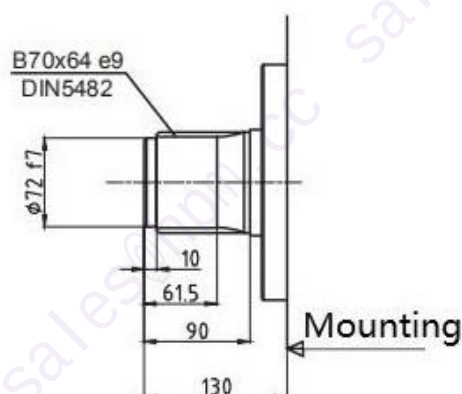
H306(Bonfigli 306 Series interchangeable)

Technical data:

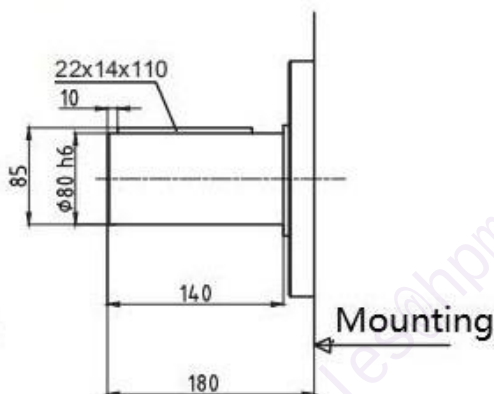
Model	ratio (i)	Rated torque (N.m)	Int. torque (N.m)	Speed (rpm)	Hydraulic motor	Static brack torque (N.m)	Output gear
H306L2	15.3-56.3	8000	10000	3-16	BMS	15000	m=12, z=14, x=0.5
H306L3	53.2-288	8000	10000	1-15	BMS	15000	m=12, z=14, x=0.5

Shaft selection:

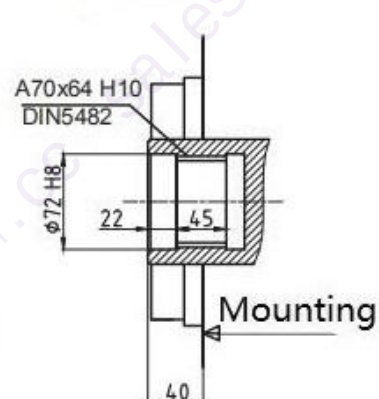
A Shaft



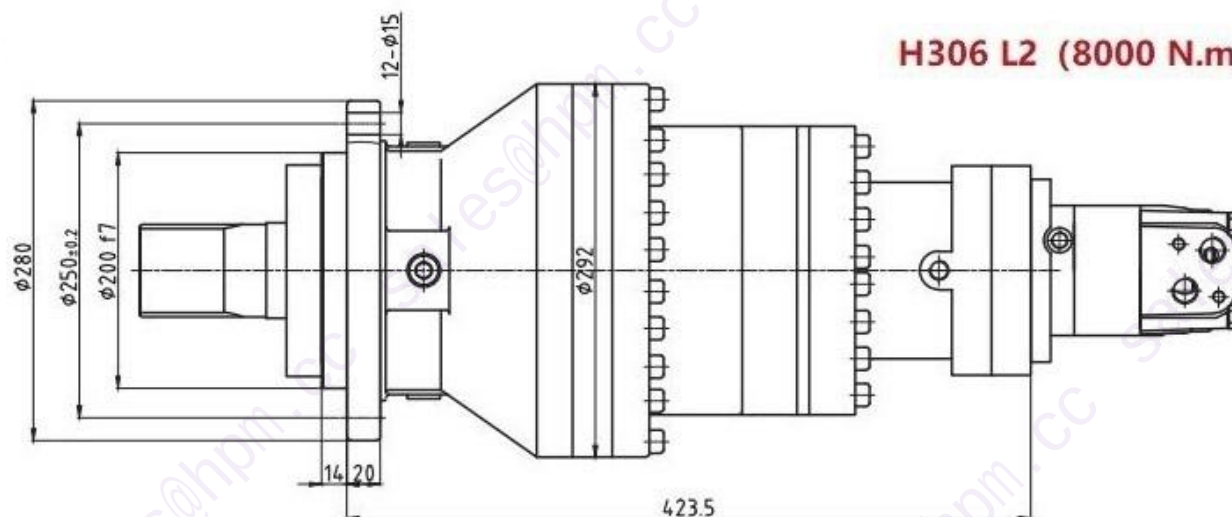
B Shaft



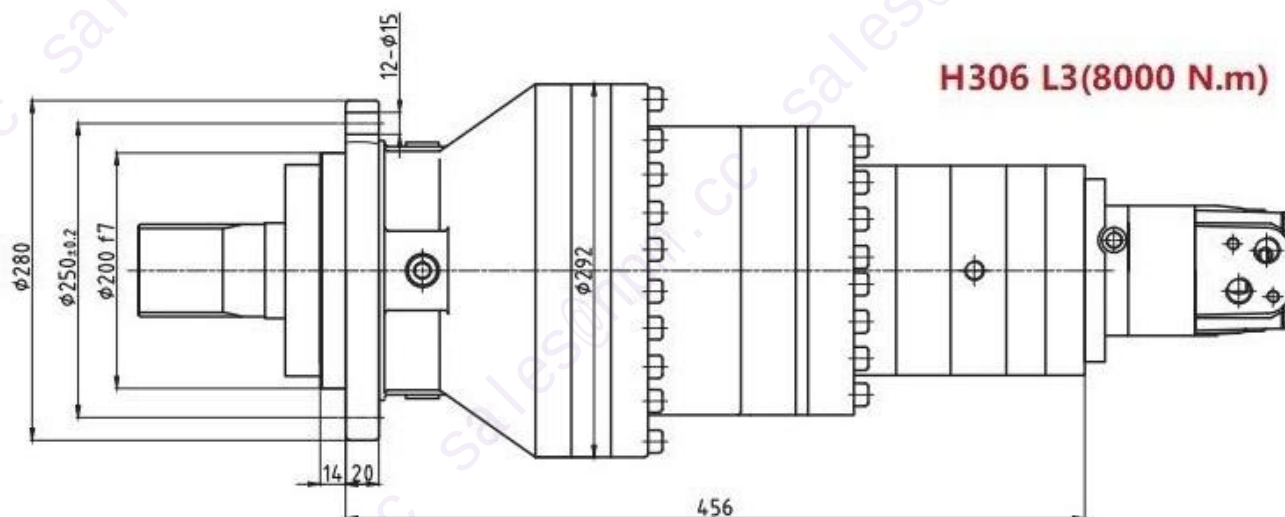
I Shaft



H306 L2 (8000 N.m)



H306 L3(8000 N.m)



Slew planetary gear reducer

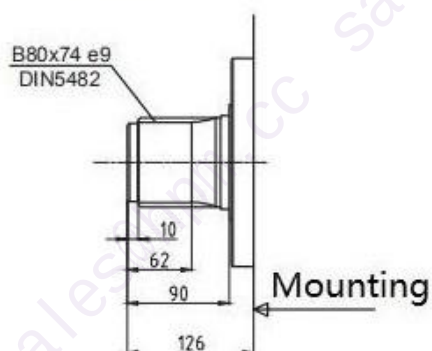
H307(Bonfigli 307 Series interchangeable)

Technical data:

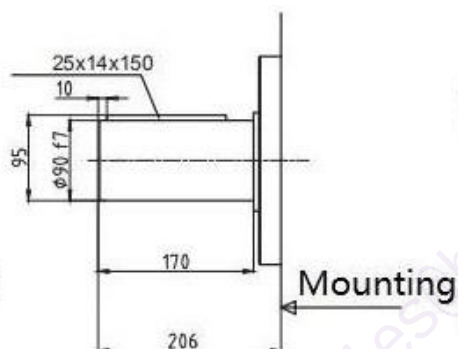
Model	ratio (i)	Rated torque (N.m)	Int. torque (N.m)	Speed (rpm)	Hydraulic motor	Static brack torque (N.m)	Output gear
H307L2	14.7-36.6	12500	15000	3-16	BMS	20000	m=14, z=14, x=0.5
H307L3	51.3-220	12500	15000	1-15	BMS	20000	m=14, z=14, x=0.5

Shaft selection:

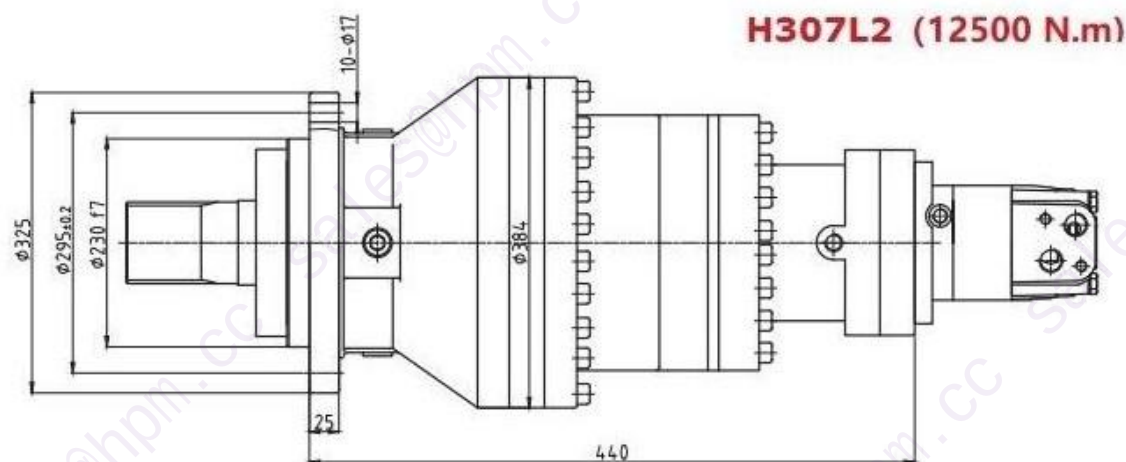
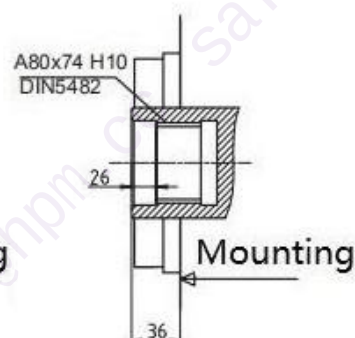
A Shaft



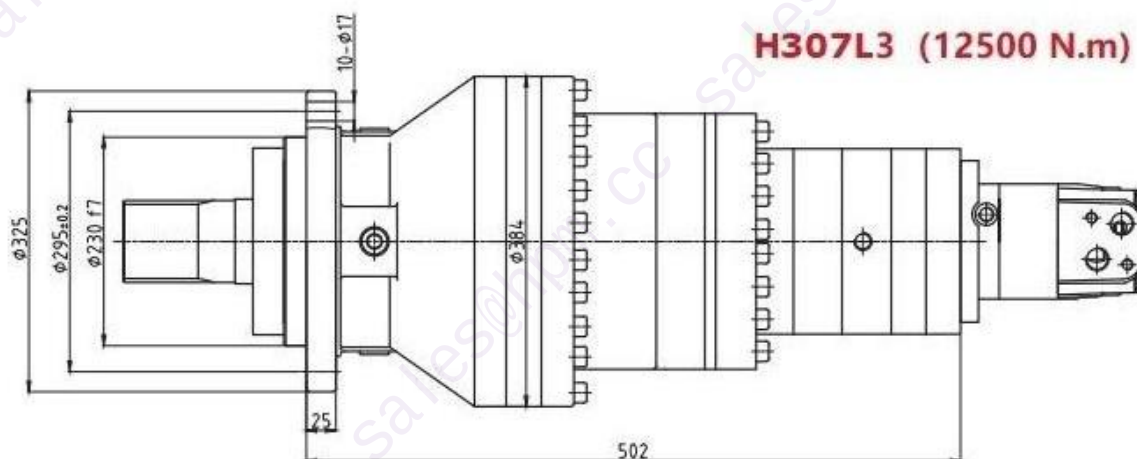
B Shaft



I Shaft



H307L2 (12500 N.m)



H307L3 (12500 N.m)