

Parking brakes Spring Applied Hydraulic Released

For High Torque piston motors

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hydraulics
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INTRODUCTION

The Calzoni brake series is a “spring applied - hydraulic release” multi-disc wet parking brake, that has been designed for those applications where it is absolutely necessary to hold the system under an external torque. The maximum braking torque is achieved when the brake is not fed.

Typical characteristics of the Calzoni brakes are:

- direct coupling with radial piston Calzoni motor types;
- compact design;
- thorough quality control and thorough material and product testing;
- double range of drum roller bearing for heavy external loads (on request);
- no oil refilling problem;
- lower braking torque units available on Customer request for torque limiting devices.

Application examples:

- winches;
- slewing drives;
- parking brake for track driving;
- mining industry;
- industrial applications.

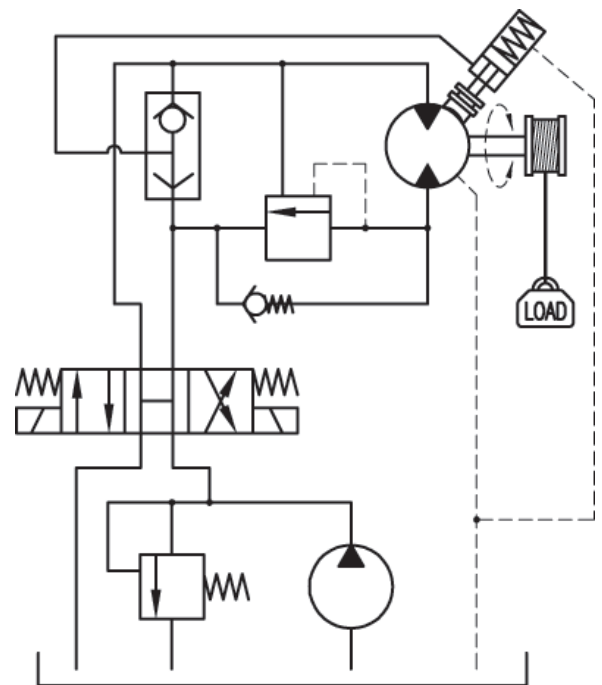
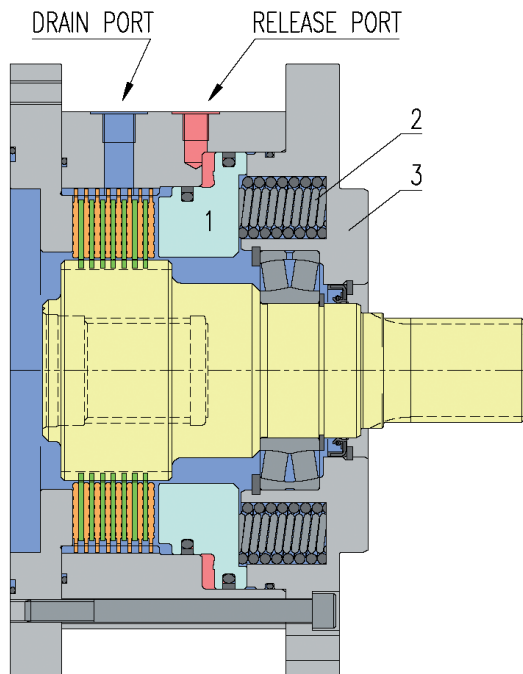
TECHNICAL TIPS

Hydraulic motors usually have a leakage connection, which means that a hydraulic motor can never hold a load for a long period without a pressure feeding. So, a mechanical brake is used to hold the load on the motor in place.

The brake is operated by a single-acting piston (1) with opposing springs (2) between the piston and the cap end (3). During load braking and stop, the springs press against the piston blocking the discs.

Hydraulic pressure is required to release or “hold off” the brake and during normal operation the brake is pressurized in the released position: any function which reduces the hydraulic system below the release pressure of the brake will cause the brake to be applied.

The picture below represents a typical hydraulic circuit where a brake is used to hold the load when no hydraulic pressure is used to feed the motor.



When the directional control valve is shifted, hydraulic pressure releases the mechanical brake and allows the load to be moved. When no feed pressure is supplied to the brake, the brake springs push the brake disks holding the load.

Parking Brakes For Calzoni HTLS (radial) Piston Motors

BRAKES DATA

CHARACTERISTIC			BRAKE SIZE								
			B190C	B300D	B450E	B700F	B1100G	B1800H	B2800I	B4500L	B7000M
Static braking torque	Max.	Nm	1500	1900	3200	4500	7100	12000	18300	30800	46200
	Min.	Nm	1400	1700	2900	4000	6000	10300	15200	27000	37900
Dynamic braking torque	Max.	Nm	1000	1200	2100	2900	4500	7700	11700	19800	29700
	Min.	Nm	900	1100	1900	2700	4100	7000	10400	18200	26100
Release pressure		bar	30	30	30	30	30	27	30	30	30
Max. continuous release pressure		bar	250								
Max. peak release pressure		bar	420								
Max. speed		rpm	1250	1000	850	700	580	500	370	260	260
Weight		Kg	27	29	69	75	78	176	225	460	652
Inertia of rotating parts		kg m ²	0,0046	0,0057	0,021	0,025	0,041	0,14	0,16	0,73	0,91
Working volume	New	cm ³	17	17	30	30	36	47	64	98	91
	Wear	cm ³	34	36	53	63	94	115	158	202	247

IMPORTANT NOTES:

The braking force values are based on coefficient friction $\mu = 0.14$.

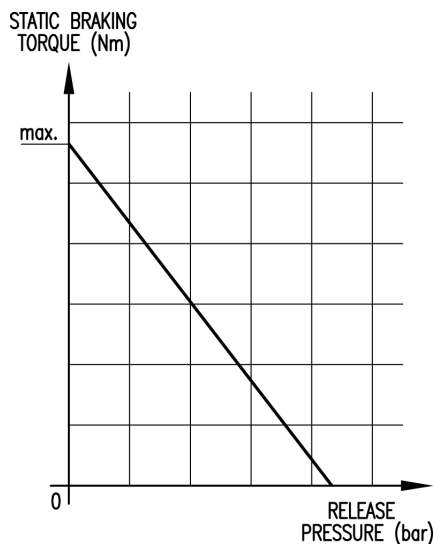
The brake can be used in dynamic conditions only in case of emergency (pump failure).

The release pressure represents the pressure value to completely release the brake.

For correct operations, the hydraulic release pressure to the brake must fall to zero. Any residual release back pressure applied to the brake, as shown in the graph below, will degrade braking torque and may result in hazardous conditions.

The brakes are suitable for wet operation (please contact Parker Hannifin in case dry operation are required).

When intending to use low flammable liquids and bio-oils please consult Parker Hannifin.



Parking Brakes For Calzoni HTLS (radial) Piston Motors

BRAKE SELECTION

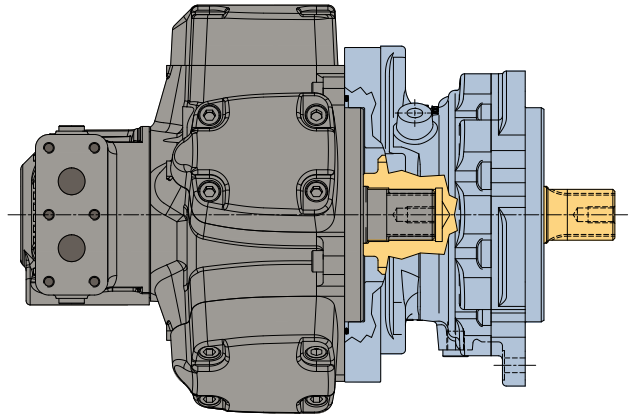
For ordering information you should select:

- brake size;
- brake input shaft;
- brake output shaft ;
- seal type.

The brake size has to be selected according to the required braking torque. The static braking torque has to be greater than the required torque. The brakes in this catalogue are suitable for direct coupling with Parker Calzoni radial piston motors: in this case the brake size can be selected according to the motor size (see table below).

The brake input shaft has to be selected according to the motor shaft (see overall dimension drawings). In case the motor is a Calzoni radial piston type, the shaft code is the same of the brake input shaft code.

The brake output shaft can be selected according to the application the brake has to be assembled with.

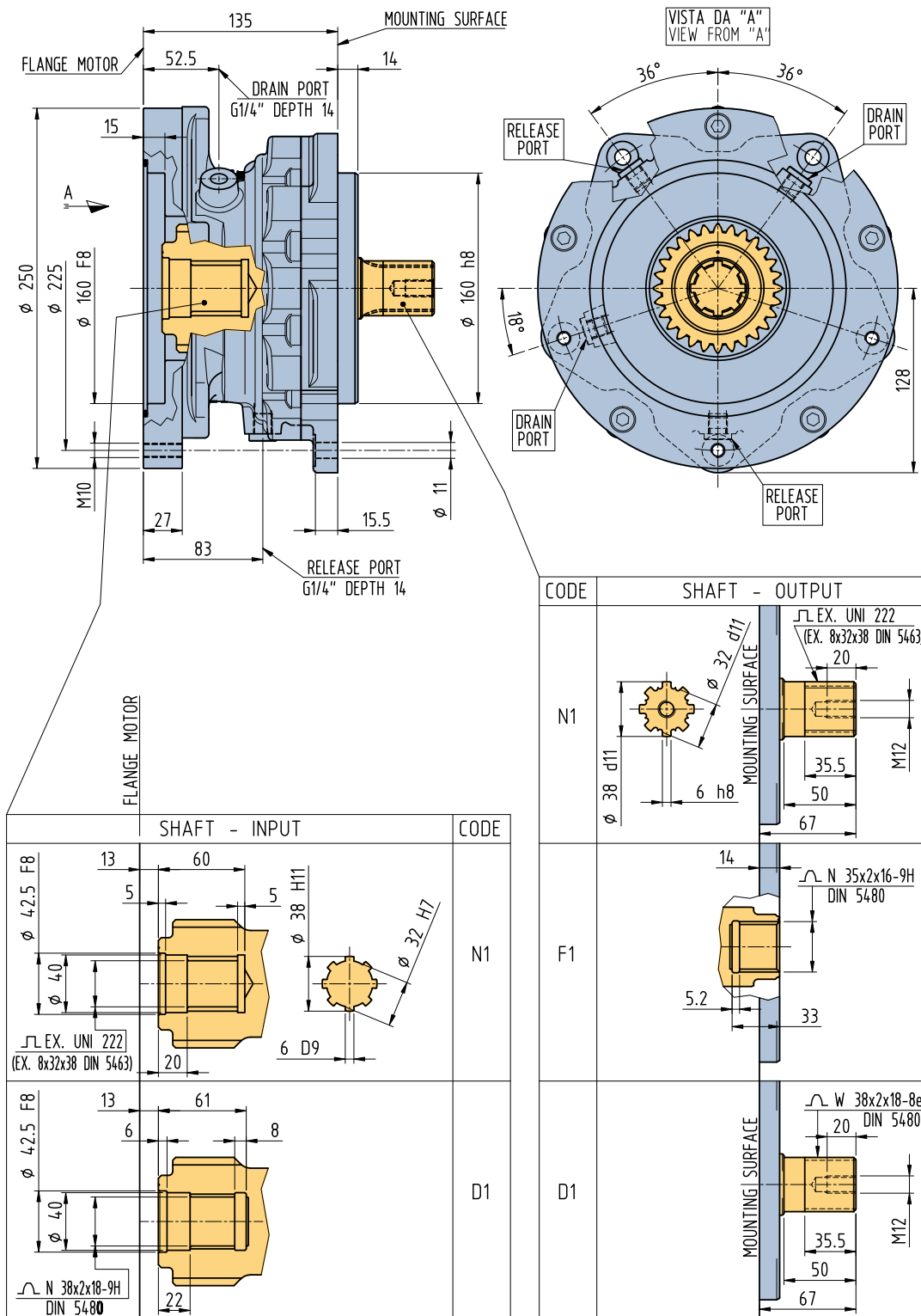


Assembly example with radial piston motor:
Motor MR1100G-**N1** ... (motor shaft code N1)
Brake B1100G-**N1** ... (brake input shaft code N1)

RADIAL PISTON MOTOR COUPLING

BRAKE SIZE	Suitable for radial piston motor type
B190C	MR125C ...
	MR160C ...
	MR190C ...
B300D	MR200D ...
	MR250D ...
	MR300D ...
	MRE330D ...
	MRA400D ...
	MRD300D ...
	MRDE330D ...
B450E	MR305E ...
	MR450E ...
	MRE500E ...
	MRD450E ...
	MRDE500E ...
B700F	MRV450E ...
	MR600F ...
	MR700F ...
	MRE800F ...
	MRD700F ...
	MRDE800F ...
	MRV700F ...
MRVE800F ..	
B1100G	MR1100G ...
	MRE1400G ...
	MRA1600G ...
	MRD1100G ...
	MRDE1400G ...
MRV1100G ...	
MRVE1400G ...	

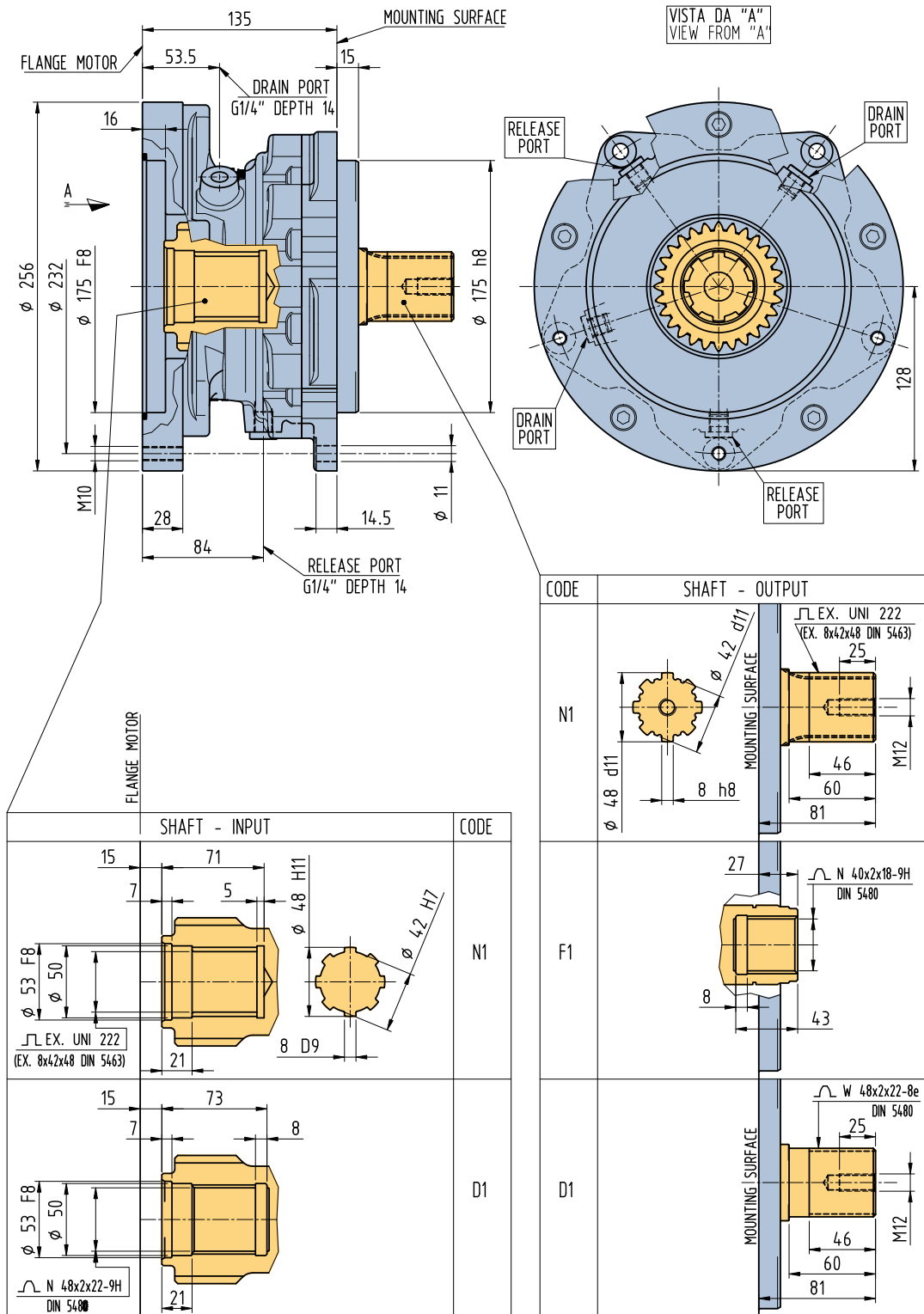
BRAKE SIZE	Suitable for radial piston motor type
B1800H	MR1600H ...
	MR1800H ...
	MRE2100H ...
	MRA2400H ...
	MRD1800H ...
	MRDE2100H ...
	MRV1800H ...
MRVE2100H ...	
B2800I	MR2400I ...
	MR2800I ...
	MRE3100I ...
	MRA3500I ...
	MRD2800I ...
	MRDE3100I ...
B4500L	MRV2800I ...
	MRVE3100I ...
	MR3600L ...
	MR4500L ...
	MRE5400L ...
	MRA6000L ...
	MRA6300L ...
MRD4500L ...	
B7000M	MRDE5400L ...
	MRV4500L ...
	MRVE5400L ...
	MR6500M ...
	MR7000M ...
	MRE8200M ...
	MRD7000M ...
MRDE8200M ...	
MRV7000M ...	
MRVE8200M ...	



ORDERING INFORMATION

B190C	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

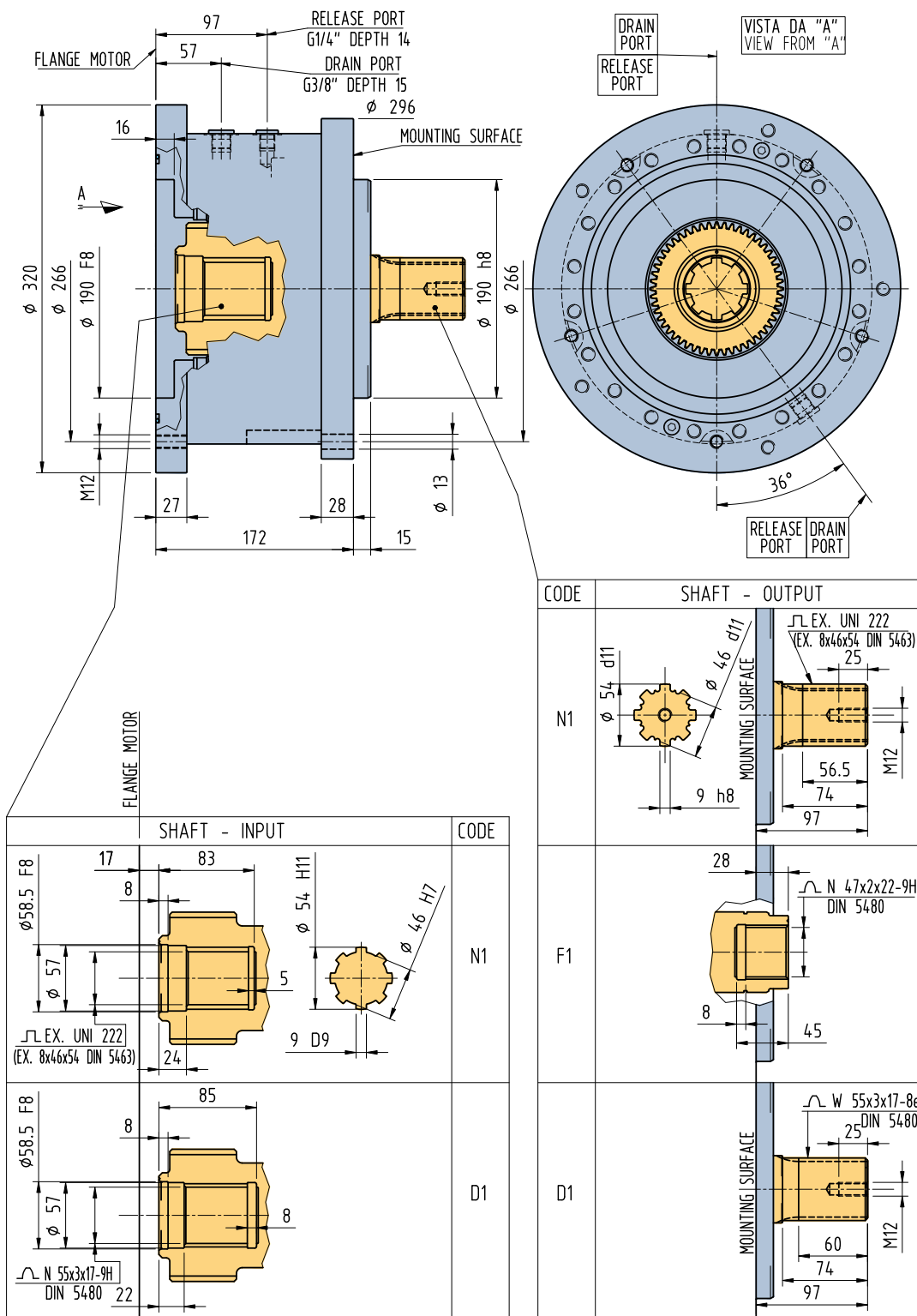
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B300D	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

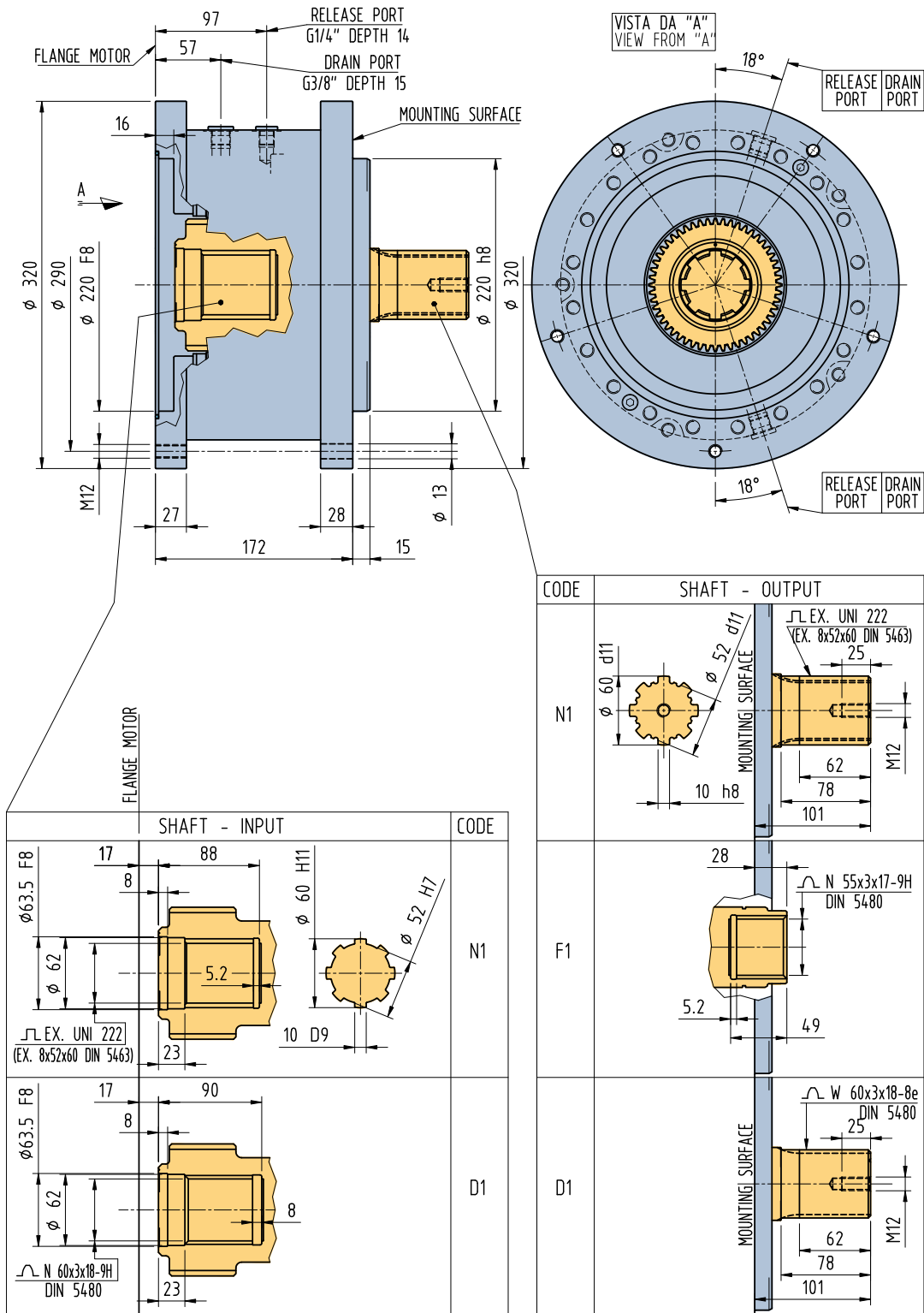
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B450E	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

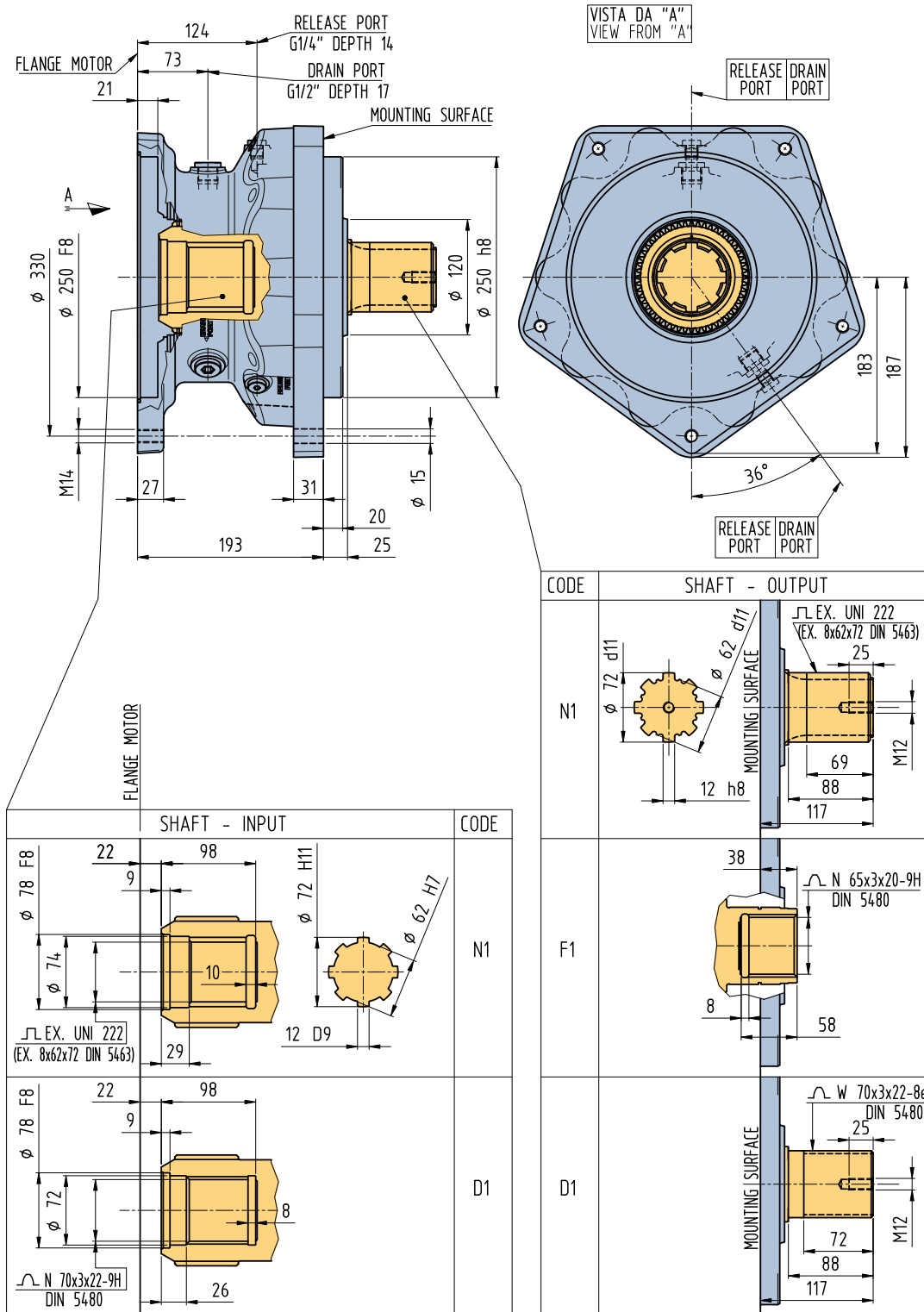
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B700F	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

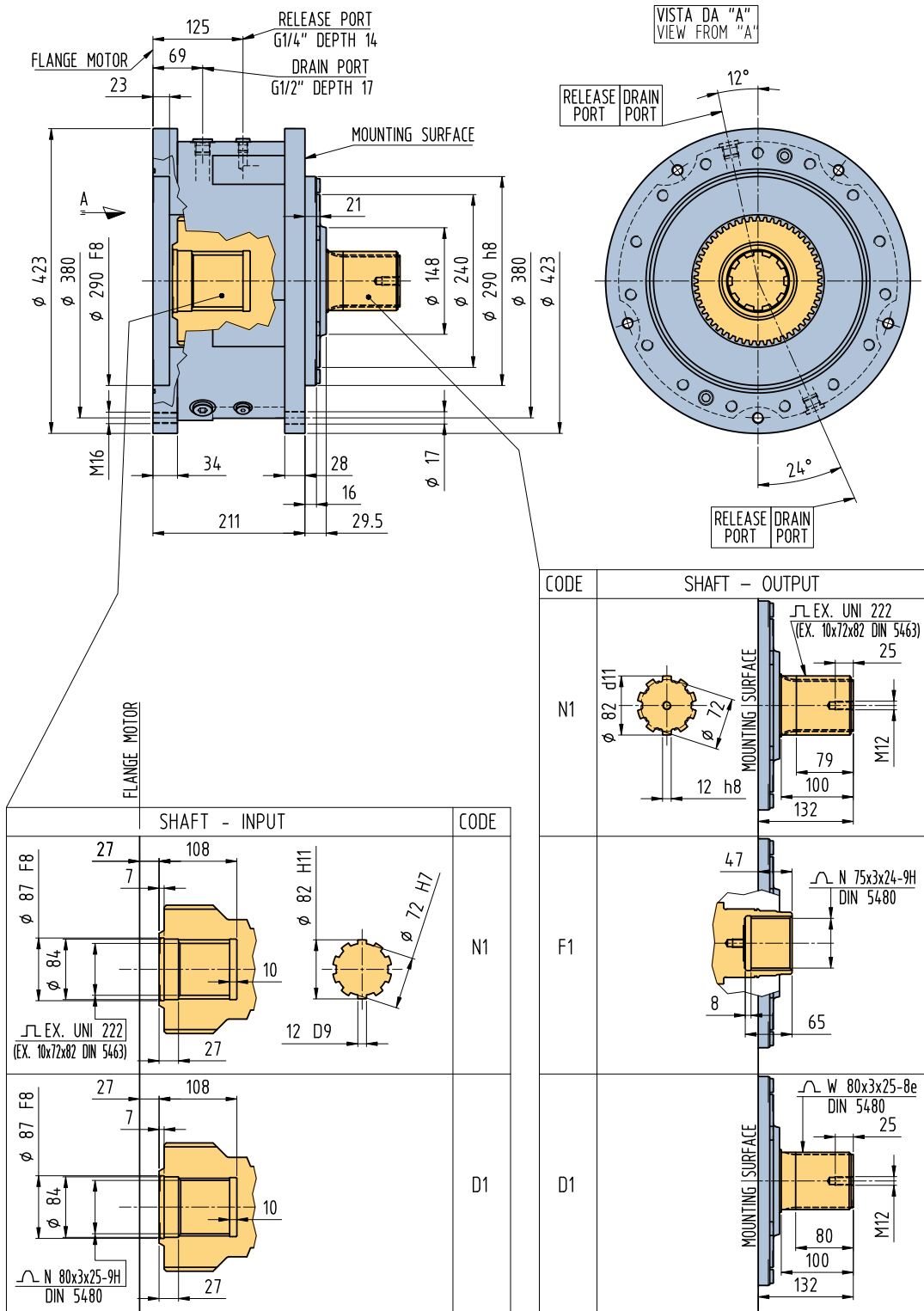
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B1100G	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

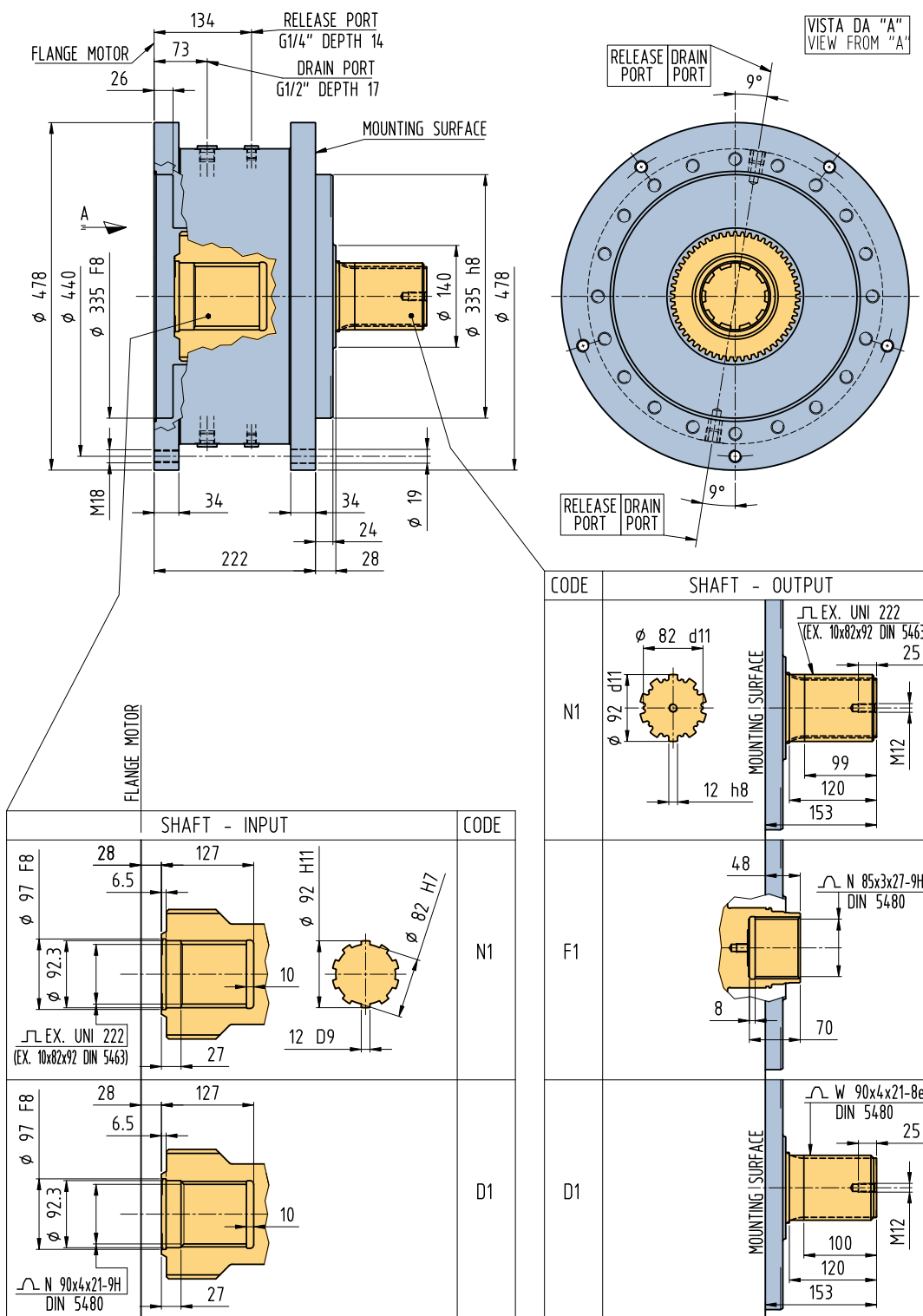
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B1800H	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

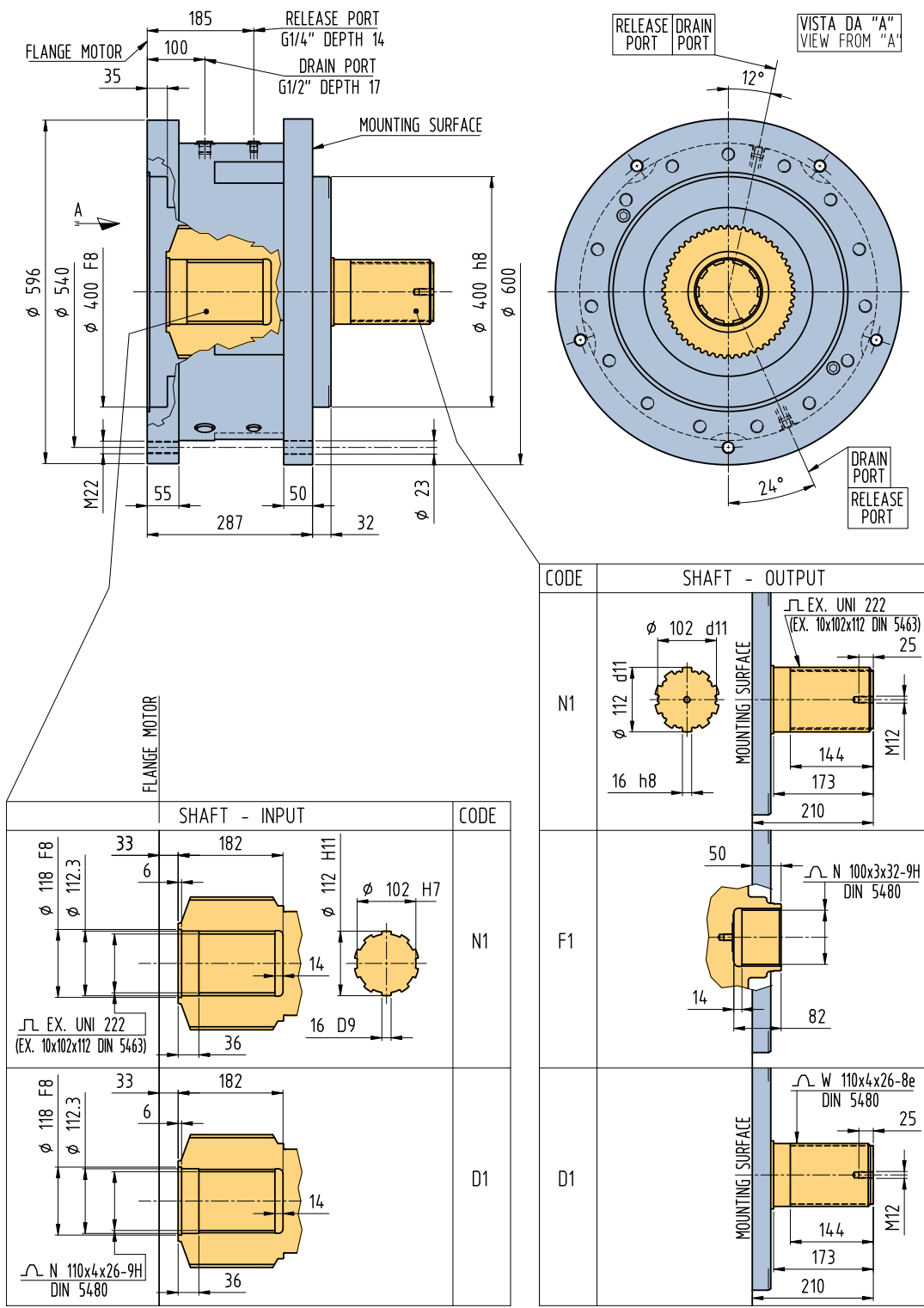
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B2800I	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

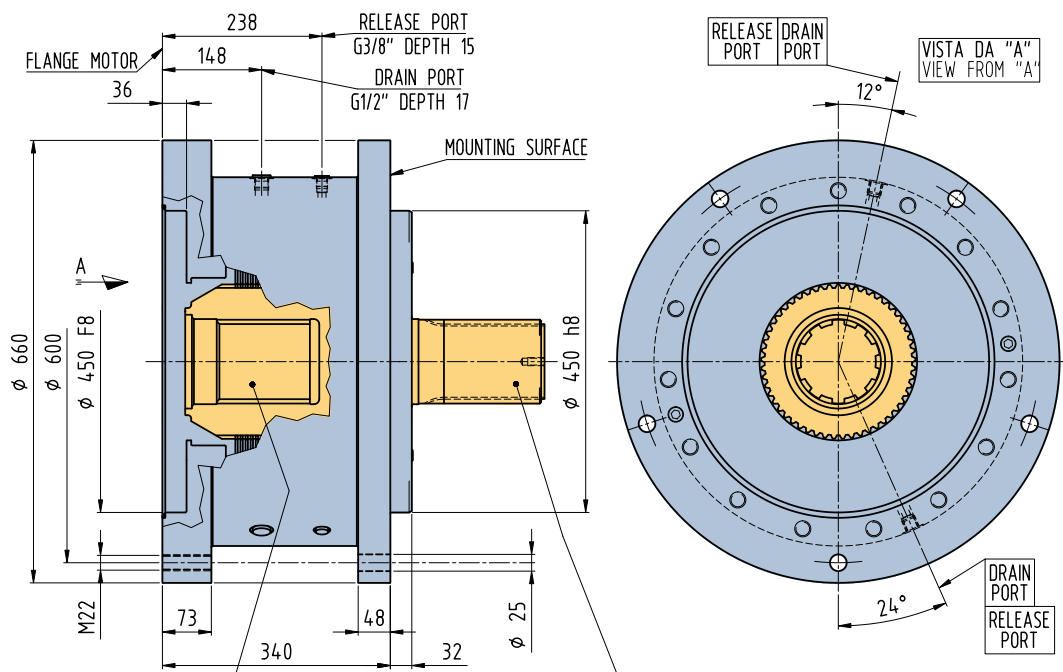
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



ORDERING INFORMATION

B4500L	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal



SHAFT - INPUT		CODE
<p>34 200 10 139.9 F8 127 14 18 D9 4.7 125 H11 112 H7</p> <p>EX. UNI 222 (EX. 10x112x125 DIN 5463)</p>	N1	
<p>34 200 10 139.9 F8 127 14 4.7 120x4x28-9H DIN 5480</p>	D1	

CODE	SHAFT - OUTPUT
N1	<p>EX. UNI 222 (EX. 10x112x125 DIN 5463)</p> <p>112 d11 25 150 188 230 125 d11 18 h8 14 18 25 M12</p>
F1	<p>50 14 90 N 110x3x35-9H DIN 5480</p>
D1	<p>W 120x4x28-8e DIN 5480</p> <p>153 188 230 25 M12</p>

ORDERING INFORMATION

B7000M	-			
BRAKE TYPE	-	SHAFT OUTPUT	SHAFT INPUT	SEAL TYPE

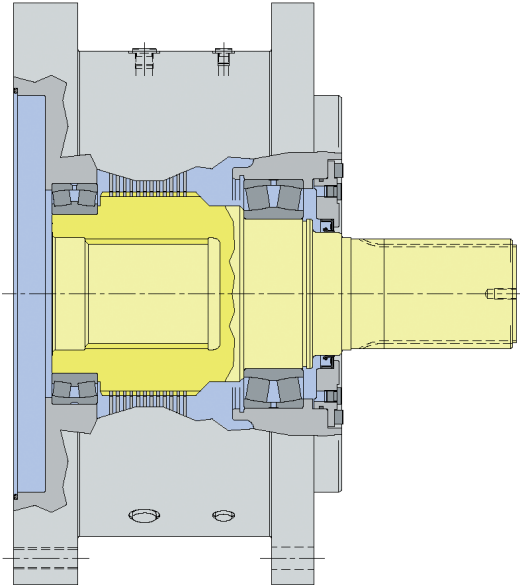
CODE	SEAL TYPE
N1	NBR: mineral oil
V1	FPM seal

Parking Brakes For Calzoni HTLS (radial) Piston Motors

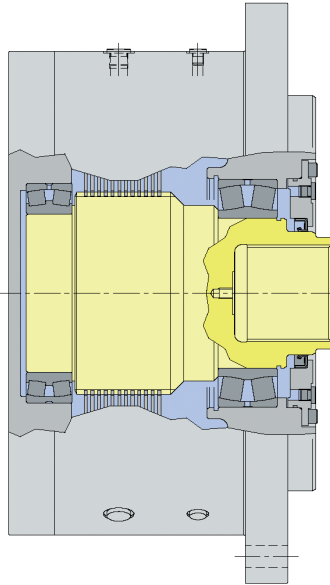
CUSTOMIZATIONS

Brakes can be customized on customer request. Please consult Parker Hannifin for different mounting flanges and shaft dimensions, high radial and axial load capacity, and configuration not included in this catalogue.

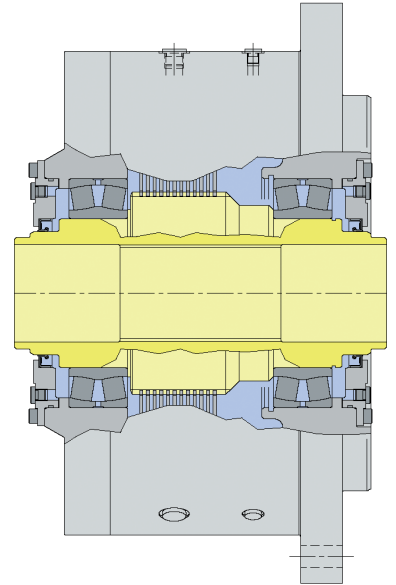
In the pictures below some example solutions for customer requests with customized brakes are shown.



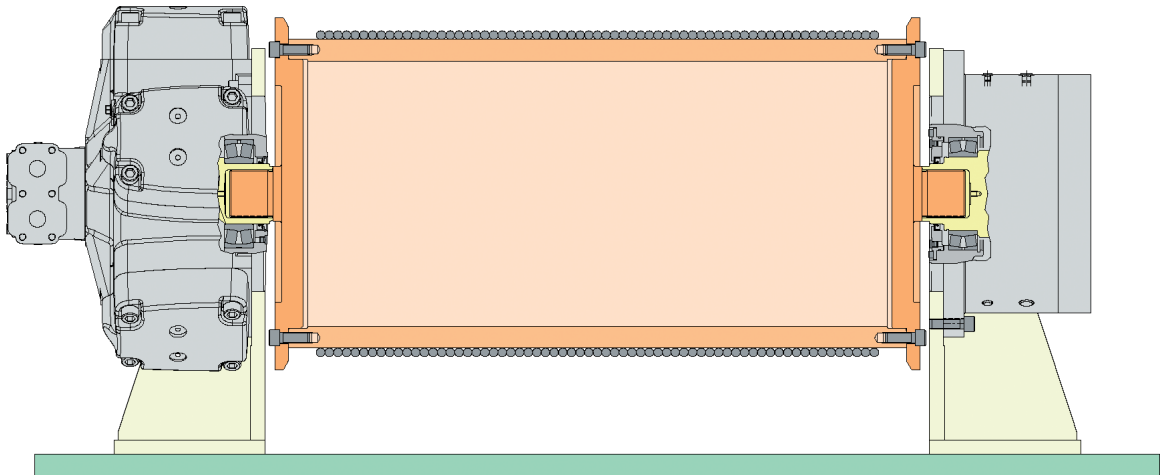
Brake with high capacity bearings for radial load support.



Brake with high capacity bearings for radial load support and only one spline.



Brake with high capacity bearings for radial load support and through shaft.



Direct mounted winch drum drive and brake (high capacity bearings for radial load support).

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