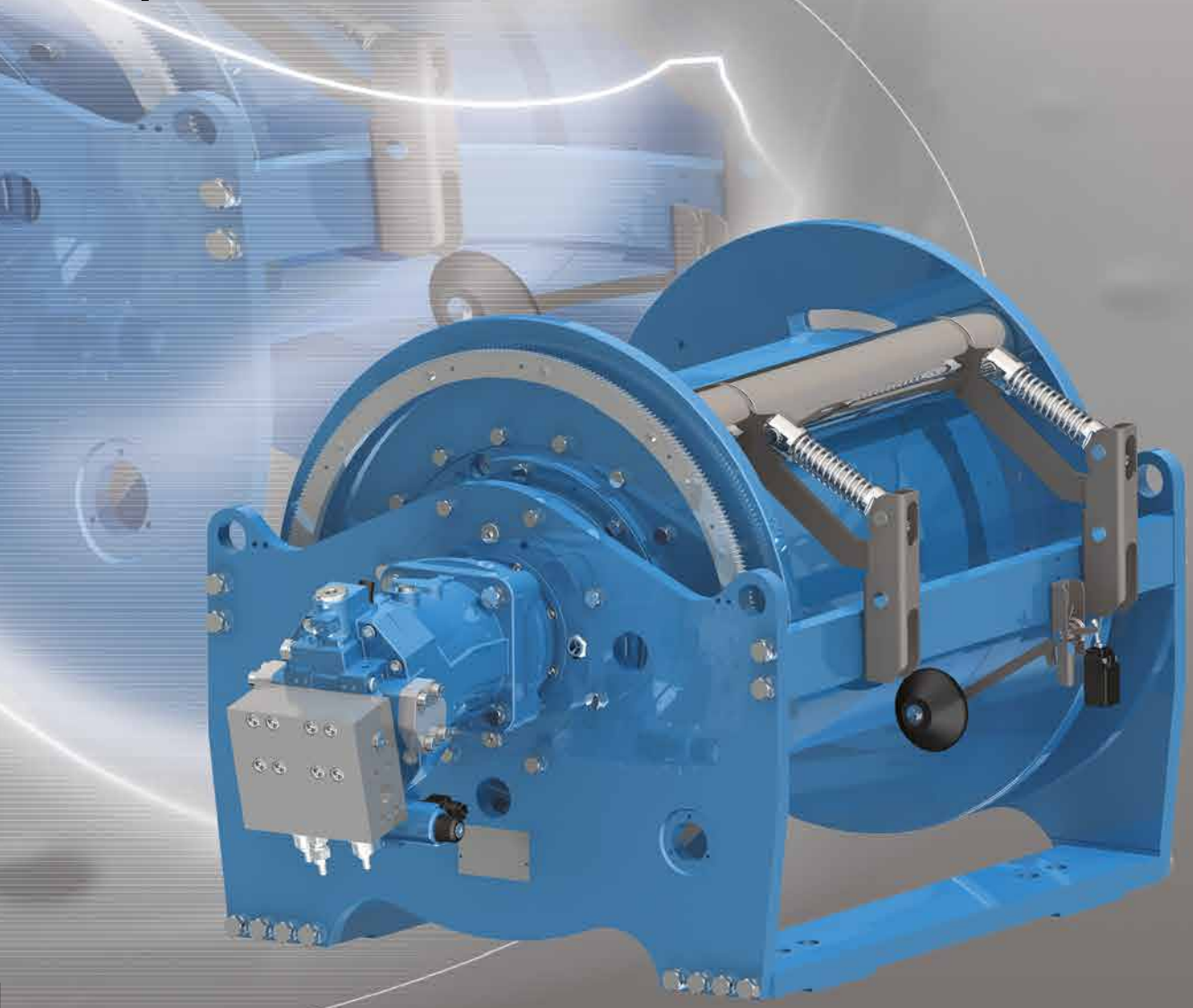
DANA BREVINI Motion Systems

Brevini® Evolution™ Series Hoisting Winches

The new Winch Series for Mobile and Industrial Markets



Brevini® Evolution™ Series Hoisting Winches

The new Winch Series for Mobile and Industrial Markets

DANA

DANA
BREVINI®
Motion Systems

Brevini® Evolution™ Series Hoisting Winches

The brand new series of high-performance Brevini® winches for construction and material-handling vehicles, marine, off-shore and many other mobile or stationary applications are the result of years of experience in Engineering and Manufacturing of winches.

With 4 new sizes available, BWE085, BWE105, BWE125 and BWE160 whiches offer a lifting capacity from 8,5 ton to 16 ton (18,700 lbf to 35,200 lbf) we will enhance the product range and give us the opportunity to gain new customer, application and market share.

Brevini® Evolution™ Series Winches feature the Brevini® high-speed piston motor, fixed or variable displacement, for efficient and smoothness. Introducing the nine piston motor technology as a standard option we are able to provide ideal balance and smooth control even at very low speed keeping high performance level.

The new winch series has a strong modular design that makes the winch able to meet customer specification in terms of performances as well as customer needs in term of accessories.

For all sizes are available grooved drum made by the special groove profile which improve the spooling performances, rope capacity as well as rope lifetime.

A wide range of accessories are available to improve safety and control of all winch function.

For all sizes are available pressure roller, hydraulic or electric limit switch as last safety wraps indicator, electric or hydraulic rotary limit switch as minimum and maximum rope capacity indicator, speed sensor to have better control on spooling and other winch operation.

For all sizes is available the “Personnel Lifting” version due to a secondary brake directly connected to the drum which assure safety and control in all working condition.

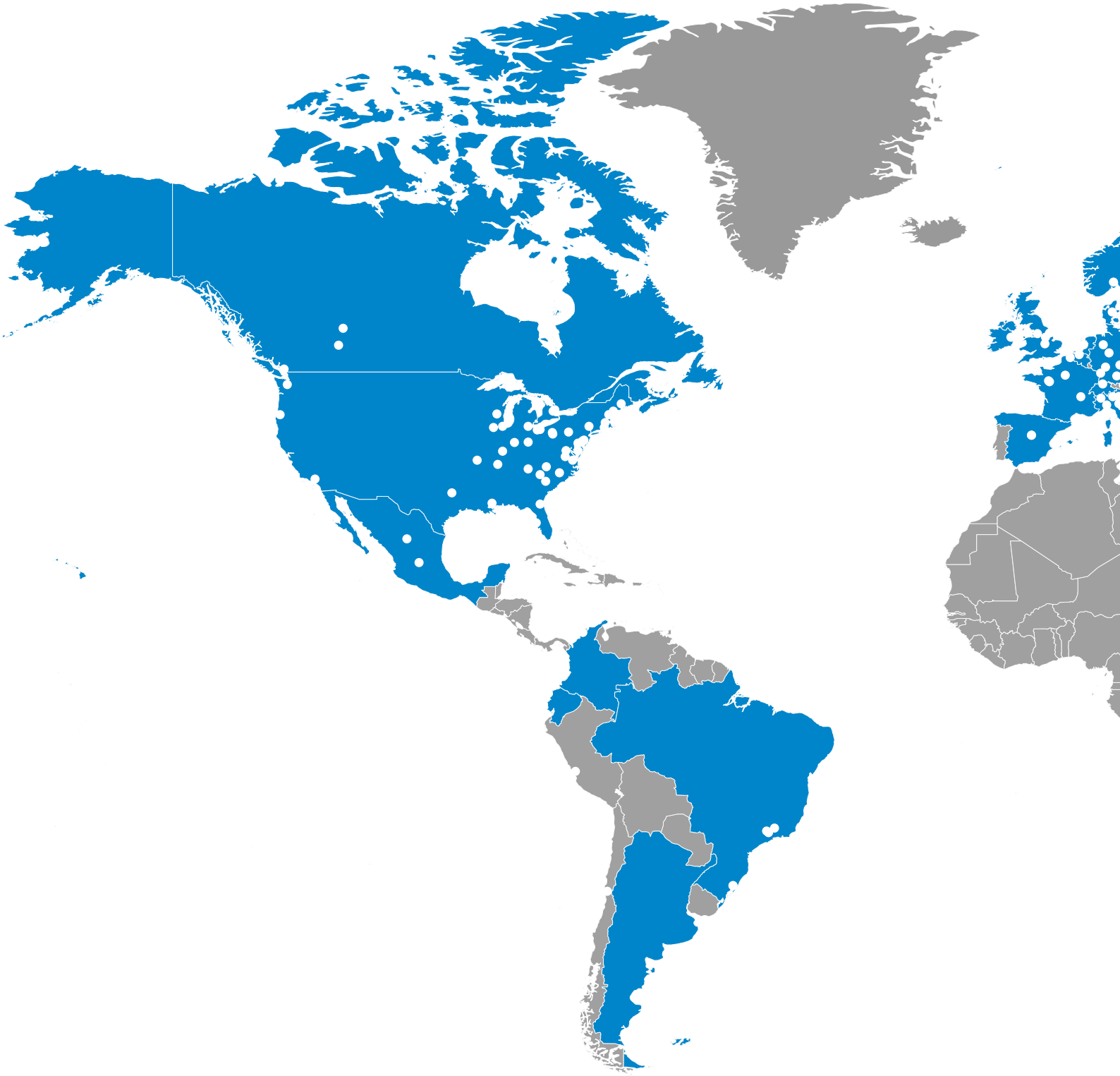
Other accessories like rope, hook and shackle are available to meet customer requirements.

The new winch series are suitable for marine environment due to many technical features which makes the winch the perfect solution for this application, drum and frame in steel, pressure roller made in stainless steel, marine painting.

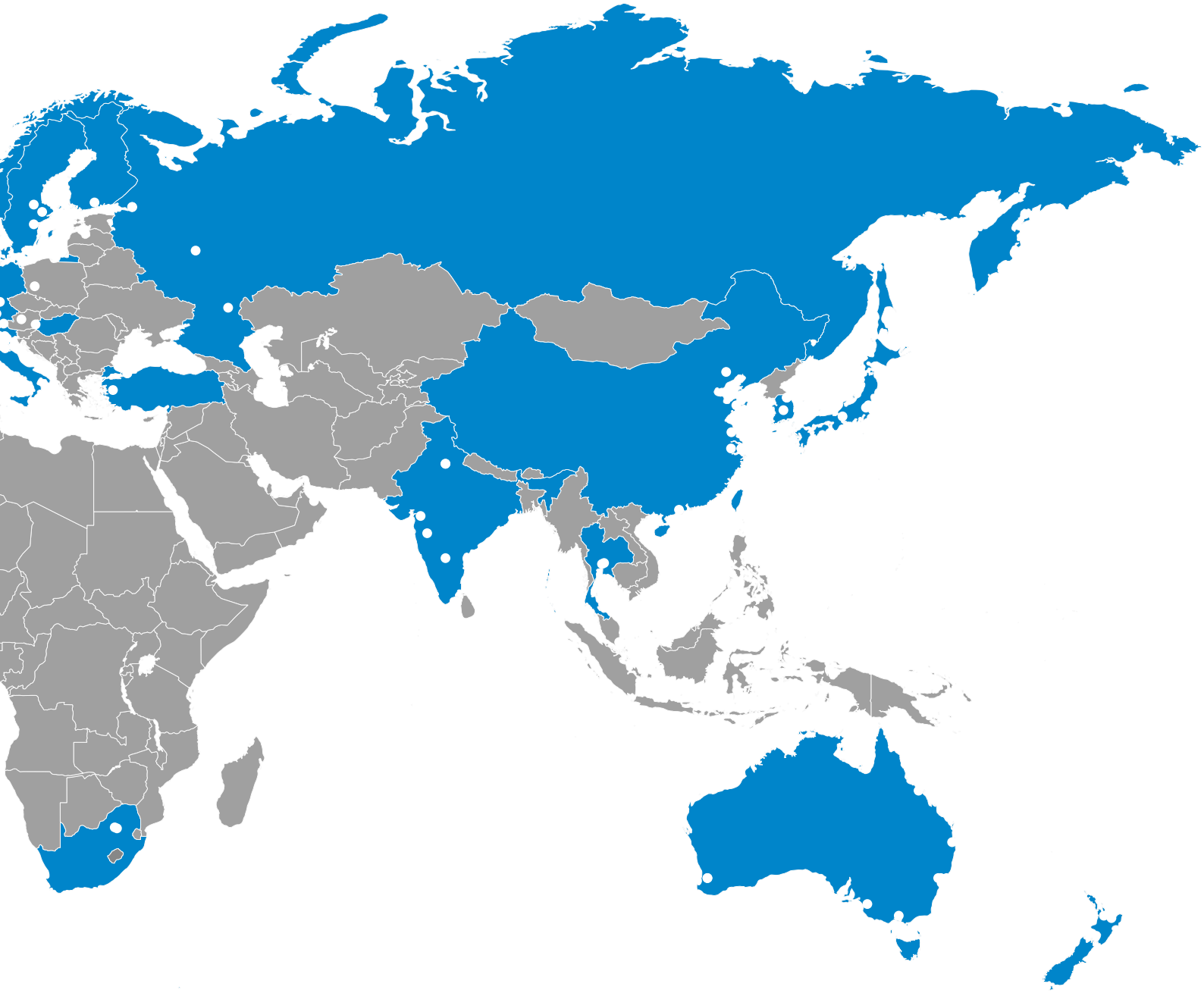
The winches are designed to meet safety certification standards for major international organizations governing these applications. Brevini® winches are suitable for working Temperature between -20°C to +50°C. In case of working temperature lower than -20°C is necessary to indicate it in the request. Different working condition on request.

More than 40 years of winches experience makes this new winch series an innovative and high-performance products ideal for the new generation of machine.

Dana Off-Highway



Global Presence



DANA
BREVINI®
Motion Systems

Index

Main Mobile Application

Rough-Terrain Crane

Crawler Telescopic boom Crane

Piling Rig

All Terrain Crane

Main Industrial Application

Stacker and Reclaimer

Off-Shore Cranes

Drill Rig

Marine Cranes

Harbor Crane

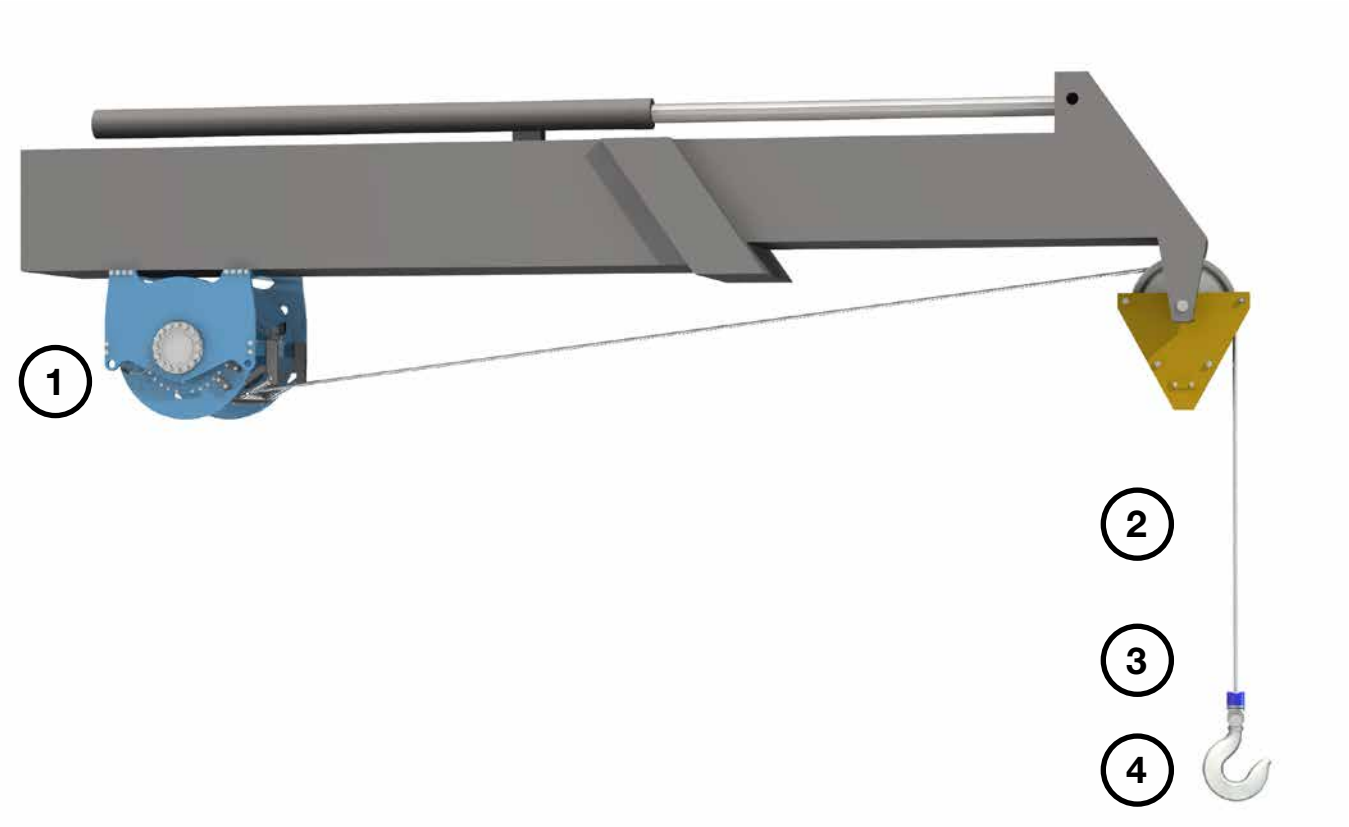
Table N° 1

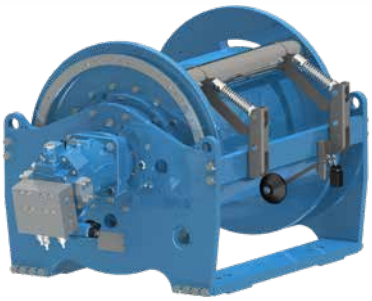
Crane type classification guide		According to FEM section I, 3rd edition, Table T.2.1.3.5	
Type of crane	**Type of duty**	**Type of mechanism**	
		Hoisting	Luffing
Erection cranes		M2 - M3	M1 - M2
Loading bridge cranes	Hook duty	M5 - M6	-
	Grab or magnet duty	M7 - M8	-
Workshop cranes		M6	-
Overhead travelling cranes, pig-breaking cranes, scrapyard cranes	Grab or magnet duty	M8	-
Bridge cranes for unloading, bridge cranes for containers Other bridge cranes (with crab, and/or slewing jib)	a) Hook or spreader duty	M6 - M7	M3 - M4
	b) Hook duty	M4 - M5	-
Bridge cranes for unloading, bridge cranes (with crab, and/ or slewing jib)	Grab or magnet duty	M8	M3 - M4
Dry dock cranes, shipyard jib cranes, jib ceanes for dismantling	Hook duty	M5 - M6	M4 - M5
Dockside cranes (slewing, on ganty, etc.), floating cranes and pontoon derricks	Hook duty	M6 - M7	M5 - M6
	Grab or magnet duty	M7 - M8	M6 - M7
Floating cranes and pontoon derricks for very heavy loads (usually greater than 100 t)	Hook duty	M3 - M4	M3 - M4
Deck cranes	Hook duty	M4	M3 - M4
	Grab or magnet duty	M5 - M6	M3 - M4
Tower cranes for building		M4	M4
Derricks		M2 - M3	M1 - M2
Railway cranes allowed to run in a train		M3 - M4	M2 - M3
Mobile cranes	Hook duty	M3 - M4	M2 - M3

Table N° 2

Class of utilization								
Classes of utilisation (Table T.2.1.3.4.)		**T2**	**T3**	**T4**	**T5**	**T6**	**T7**	**T8**
		400 < T2 800	**800 < T3 1600**	**1600 < T4 3200**	**3200 < T5 6300**	**6300 < T6 12500**	**12500 < T7 25000**	**25000 < T8 50000**
L1	**0 > Km 0,125**		M2	M3	M4	M5	M6	M7
L2	**0,125 > Km 0,250**	M2	M3	M4	M5	M6	M7	M8
L3	**0,250 > Km 0,500**	M3	M4	M5	M6	M7	M8	
L4	**0,500 > Km 1000**	M4	M5	M6	M7	M8		

What we Supply





1 Winch

2 Rope

3 Shackle

4 Hook

Winches Description

BWE085 - SD10 - 01 - 3,94 - APV055 - P - EL -

Winch Size

BWE085
BWE105
BWE125
BWE160

Drum Configuration and Rope Diameter

SDØ = Smooth Drum
GDØLL = Special Grooved Left
GDØLR = Special Grooved Right*

Drum Rotation Sense

01 = Clock Wise (Standard)
02 = Counter Clock Wise
00 = Not Defined*

Ratio

3,94
18,1

Motor and Displacement

APV = Axial Pistons Variable
APF = Axial Pistons Fixed
IPV = Integrated Pistons Variable
IPF = Integrated Pistons Fixed
ORB = Orbital
NOM = No Motor*

Pressure Roller

P = Present
_ = None

Limit Switch

EL = Electric Switch
HY = Hydraulic Switch
RE = Rotary Electric Switch
RH = Rotary Hydraulic Switch
_ = None

* Not delivered as Standard

Designation example: BWE085-SD10-01-3,94-APV055-P-EL-E1-RH-LP (Others; L342) Q601

E1 - RH - LP (Others; L342) Q601

Certification
Q601 = Third part Certification
_ = None

Drum Length
L342 = Drum Length in [mm]

Others
..... = Other Characteristics
_ = None

Lifting of Personnel Winch
LP = Lifting of Personnel
_ = None

Rope Mounted
R = Rope
RH = Rope with Accessories
_ = None

Encoder
E1 = Proximity Sensor
E2 = Encoder
E3 = Rotating Shaft (Encoder predisposition)
_ = None

Rope Description

Rope - 6x36 - D14x100 - RR - G - CT - NoR - 1960 - A02 - DNV GL

Rope Class

Dimensions

D14 = Rope Diameter in [mm]
100 = Rope Length in [m]

Rope Structure

RR = Right Regular Lay
LR = Left Regular lay
RL = Right Lang Lay
LL = Left Lang Lay

Rope Material

G = Galvanized Steel (Standard)
B = Bright Steel
S = Stainless Steel

Strands Structures

CT = Compacted (Standard)
NC = Not Compacted

Rotating / Anti-Rotating

NoR = Anti-Rotating
RoT = Rotating

Rope Strength

2160 [Mpa] (Standard)
1960 [Mpa]
1770 [Mpa]

End Fitting

A01 = Thimble DIN 3091
A02 = Thimble DIN6899 (Standard)
A03 = Close Spelter Socket
A04 = Open Spelter Socket
A05 = Free End

Certification

Rope Accessories Description

Shackle - SPA - cs - 3Ton - DNV_GL

Certification

Capacity

Material

cs = Carbon Steel (Standard)
as = Alloy Steel

Type

BTA = Bolt Type Ancor (Standard)

SPA = Screw Pin Ancor

Hook - EH - cs - 3Ton - ABS

Certification

Capacity

Material

cs = Carbon Steel (Standard)
as = Alloy Steel

Type

SH = Swivel (Standard)
BH = Bearing
EH = Eye Hook

DANA
BREVINI®
Motion Systems

Model BWE: Winches Family

DANA BREVINI® Motion Systems

Size	Line Pull at first Layer [kg]	Line Pull at first Layer [lbf]	Page
BWE085	8.500	18.700	085-**1**
BWE105	10.500	23.100	105-**1**
BWE125	12.500	27.500	125-**1**
BWE160	16.000	35.200	160-**1**

DANA
BREVINI®
Motion Systems

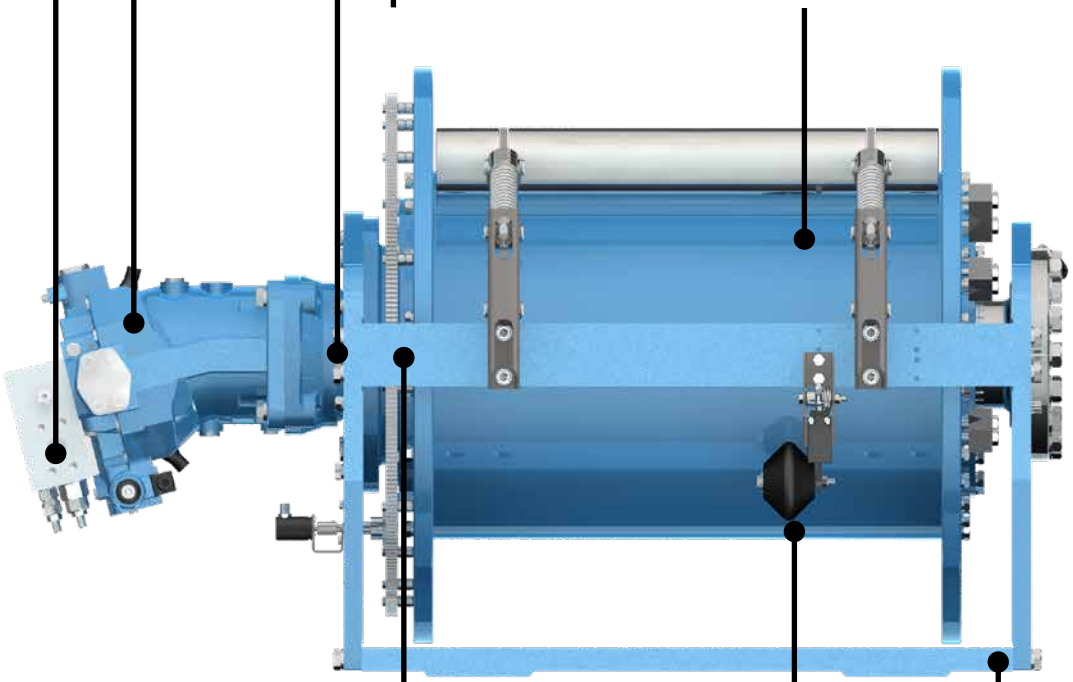
Line Pull at first Layer up to:
8.500 [kg]
18.800 [lbf]

Hydraulic Valve
To ensure safe operation with
enhanced control during Load Lowering

Hydraulic Motor
Fixed or Variable displacement Brevini®
High speed Axial piston motor

Multidisc static Brake
Specifically designed for
Winch applications

Drum
Robust steel drum, available in
grooved or smooth options



High performance Gears
Low noise and longer life time

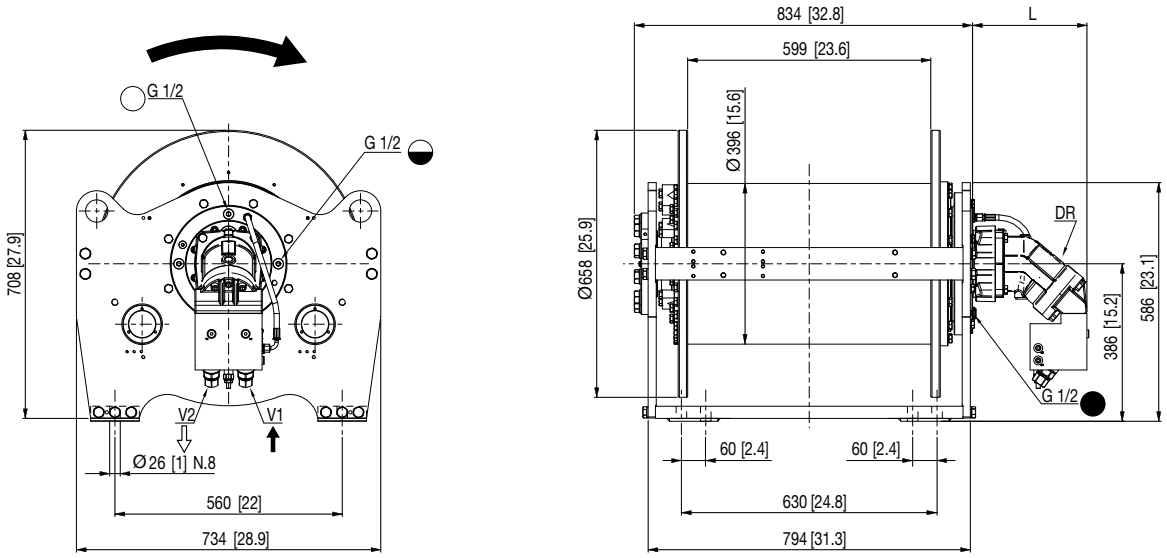
Accessories
Pressure Roller
Electric or Hydraulic Limit Switch
Electric or Hydraulic Rotary Limit Switch
Speed Sensor (proximity)

Structure
Robust steel frame,
Suitable for low temperature applications

Brevini® Hydraulic Axial Piston Motor

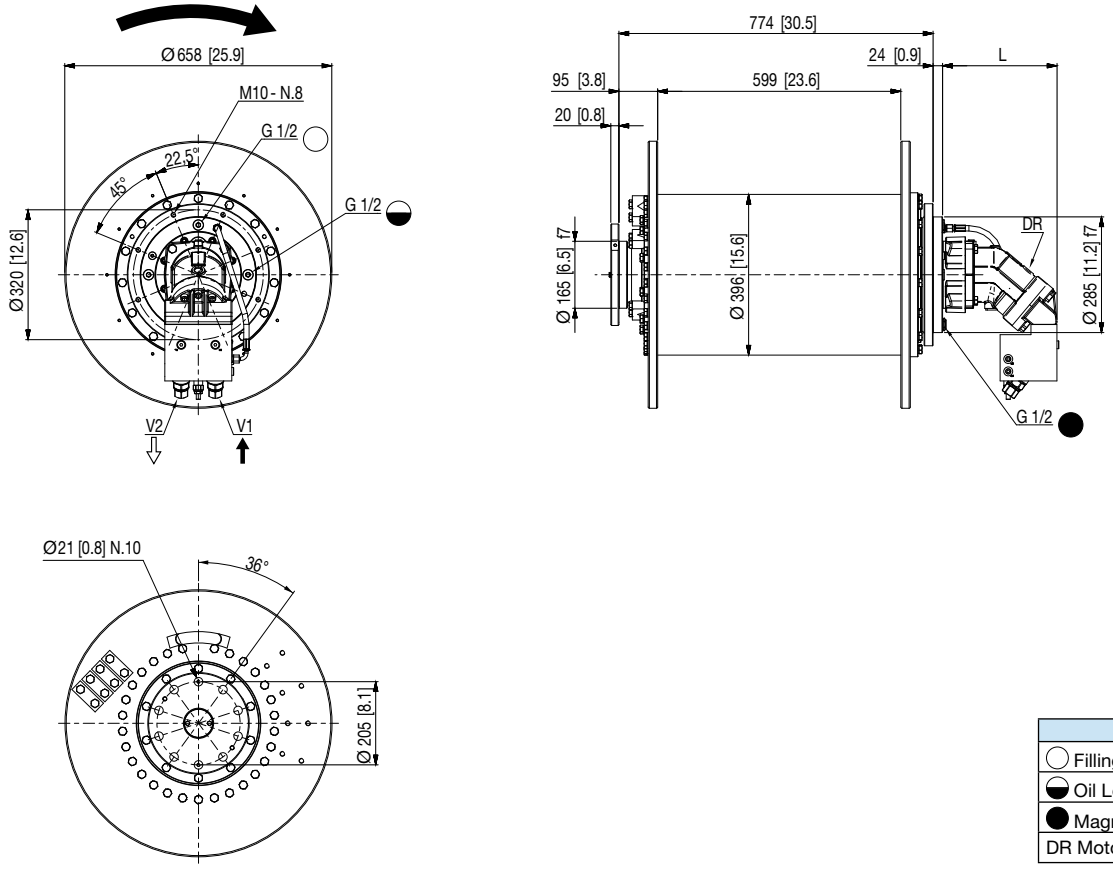
	Displacement	L
Fixed Displacement	77.82 cm³/rev [4.747 in³/rev]	286 mm [11.3 in]
Variable Displacement	85.3 cm³/rev [5.203 in³/rev]	380 mm [15 in]

Winch



Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Motor Drum Winch

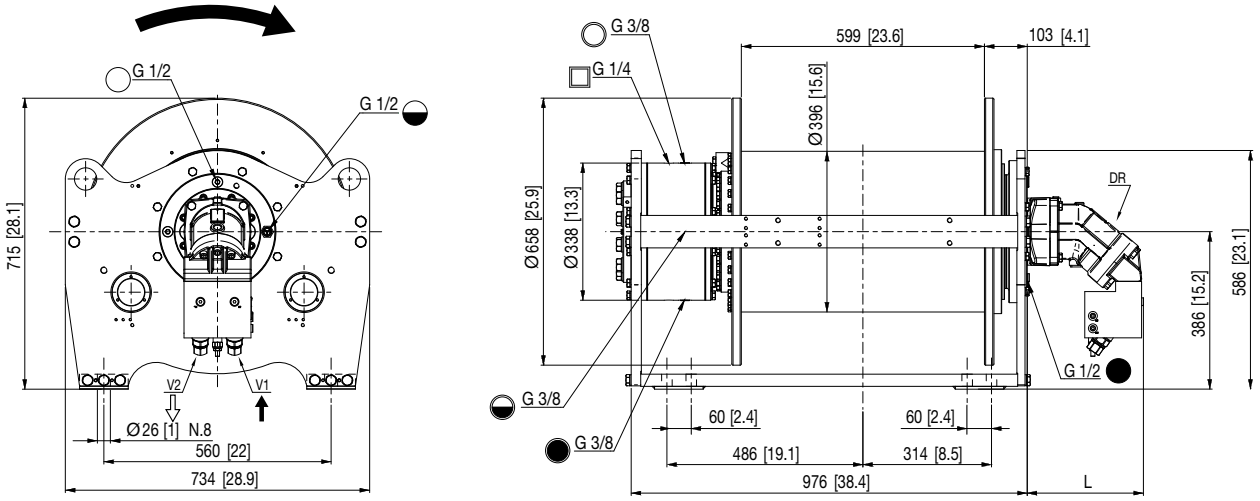


Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Brevini® Hydraulic Axial Piston Motor for Lifting of Personnel Winches

	Displacement	L
Fixed Displacement	77.82 cm³/rev [4.747 in³/rev]	286 mm [11.3 in]
Variable Displacement	85.3 cm³/rev [5.203 in³/rev]	380 mm [15 in]

Lifting of Personnel Winch



Oil Plugs	
Filling plug	Brake Filling Plug
Oil Level Plug	Brake oil Level Plug
Magnetic and Drain Plug	Brake Drain Plug
DR Motor Drain Plug	Brake Releasing Plug

Line pull of Brevini® Lifting of Personnel Winches can be required by filling the Winch Selection Technical Sheet available at the last page of this catalogue.

Our Standard Configurations

Hydraulic Motor Fixed Displacement	77.82 [cm³/rev]	4.74 [in³/rev]
Hydraulic Motor Variable Displacement	85.3 [cm³/rev]	5.2 [in³/rev]
Ratio	49 81	
Drum	Smooth Drum Special Grooved Drum*	
Rope	Ø 20 [mm] Ø 22 [mm] Ø 24 [mm]	Ø 0.79 [in] Ø 0.87 [in] Ø 0.94 [in]

* As Standard only with rope diameter Ø 22 mm [0.87 in]

International System of Units: SI — BWE085-SD..-01-81-APF075

Working layer		1	2	3	4	5	6 Storage length
Line pull	[kg]	8500	7820	7230	6720	6270	-
Rope speed	[m/min]	29	32	34	37	39	-
Rope length	[m]	34	71	112	154	202	250

Brevini® Motor	SH11C075		Advised rope diameter	22	[mm]
Starting lifting pressure	250	[bar]	Oil quantity	22	[l]
Operating pressure	210	[bar]	Estimated weight	671	[kg]
Operating oil flow at the motor	150	[l/min]	Lifting port	G1	V1
Minimum oil flow at the motor	6	[l/min]	Lowering port	G1	V2
Gear ratio	81,0	[i]	Static braking torque	1172	[Nm]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 20 [mm]	Rope length	[m]	38	77	122	168	218	270
Rope Diameter Ø 24 [mm]	Rope length	[m]	32	65	104	143	188	-

Last indicated Layer is intended only as Storage

United States Customary Units: USC — BWE085-SD..-01-81-APF075

Working layer		1	2	3	4	5	6 Storage length
Line pull	[lbf]	18800	17250	15940	14810	13830	-
Rope speed	[fpm]	96	105	113	122	131	-
Rope length	[ft]	114	233	368	507	662	822

Brevini® Motor	SH11C075		Advised rope diameter	0,87	[in]
Starting lifting pressure	3615	[psi]	Oil quantity	5,81	[gal]
Operating pressure	3010	[psi]	Estimated weight	1479	[lbs]
Operating oil flow at the motor	40	[gpm]	Lifting port	G1	V1
Minimum oil flow at the motor	1,59	[gpm]	Lowering port	G1	V2
Gear ratio	81,0	[i]	Static braking torque	864	[ft·lbf]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 0,79 [in]	Rope length	[ft]	124	255	400	551	717	887
Rope Diameter Ø 0,94 [in]	Rope length	[ft]	105	215	341	471	617	-

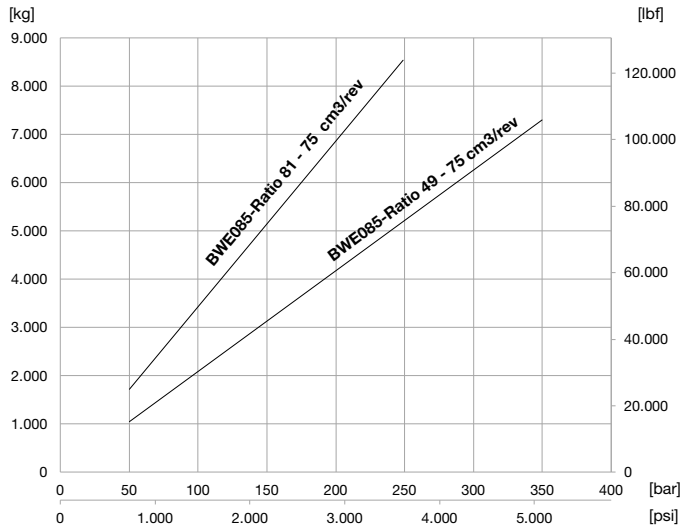
Last indicated Layer is intended only as Storage

Note:

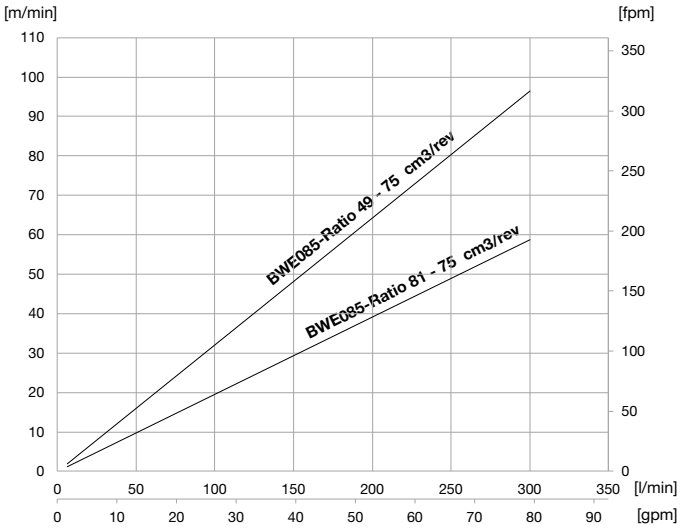
- For safety reasons always keep at least 3 wraps of rope wrapped on the drum.
- Technical features may change with no previous notice from the manufacturer.
- The MBL of the Rope must be verified according to the requested Safety Factors.
- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

Axial Piston Motor Fixed Displacement

Maximum Line pull at first layer

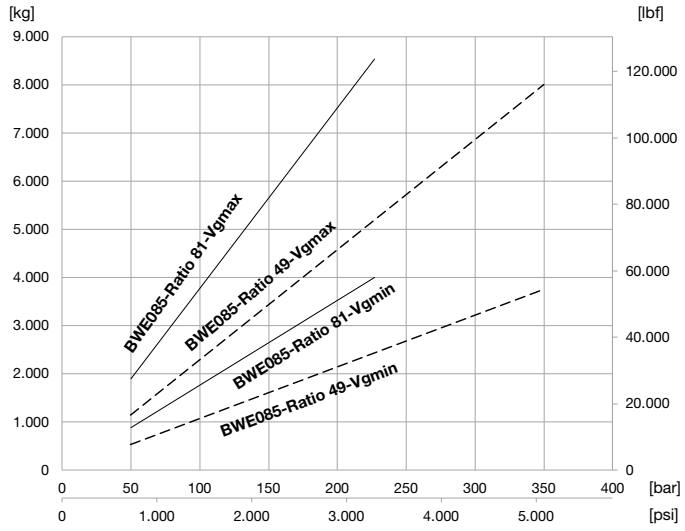


Maximum Speed at first layer



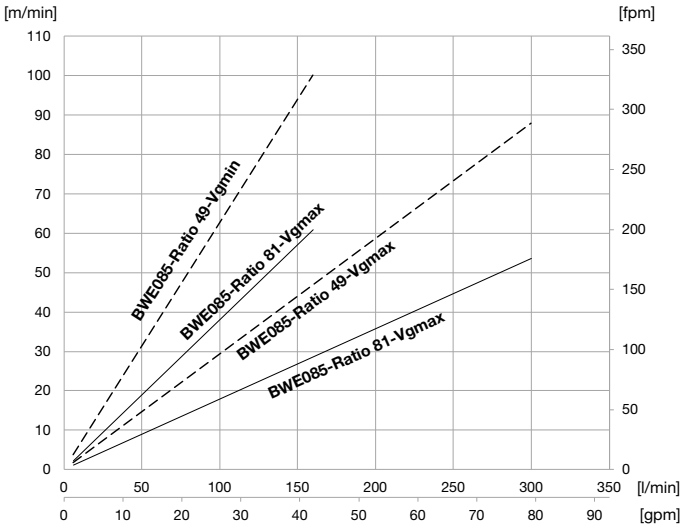
Axial Piston Motor Variable Displacement

Maximum Line pull at first layer



V_{gmax} = 85 cm³/rev [5.18 in³/rev]
V_{gmin} = 40 cm³/rev [2.44 in³/rev]

Maximum Speed at first layer



V_{gmax} = 85 cm³/rev [5.18 in³/rev] - Max 300 l/min [80 gpm] allowed
V_{gmin} = 40 cm³/rev [2.44 in³/rev] - Max 160 l/min [43 gpm] allowed

Note:

- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

DANA
BREVINI®
Motion Systems

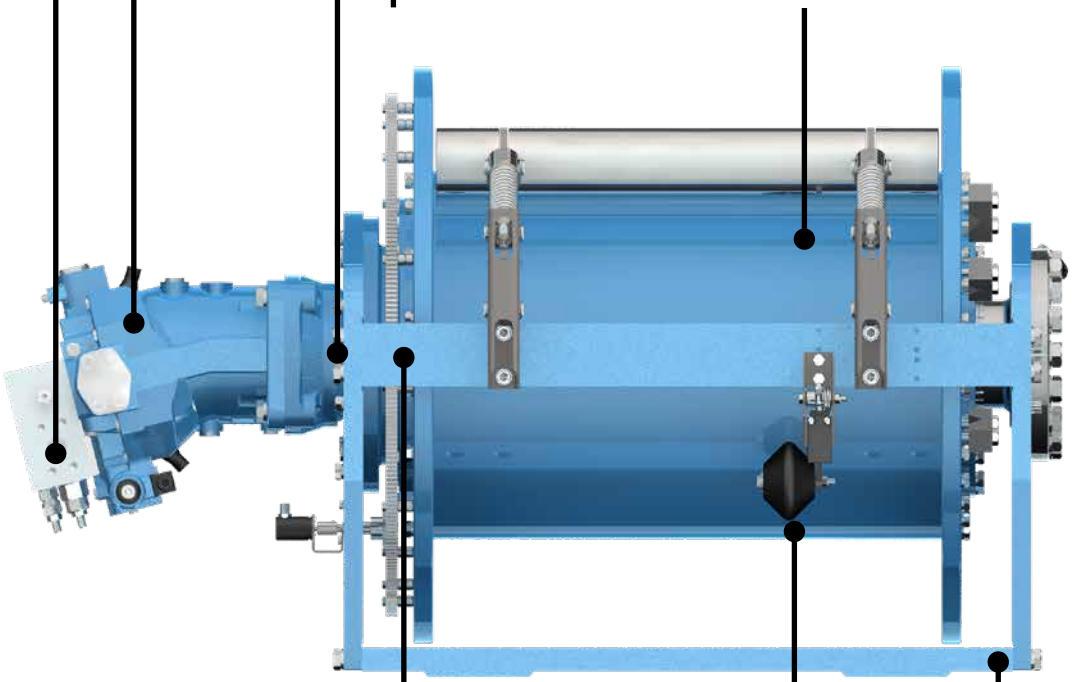
Line Pull at first Layer up to:
10.500 [kg]
23.100 [lbf]

Hydraulic Valve
To ensure safe operation with
enhanced control during Load Lowering

Hydraulic Motor
Fixed or Variable displacement Brevini®
High speed Axial piston motor

Multidisc static Brake
Specifically designed for
Winch applications

Drum
Robust steel drum, available in
grooved or smooth options



High performance Gears
Low noise and longer life time

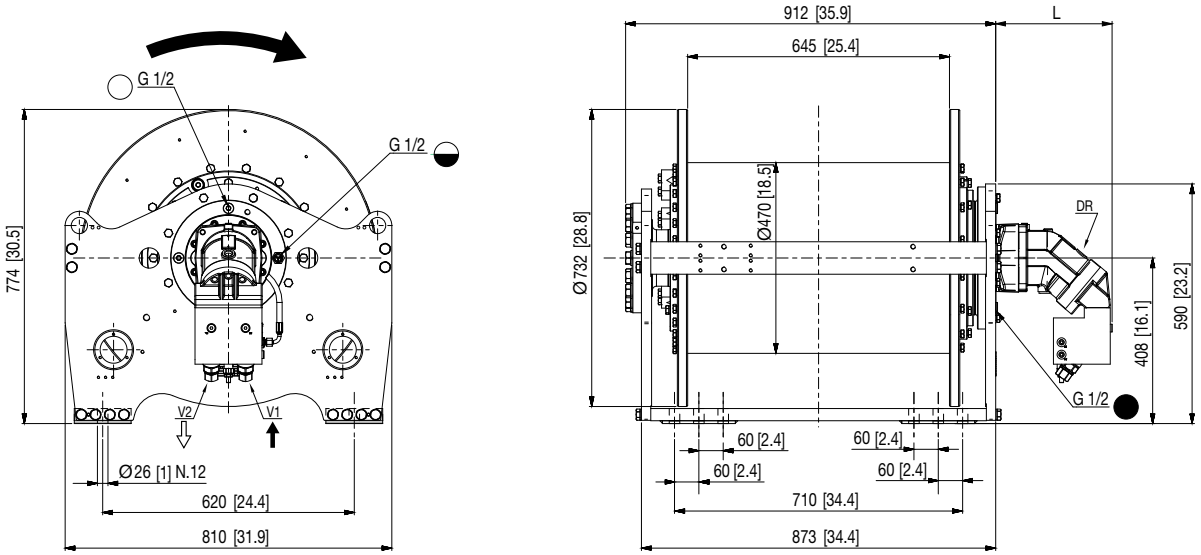
Accessories
Pressure Roller
Electric or Hydraulic Limit Switch
Electric or Hydraulic Rotary Limit Switch
Speed Sensor (proximity)

Structure
Robust steel frame,
Suitable for low temperature applications

Brevini® Hydraulic Axial Piston Motor

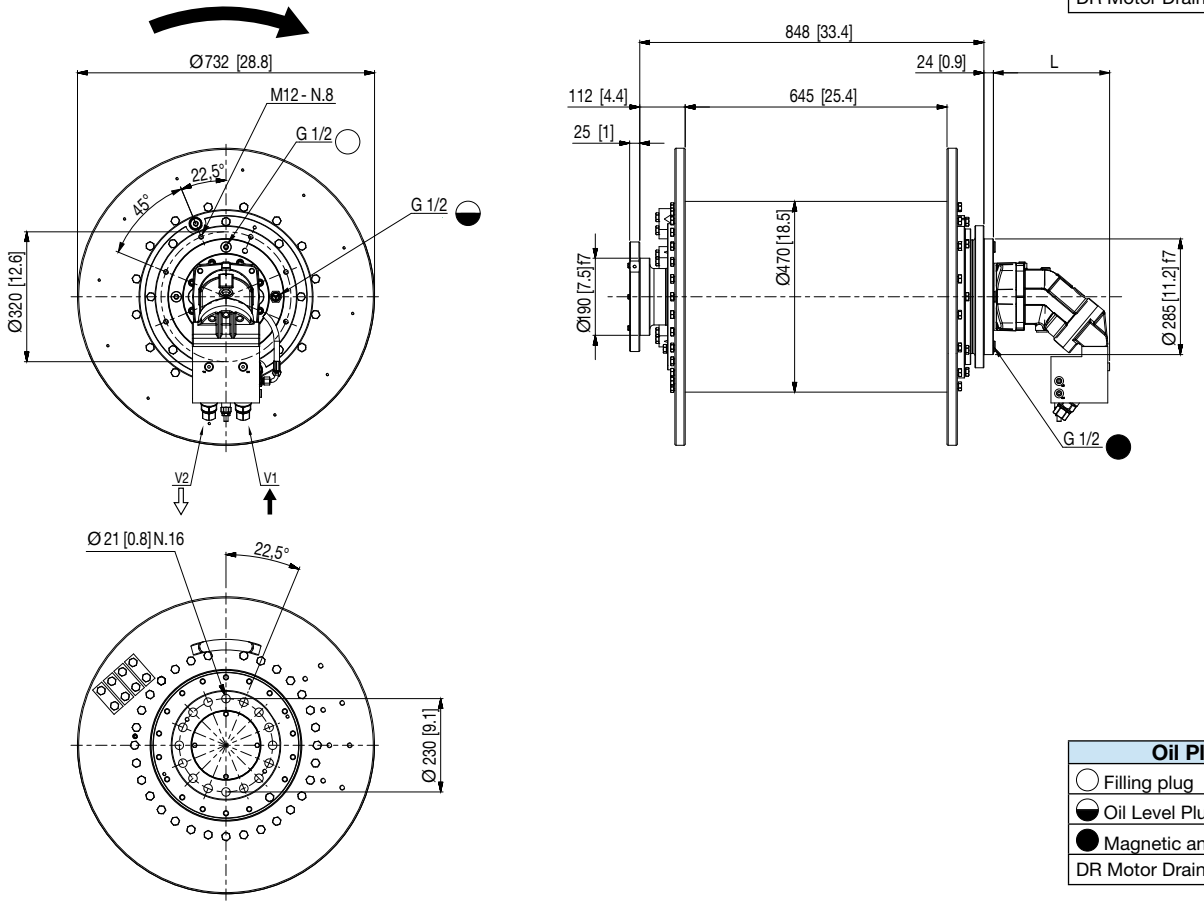
	Displacement	L
Fixed Displacement	86.23 cm³/rev [5.26 in³/rev]	286 mm [11.3 in]
	124.8 cm³/rev [7.613 in³/rev]	336 mm [13.2 in]
Variable Displacement	115.7 cm³/rev [7.05 in³/rev]	432 mm [17 in]

Winch



Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Motor Drum Winch

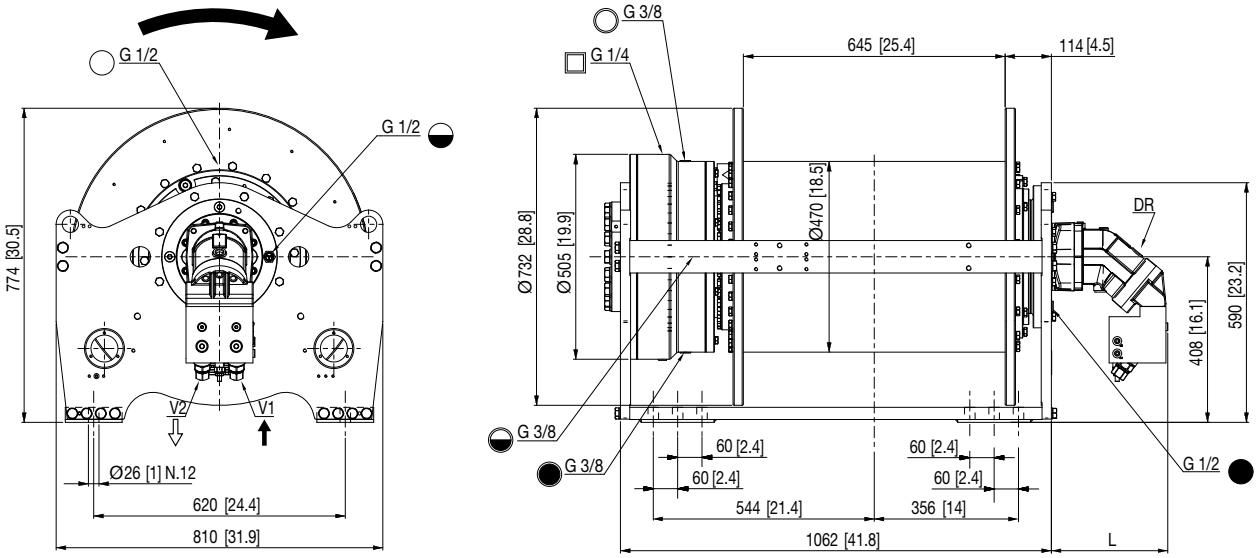


Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Brevini® Hydraulic Axial Piston Motor for Lifting of Personnel Winches

	Displacement	L
Fixed Displacement	86.23 cm³/rev [5.26 in³/rev] 124.8 cm³/rev [7.613 in³/rev]	286 mm [11.3 in] 336 mm [13.2 in]
Variable Displacement	115.7 cm³/rev [7.05 in³/rev]	432 mm [17 in]

Lifting of Personnel Winch



Oil Plugs	
Filling plug	Brake Filling Plug
Oil Level Plug	Brake oil Level Plug
Magnetic and Drain Plug	Brake Drain Plug
DR Motor Drain Plug	Brake Releasing Plug

Line pull of Brevini® Lifting of Personnel Winches can be required by filling the Winch Selection Technical Sheet available at the last page of this catalogue.

Our Standard Configurations

Hydraulic Motor Fixed Displacement	86.23 cm³/rev 124.8 cm³/rev	5.26 [in³/rev] 4.747 [in³/rev]
Hydraulic Motor Variable Displacement	115.7 [cm³/rev]	7.05 [in³/rev]
Ratio	50.79 83.21	
Drum	Smooth Drum Special Grooved Drum*	
Rope	Ø 20 [mm] Ø 22 [mm] Ø 24 [mm]	Ø 0.79 [in] Ø 0.87 [in] Ø 0.94 [in]

* As Standard only with rope diameter Ø 22 mm [0.87 in]

International System of Units: SI — BWE105-SD..-01-83,2-APF090

Working layer		1	2	3	4	5	6 Storage length
Line pull	[kg]	10500	9750	9110	8540	8040	-
Rope speed	[m/min]	30	32	35	37	39	-
Rope length	[m]	44	89	140	192	250	309

Brevini® Motor	SH11C090		Advised rope diameter	22	[mm]
Starting lifting pressure	320	[bar]	Oil quantity	30	[l]
Operating pressure	265	[bar]	Estimated weight	899	[kg]
Operating oil flow at the motor	150	[l/min]	Lifting port	G1	V1
Minimum oil flow at the motor	6	[l/min]	Lowering port	G1	V2
Gear ratio	83,2	[i]	Static braking torque	1172	[Nm]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 20 [mm]	Rope length	[m]	48	98	153	209	271	334
Rope Diameter Ø 24 [mm]	Rope length	[m]	40	82	130	178	232	-

Last indicated Layer is intended only as Storage

United States Customary Units: USC — BWE105-SD..-01-83,2-APF090

Working layer		1	2	3	4	5	6 Storage length
Line pull	[lbf]	23100	21510	20090	18840	17740	-
Rope speed	[fpm]	99	107	114	122	130	-
Rope length	[ft]	144	294	461	632	821	1013

Brevini® Motor	SH11C090		Advised rope diameter	0,87	[in]
Starting lifting pressure	4600	[psi]	Oil quantity	7,92	[gal]
Operating pressure	3835	[psi]	Estimated weight	1981	[lbf]
Operating oil flow at the motor	40	[gpm]	Lifting port	G1	V1
Minimum oil flow at the motor	1,59	[gpm]	Lowering port	G1	V2
Gear ratio	83,2	[i]	Static braking torque	864	[ft·lbf]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 0,79 [in]	Rope length	[ft]	158	322	502	687	890	1097
Rope Diameter Ø 0,94 [in]	Rope length	[ft]	133	271	426	586	763	-

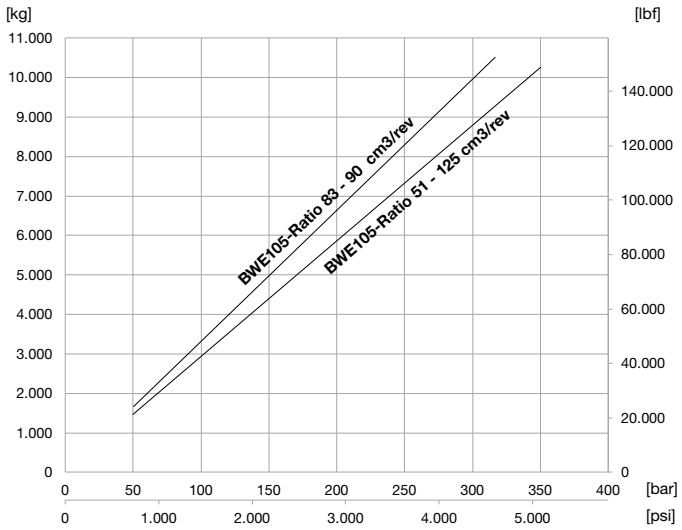
Last indicated Layer is intended only as Storage

Note:

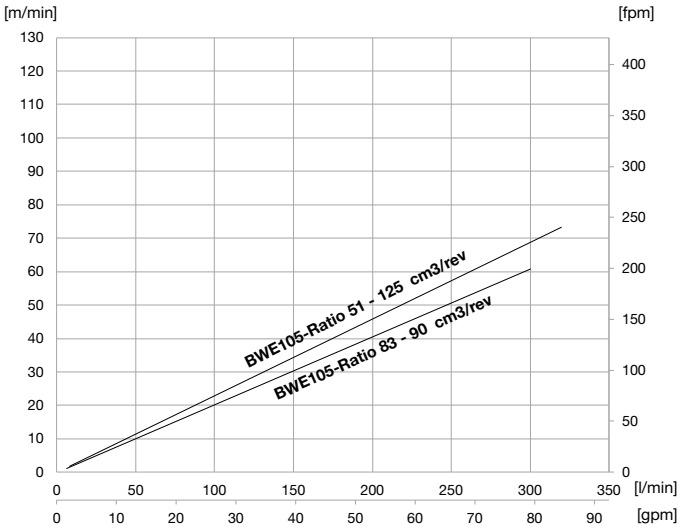
- For safety reasons always keep at least 3 wraps of rope wrapped on the drum.
- Technical features may change with no previous notice from the manufacturer.
- The MBL of the Rope must be verified according to the requested Safety Factors.
- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

Axial Piston Motor Fixed Displacement

Maximum Line pull at first layer

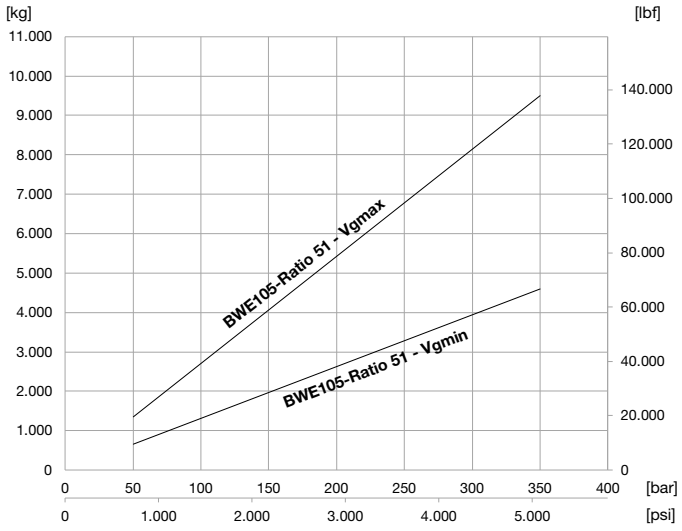


Maximum Speed at first layer



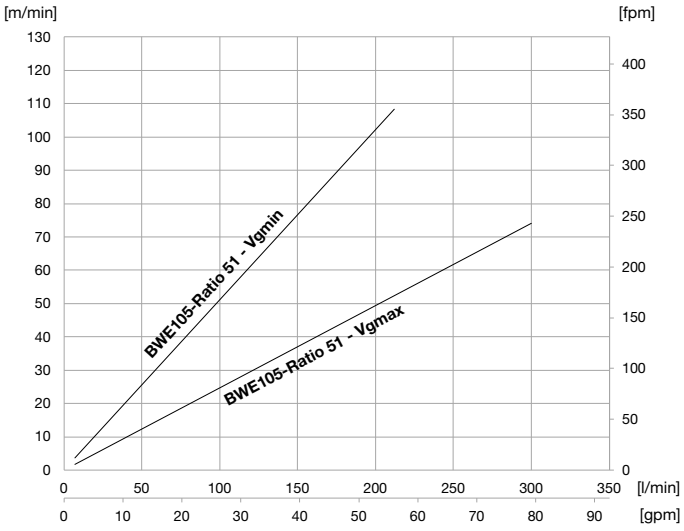
Axial Piston Motor Variable Displacement

Maximum Line pull at first layer



V_{gmax} = 115 cm³/rev [7.05 in³/rev]
V_{gmin} = 56 cm³/rev [3.416 in³/rev]

Maximum Speed at first layer



V_{gmax} = 115 cm³/rev [7.05 in³/rev] - Max 300 l/min [80 gpm] allowed
V_{gmin} = 56 cm³/rev [3.416 in³/rev] - Max 212 l/min [56 gpm] allowed

Note:

- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

DANA
BREVINI®
Motion Systems

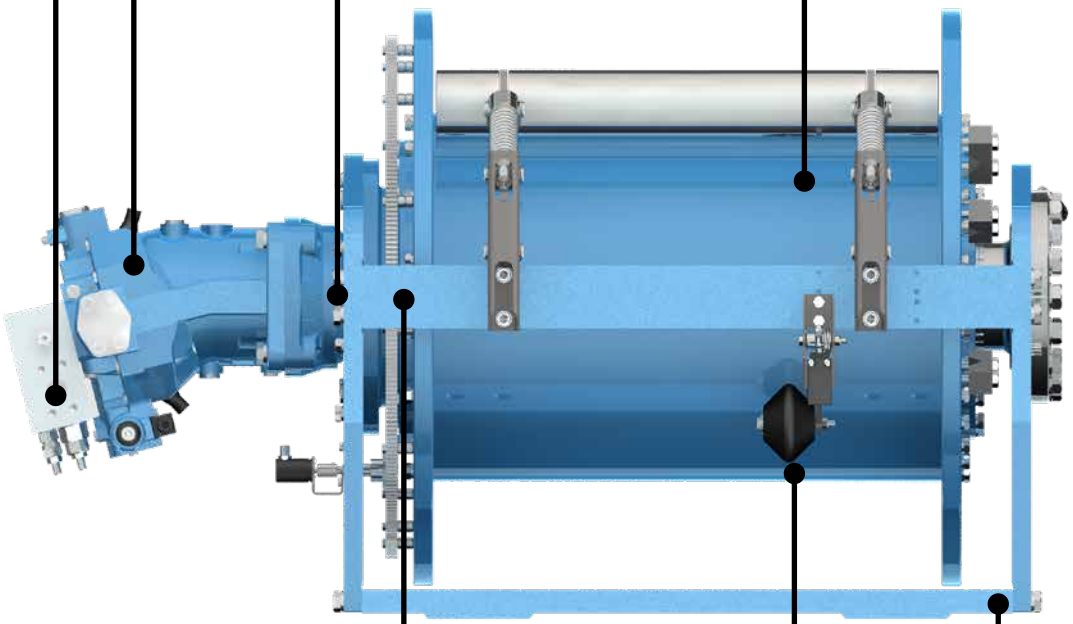
Line Pull at first Layer up to:
12.500 [kg]
27.500 [lbf]

Hydraulic Valve
To ensure safe operation with
enhanced control during Load Lowering

Hydraulic Motor
Fixed or Variable displacement Brevini®
High speed Axial piston motor

Multidisc static Brake
Specifically designed for
Winch applications

Drum
Robust steel drum, available in
grooved or smooth options



High performance Gears
Low noise and longer life time

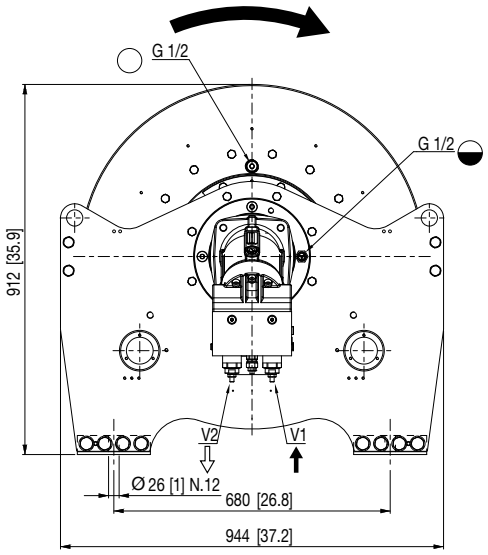
Accessories
Pressure Roller
Electric or Hydraulic Limit Switch
Electric or Hydraulic Rotary Limit Switch
Speed Sensor (proximity)

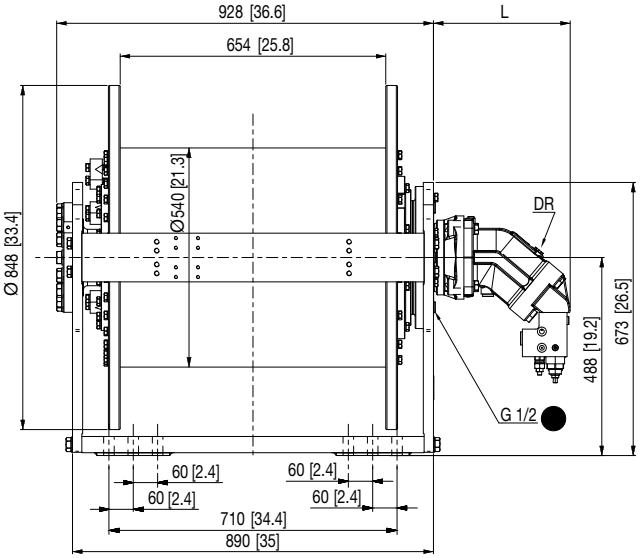
Structure
Robust steel frame,
Suitable for low temperature applications

Brevini® Hydraulic Axial Piston Motor

	Displacement	L
Fixed Displacement	124.8 cm³/rev [7.613 in³/rev]	336 mm [13.2 in]
	163.9 cm³/rev [9.998 in³/rev]	400 mm [15.8 in]
Variable Displacement	166.2 cm³/rev [10.13 in³/rev]	489 mm [19.2 in]

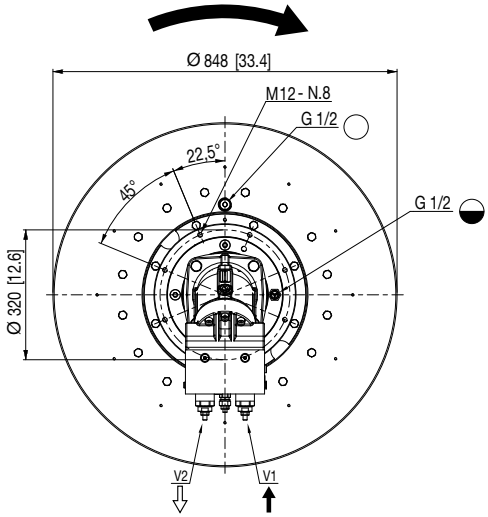
Winch

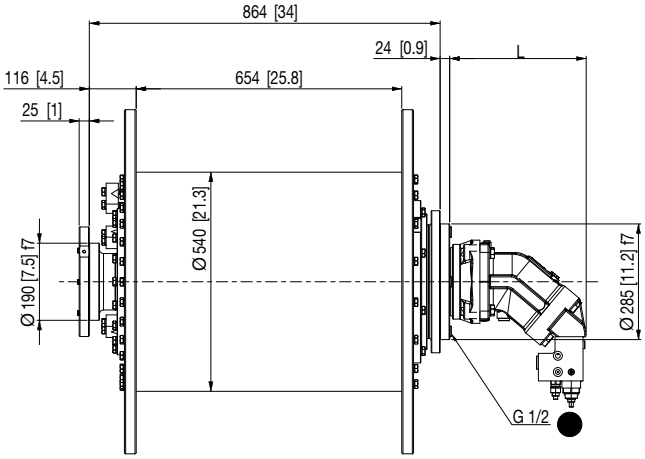




Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Motor Drum Winch



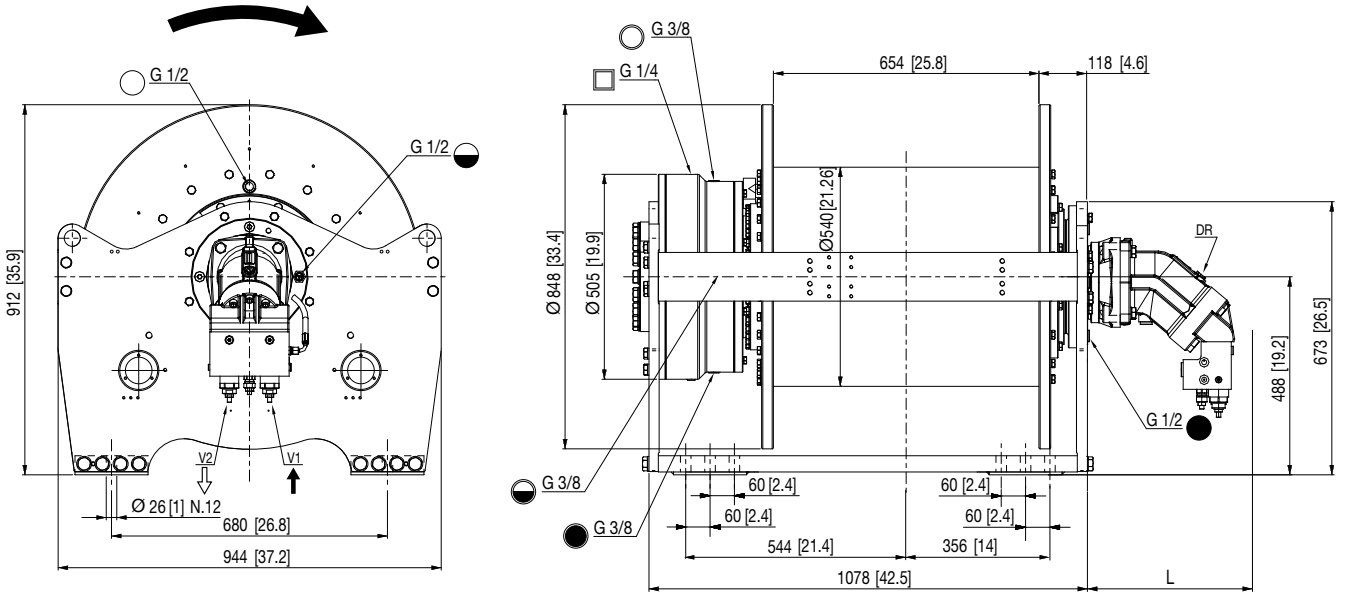


Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Brevini® Hydraulic Axial Piston Motor for Lifting of Personnel Winches

	Displacement	L
Fixed Displacement	124.8 cm³/rev [7.613 in³/rev] 163.9 cm³/rev [9.998 in³/rev]	336 mm [13.2 in] 400 mm [15.8 in]
Variable Displacement	166.2 cm³/rev [10.13 in³/rev]	489 mm [19.2 in]

Lifting of Personnel Winch



Oil Plugs	
Filling plug	Brake Filling Plug
Oil Level Plug	Brake oil Level Plug
Magnetic and Drain Plug	Brake Drain Plug
DR Motor Drain Plug	Brake Releasing Plug

Line pull of Brevini® Lifting of Personnel Winches can be required by filling the Winch Selection Technical Sheet available at the last page of this catalogue.

Our Standard Configurations

Hydraulic Motor Fixed Displacement	124.8 cm³/rev 163.9 cm³/rev	7.613 [in³/rev] 9.998 [in³/rev]
Hydraulic Motor Variable Displacement	166.2 [cm³/rev]	10.13 [in³/rev]
Ratio	50.79 83.21	
Drum	Smooth Drum Special Grooved Drum*	
Rope	Ø 24 [mm] Ø 26 [mm] Ø 28 [mm]	Ø 0.94 [in] Ø 1.02 [in] Ø 1.10 [in]

* As Standard only with rope diameter Ø 26 mm [1.02 in]

International System of Units: SI — BWE125-SD..-01-83,2-APF125

Working layer		1	2	3	4	5	6 Storage length
Line pull	[kg]	12500	11590	10810	10120	9510	-
Rope speed	[m/min]	24	26	27	29	31	-
Rope length	[m]	43	88	139	190	247	306

Brevini® Motor	SH11C125		Advised rope diameter	26	[mm]
Starting lifting pressure	300	[bar]	Oil quantity	39	[l]
Operating pressure	250	[bar]	Estimated weight	1150	[kg]
Operating oil flow at the motor	150	[l/min]	Lifting port	G1	V1
Minimum oil flow at the motor	8	[l/min]	Lowering port	G1	V2
Gear ratio	83,2	[i]	Static braking torque	1172	[Nm]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 24 [mm]	Rope length	[m]	47	95	149	204	265	326
Rope Diameter Ø 28 [mm]	Rope length	[m]	40	82	130	178	232	-

Last indicated Layer is intended only as Storage

United States Customary Units: USC — BWE125-SD..-01-83,2-APF125

Working layer		1	2	3	4	5	6 Storage length
Line pull	[lbf]	27500	25560	23830	22320	20980	-
Rope speed	[fpm]	79	85	91	97	104	-
Rope length	[ft]	142	290	456	625	813	1004

Brevini® Motor	SH11C125		Advised rope diameter	1,02	[in]
Starting lifting pressure	4355	[psi]	Oil quantity	10,30	[gal]
Operating pressure	3630	[psi]	Estimated weight	2535	[lbf]
Operating oil flow at the motor	40	[gpm]	Lifting port	G1	V1
Minimum oil flow at the motor	2,11	[gpm]	Lowering port	G1	V2
Gear ratio	83,2	[i]	Static braking torque	864	[ft·lbf]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 0,94 [in]	Rope length	[ft]	154	313	490	671	870	1072
Rope Diameter Ø 1,1 [in]	Rope length	[ft]	133	271	426	586	764	-

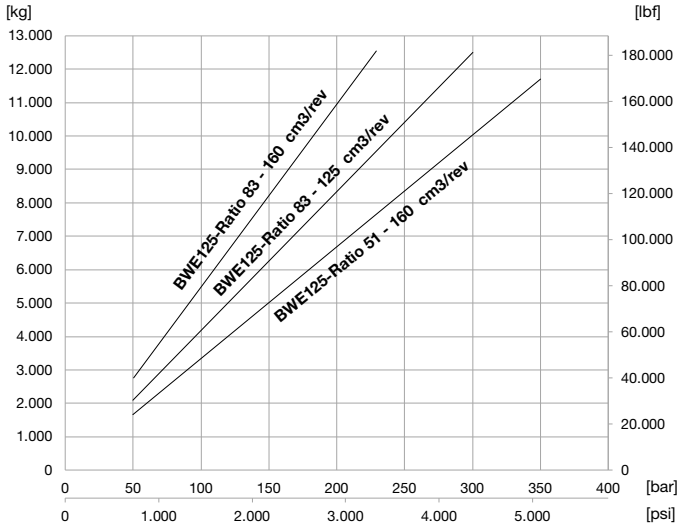
Last indicated Layer is intended only as Storage

Note:

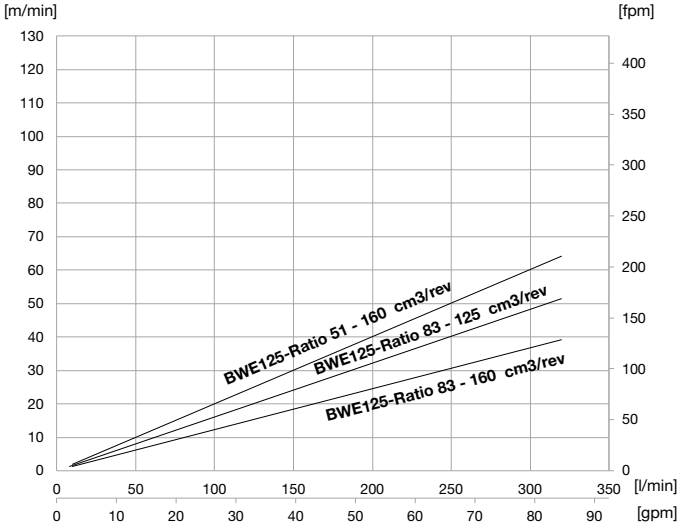
- For safety reasons always keep at least 3 wraps of rope wrapped on the drum.
- Technical features may change with no previous notice from the manufacturer.
- The MBL of the Rope must be verified according to the requested Safety Factors.
- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

Axial Piston Motor Fixed Displacement

Maximum Line pull at first layer

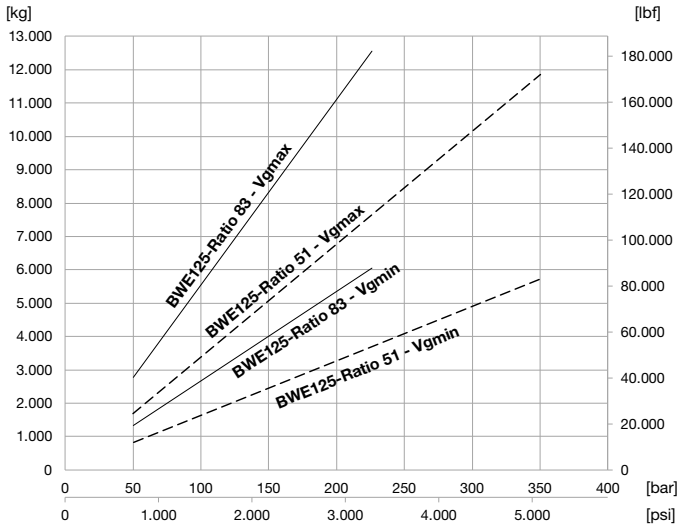


Maximum Speed at first layer



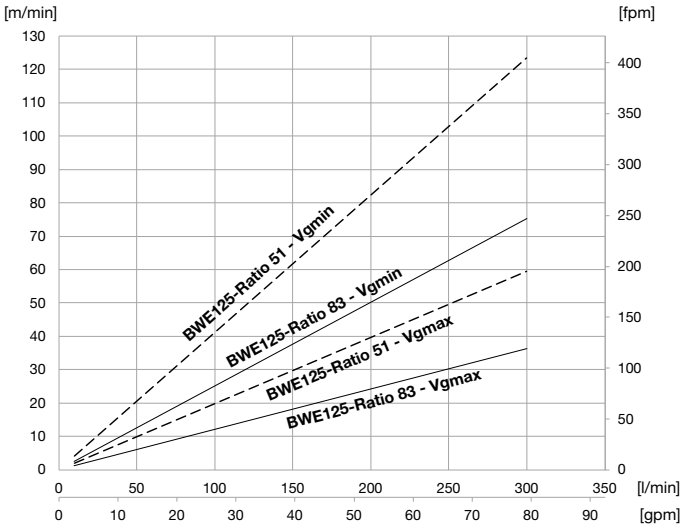
Axial Piston Motor Variable Displacement

Maximum Line pull at first layer



V_{gmax} = 166.2 cm³/rev [10.13 in³/rev]
V_{gmin} = 80 cm³/rev [4.88 in³/rev]

Maximum Speed at first layer



V_{gmax} = 166.2 cm³/rev [10.13 in³/rev] - Max 300 l/min [79 gpm] allowed
V_{gmin} = 80 cm³/rev [4.88 in³/rev] - Max 300 l/min [79 gpm] allowed

Note:

- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

DANA
BREVINI®
Motion Systems

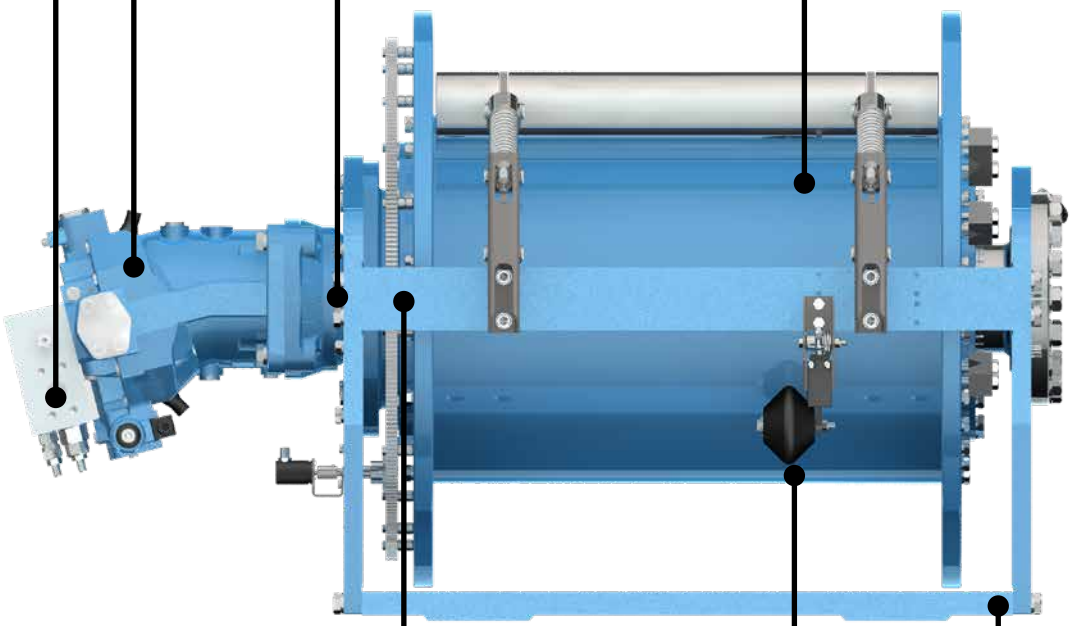
Line Pull at first Layer up to:
16.000 [kg]
35.300 [lbf]

Hydraulic Valve
To ensure safe operation with
enhanced control during Load Lowering

Hydraulic Motor
Fixed or Variable displacement Brevini®
High speed Axial piston motor

Multidisc static Brake
Specifically designed for
Winch applications

Drum
Robust steel drum, available in
grooved or smooth options



High performance Gears
Low noise and longer life time

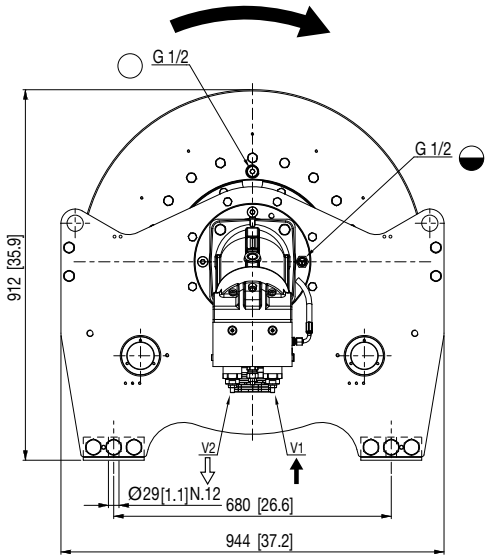
Accessories
Pressure Roller
Electric or Hydraulic Limit Switch
Electric or Hydraulic Rotary Limit Switch
Speed Sensor (proximity)

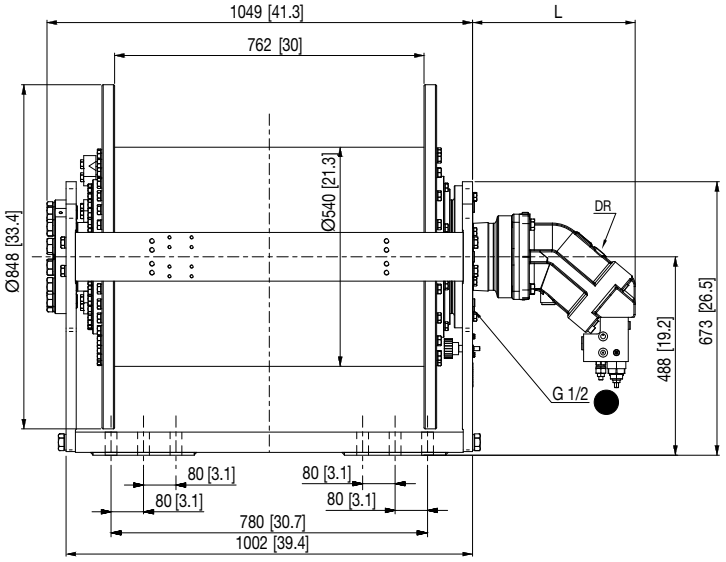
Structure
Robust steel frame,
Suitable for low temperature applications

Brevini® Hydraulic Axial Piston Motor

	Displacement	L
Fixed Displacement	124.8 cm³/rev [7.613 in³/rev]	336 mm [13.2 in]
	163.9 cm³/rev [9.998 in³/rev]	400 mm [15.8 in]
Variable Displacement	166.2 cm³/rev [10.13 in³/rev]	489 mm [19.2 in]

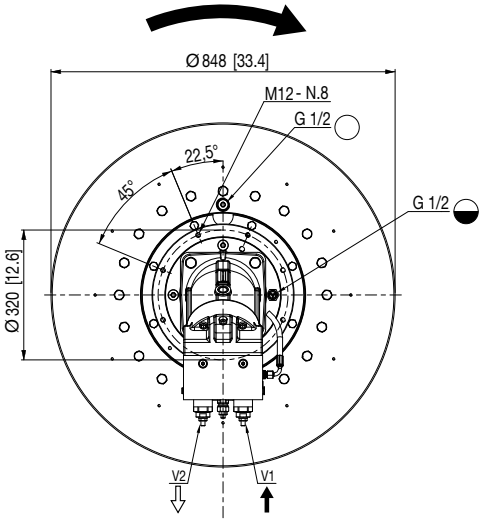
Winch

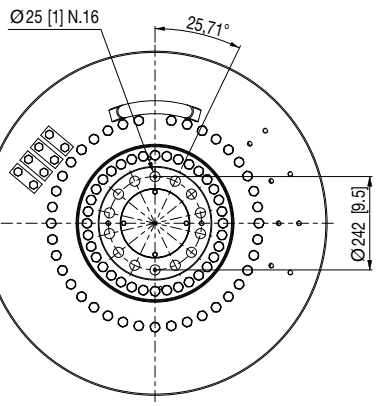


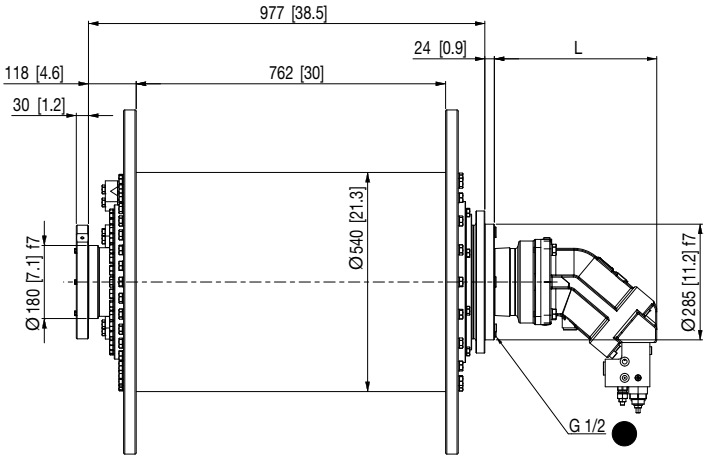


Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Motor Drum Winch





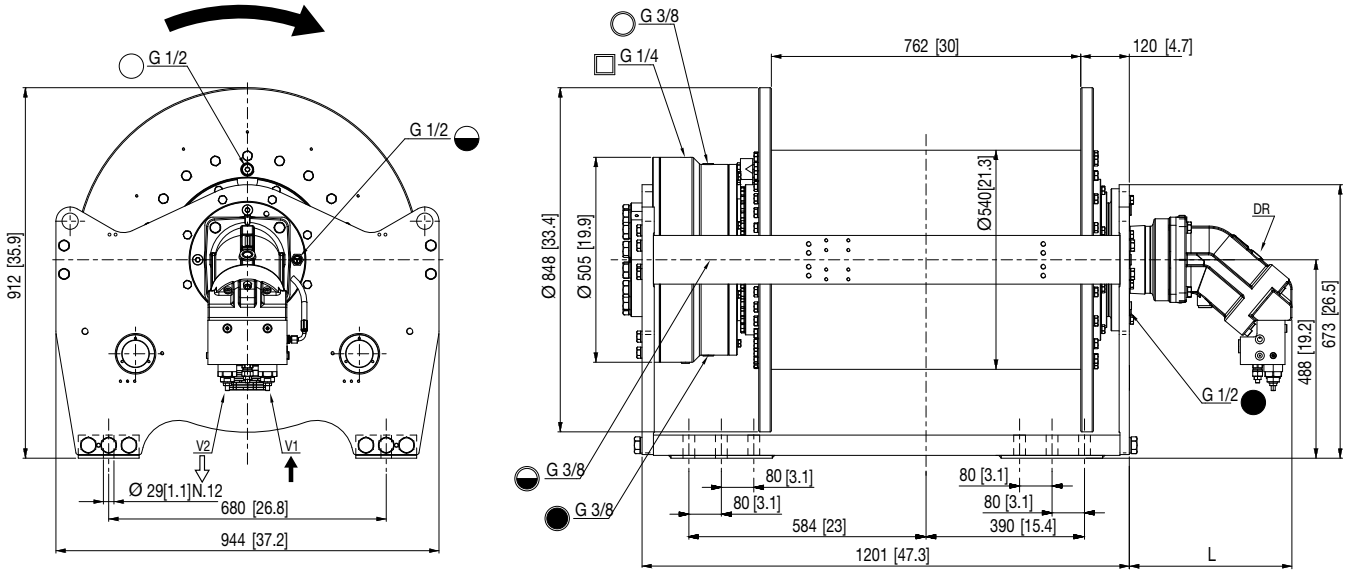


Oil Plugs
○ Filling plug
◒ Oil Level Plug
● Magnetic and Drain Plug
DR Motor Drain Plug

Brevini® Hydraulic Axial Piston Motor for Lifting of Personnel Winches

	Displacement	L
Fixed Displacement	124.8 cm³/rev [7.613 in³/rev]	336 mm [13.2 in]
	163.9 cm³/rev [9.998 in³/rev]	400 mm [15.8 in]
Variable Displacement	166.2 cm³/rev [10.13 in³/rev]	489 mm [19.2 in]

Lifting of Personnel Winch



Oil Plugs	
Filling plug	Brake Filling Plug
Oil Level Plug	Brake oil Level Plug
Magnetic and Drain Plug	Brake Drain Plug
DR Motor Drain Plug	Brake Releasing Plug

Line pull of Brevini® Lifting of Personnel Winches can be required by filling the Winch Selection Technical Sheet available at the last page of this catalogue.

Our Standard Configurations

Hydraulic Motor Fixed Displacement	124.8 cm³/rev 163.9 cm³/rev	7.613 [in³/rev] 9.998 [in³/rev]
Hydraulic Motor Variable Displacement	166.2 [cm³/rev]	10.13 [in³/rev]
Ratio	61.5 92.57	
Drum	Smooth Drum Special Grooved Drum*	
Rope	Ø 24 [mm] Ø 26 [mm] Ø 28 [mm]	Ø 0.94 [in] Ø 1.02 [in] Ø 1.10 [in]

* As Standard only with rope diameter Ø 26 mm [1.02 in]

International System of Units: SI — BWE160-SD..-01-92,6-APF125

Working layer		1	2	3	4	5	6 Storage length
Line pull	[kg]	16000	14880	13870	12990	12210	-
Rope speed	[m/min]	21	23	25	26	28	-
Rope length	[m]	50	103	162	222	289	357

Brevini® Motor	SH11C125		Advised rope diameter	26	[mm]
Starting lifting pressure	350	[bar]	Oil quantity	46	[l]
Operating pressure	290	[bar]	Estimated weight	1484	[kg]
Operating oil flow at the motor	150	[l/min]	Lifting port	G1	V1
Minimum oil flow at the motor	8	[l/min]	Lowering port	G1	V2
Gear ratio	92,6	[i]	Static braking torque	1172	[Nm]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 24 [mm]	Rope length	[m]	54	111	174	238	309	381
Rope Diameter Ø 28 [mm]	Rope length	[m]	47	96	151	208	271	-

Last indicated Layer is intended only as Storage

United States Customary Units: USC — BWE160-SD..-01-92,6-APF125

Working layer		1	2	3	4	5	6 Storage length
Line pull	[lbf]	35300	32800	30580	28630	26920	-
Rope speed	[fpm]	71	76	82	87	93	-
Rope length	[ft]	166	339	531	729	948	1171

Brevini® Motor	SH11C125		Advised rope diameter	1,02	[in]
Starting lifting pressure	5020	[psi]	Oil quantity	12,15	[gal]
Operating pressure	4185	[psi]	Estimated weight	3271	[lbf]
Operating oil flow at the motor	40	[gpm]	Lifting port	G1	V1
Minimum oil flow at the motor	2,11	[gpm]	Lowering port	G1	V2
Gear ratio	92,6	[i]	Static braking torque	864	[ft·lbf]

Winch mechanisms classification in agreement with F.E.M. (1.001) (Third edition revised on 01.10.1998) M5 (T5-L2) n_2=15 [rpm]

Other Ropes available

Working layer			1	2	3	4	5	6
Rope Diameter Ø 0,94 [in]	Rope length	[ft]	179	365	571	782	1014	1251
Rope Diameter Ø 1,1 [in]	Rope length	[ft]	154	316	497	684	891	-

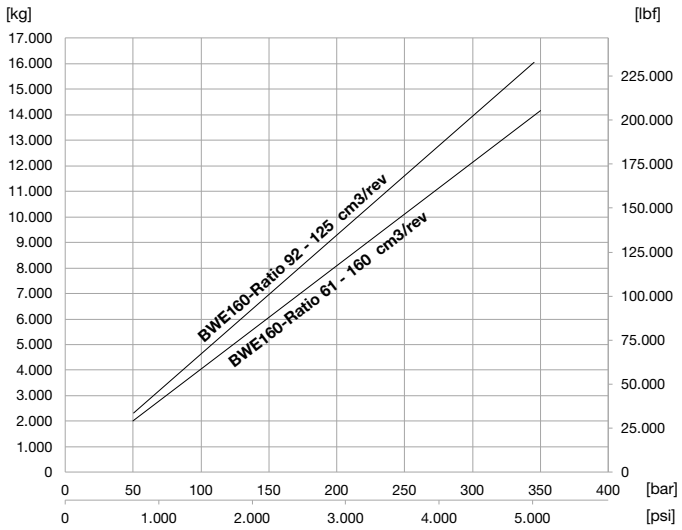
Last indicated Layer is intended only as Storage

Note:

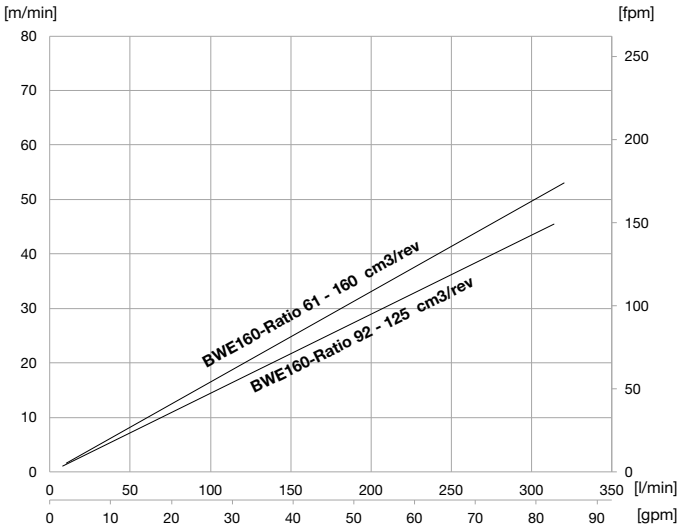
- For safety reasons always keep at least 3 wraps of rope wrapped on the drum.
- Technical features may change with no previous notice from the manufacturer.
- The MBL of the Rope must be verified according to the requested Safety Factors.
- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

Axial Piston Motor Fixed Displacement

Maximum Line pull at first layer

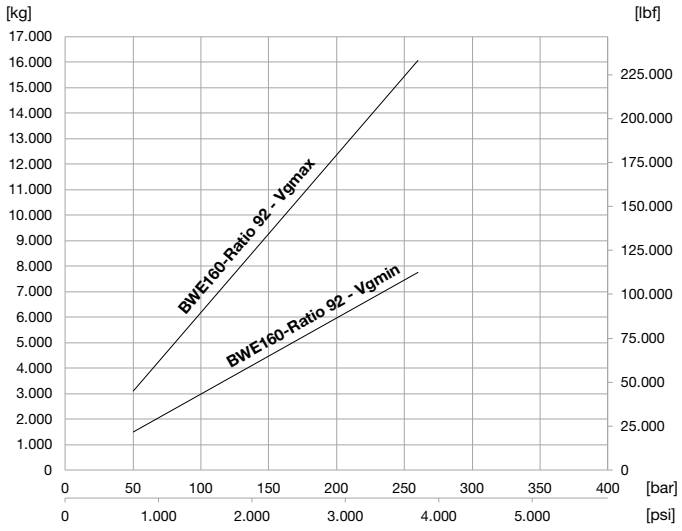


Maximum Speed at first layer



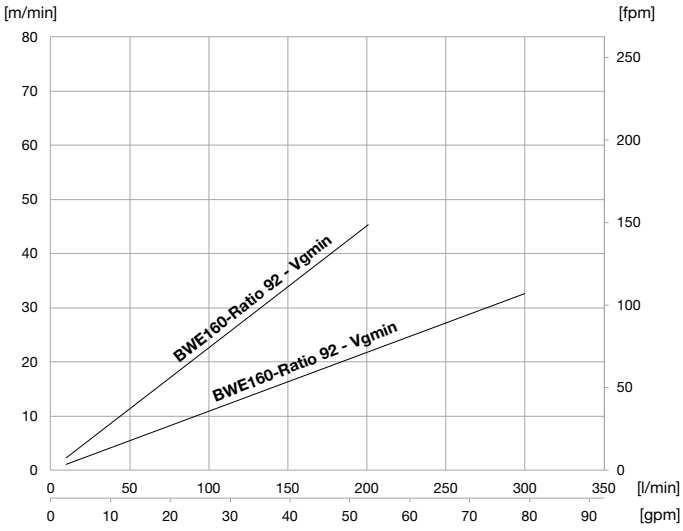
Axial Piston Motor Variable Displacement

Maximum Line pull at first layer



V_{gmax} = 166.2 cm^3/rev [10.13 in^3/rev]
V_{gmin} = 80 cm^3/rev [4.88 in^3/rev]

Maximum Speed at first layer



V_{gmax} = 166.2 cm^3/rev [10.13 in^3/rev] - Max 300 l/min [79 gpm] allowed
V_{gmin} = 80 cm^3/rev [4.88 in^3/rev] - Max 300 l/min [79 gpm] allowed

Note:

- All data shown in this page are ONLY FOR INFORMATION. The actual data will be issued according to Customer application and Duty Cycle.

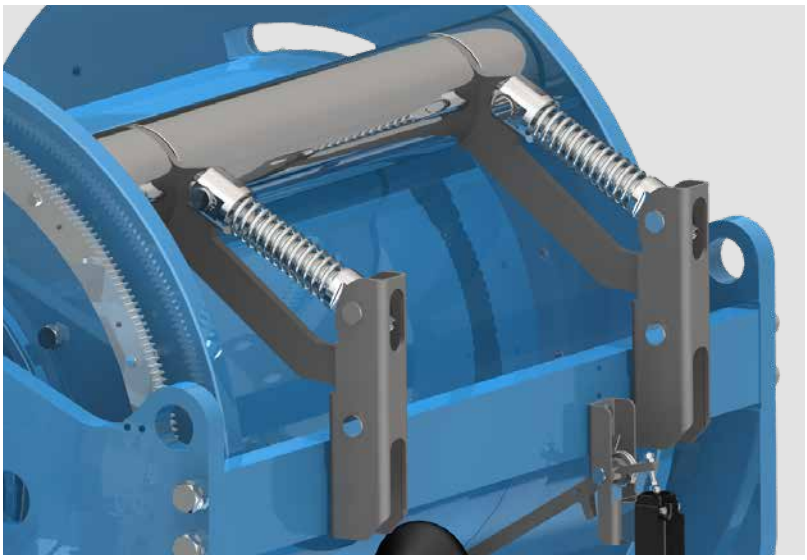
DANA
BREVINI®
Motion Systems

Index - B

B

Accessories

Pressure Roller

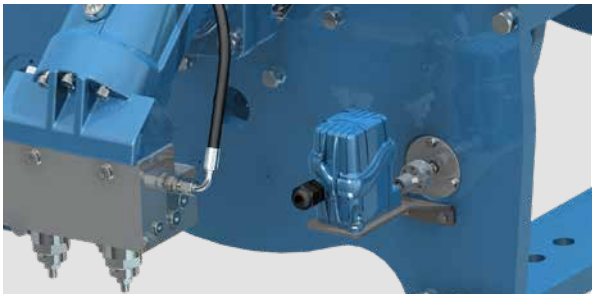


The pressure roller ensures the correct winding of the rope on the drum and is highly recommended when there is more than one layer of rope wounded on the drum.

Safety Wraps Limit Switch

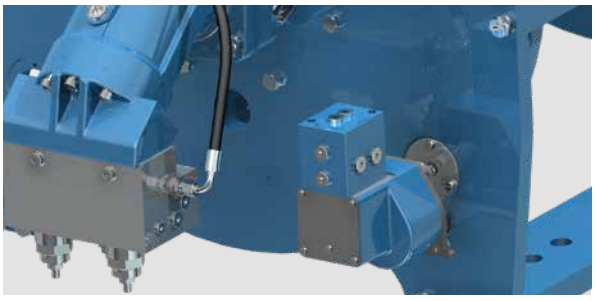
Minimum Electric Limit Switch

Min/Max Rotative Electric Limit Switch



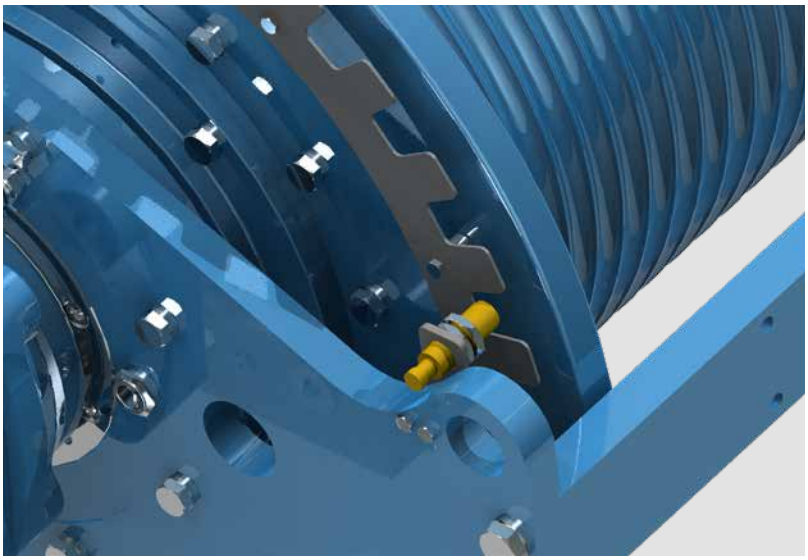
Minimum Hydraulic Limit Switch

Min/Max Rotative Hydraulic Limit Switch



These devices ensure a minimum number of wraps always needed to be wounded on the drum for safety reason, to avoid rope breakage causing the fall of the load.
Rotative Switches also ensure that the maximum rope capacity of the drum is not exceeded.

Speed Sensor: Proximity

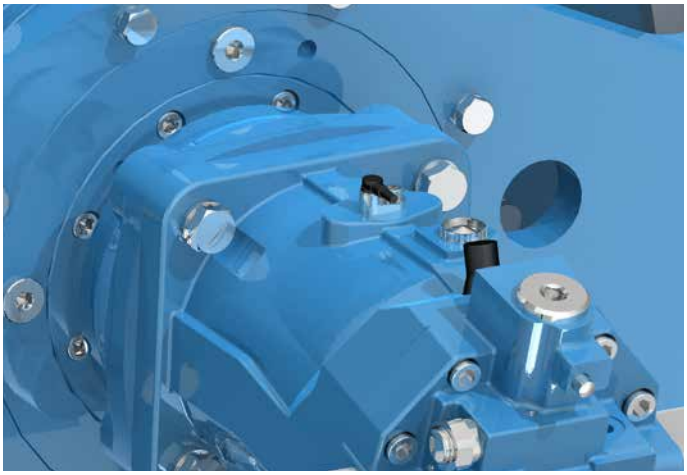


Our stainless-steel Proximity sensor is used to read the rotational speed of the drum, providing the user an information of the rope speed. Using two sensors is also possible to define the sense of rotation of the drum, giving information about lifting or lowering of the load.

Rotative Speed Sensor

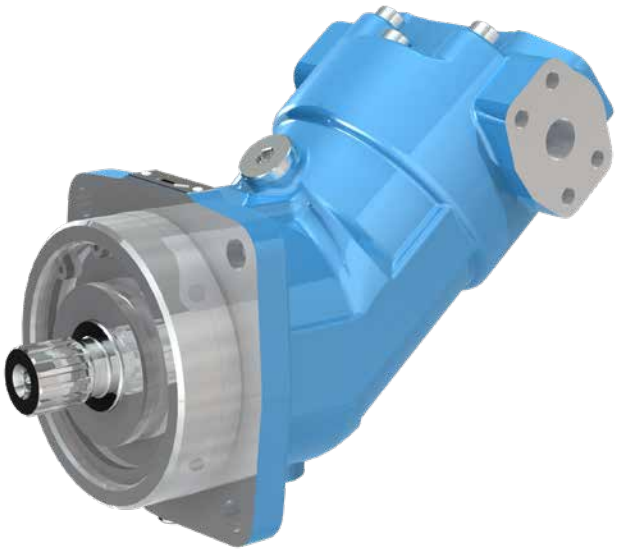
Encoder

Hall Effect Speed Sensor



The Encoder reads the speed of the drum and the rotation direction, providing information on the speed of the rope. Using an absolute encoder is also possible to collect information about the length of the rope still on the drum or unwounded. It is also possible to have the rotative speed sensor on the Brevini® Hydraulic Motor.

Brevini® Axial Piston Motor Fixed Displacement



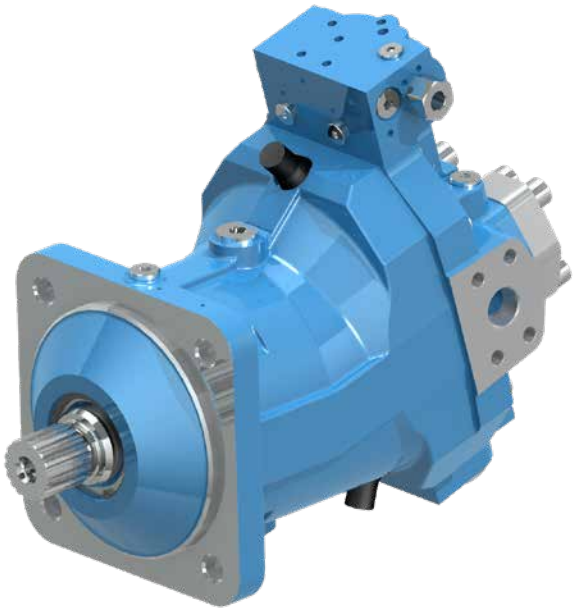
SH11C motors are a family of fixed displacement, bent axis piston design for operation in both open and closed circuit. The proven design incorporating the lens shape valve plate, the high quality components and manufacturing techniques make the SH11C motors able to provide up to 430 bar [6235 psi] continuous and 480 bar [6960 psi] peak performance.
Fully laboratory tested and field proven, these units provide maximum efficiency and long life. Heavy duty bearings permit high radial and axial loads. Versatile design includes a variety of port plates, shaft ends and valves package that will fit the SH11C motors to any application both industrial and mobile. SH11C motors are available in both ISO and SAE version.

Working Conditions

Technical Data							
Size				**075**	**090**	**125**	**160**
Displacement		Vg_{max}	cm^3/rev [in^3/rev]	77.82 [4.747]	86.23 [5.26]	124.8 [7.613]	163.9 [9.998]
Max pressure	Cont.	p_{nom}	bar [psi]	430 [6235]	430 [6235]	430 [6235]	430 [6235]
	Peak	p_{max}	bar [psi]	480 [6960]	480 [6960]	480 [6960]	480 [6960]
Max speed		n_{0max}	rpm	4500	4500	4000	3600
Max flow		q_{max}	l/min [gpm]	350 [92.4]	388 [102.5]	500 [132]	590 [155.76]

Note:
The information stated in this page are only for reference, for detailed information see the dedicated catalog on official site www.dana.com/off-highway

Brevini® Axial Piston Motor Variable Displacement



SH9V series are a family of variable displacement motors, bent axis piston design for operation in both open and closed circuit.

The proven design incorporating the lens shape valve plate, the high quality components and manufacturing techniques make the SH9V series motors able to provide up to 430 bar [6235 psi] continuous and 480 bar [6960 psi] peak performance.

Long life heavy duty bearings permit high radial and axial loads.
Versatile design includes a variety of control and shaft ends that will adapt the SH9V series motors to any application both industrial and mobile.

Working Conditions

Technical Data						
Size				**085**	**115**	**165**
Displacement		Vg_{max}	cm^3/rev [in^3/rev]	85.3 [5.203]	115.7 [7.05]	166.2 [10.13]
	Standard	Vg_{min}	cm^3/rev [in^3/rev]	40 [2.44]	56 [3.416]	80 [4.88]
	Minimum possible	Vg_{min}	cm^3/rev [in^3/rev]	17 [1.03]	23 [1.403]	33 [2.01]
Max pressure	Cont.	p_{nom}	bar [psi]	430 [6235]	430 [6235]	430 [6235]
	Peak	p_{max}	bar [psi]	480 [6960]	480 [6960]	480 [6960]
Max flow		q_{max}	l/min [gpm]	341 [90.02]	411 [108.5]	515 [135.96]

Controls and accessories suggested

Electric two position Control 2EE

The 2EE Control Version with the pressure override allows the motor to swivel to Vg_{max} when the pressure setting is reached. The motor displacement is adjusted to Vg_{min} when the solenoid valve is switched on and if the operating pressure rises beyond the pressure setting, the pressure limiting device overrides the electric two positions control and the motor swivels out to Vg_{max}. Swivel range is from Vg_{min} to Vg_{max}.

Hall Effect Speed sensor

TW and TZ sensors are available on all the Motor Displacement, see the dedicated catalogue.

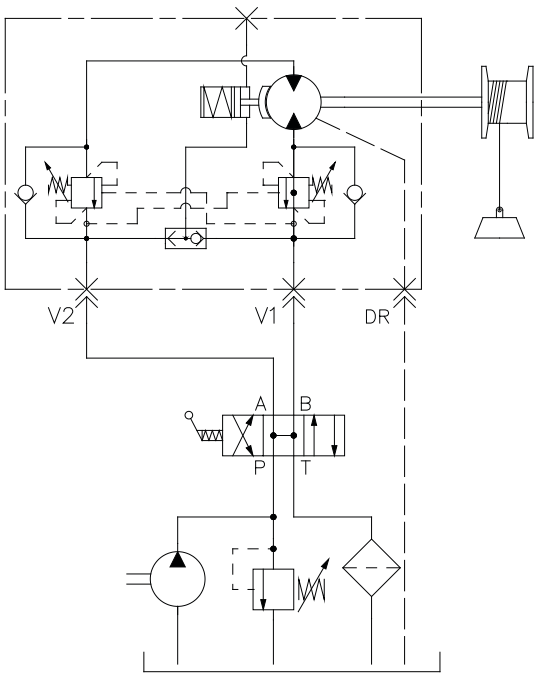
Note:

The information stated in this page are only for reference, for detailed information see the dedicated catalog on official site www.dana.com/off-highway

Installation Advice

The winch support frame must be fixed securely to a good level surface of adequate thickness. Use quality and grade fixing nuts and bolts with correct torque setting according to dimensional drawings.

A and B ports of the proportional directional valve must be open to tank while the control valve is in neutral position. This prevents any build up of hydraulic pressure which could cause the negative brake to accidentally open.



The supply, return and drain hoses must all be of adequate internal dimensions to support the maximum working and drainage flow rates.

Draining hoses must always flow directly to the oil reservoir.

Standard hoisting direction is “01”, clockwise. For anti-clockwise, “02”, hoisting direction please specify when ordering.

The Brevini® winches are designed to hold 5 layers of cable of which 3 windings always present at the 1st layer.

Carefully follow the cable manufacturers instructions and respect all guidelines and rules ordering.

For Hydraulic oil use mineral oils with wear resistant additives, type HLP (DIN51524) or HM (ISO 6743/4) and viscosity according to ISO VG46. Recommended filtration 10µm absolute or ß10-75.

For the Brevini® motorized winches, use gear mineral oil with E.P. characteristics according to ISO VG150 or SAE 80W/90. For applications exposed to extreme temperature changes, use a synthetic oil with E.P. properties, with minimum viscosity of ISO VG150 or SAE 80W/90.

It is recommended to turn on the machinery without load for 5÷10 minutes at start-up.

Lubrication

Brevini® winches are supplied with lubricant: mineral oil ISO VG150.

Fundamental characteristics of the oils

The important parameters to consider when choosing the type of oil are:
- viscosity at nominal operating conditions
- additives

The same oil must lubricate the bearings, the gears and the brake.
All these components work inside the same box, in different operating conditions.

Viscosity

Nominal viscosity refers to a temperature of 40°C, but rapidly decreases as the temperature increases. If the gear unit operating temperature is between 50°C and 70°C, a nominal viscosity can be chosen according to the following guide table, choosing the highest viscosity if the highest operating temperature is foreseen.

Additives

In addition to the normal anti-foaming and antioxidant additives, it is important to use lubricating oils with additives that provide EP (extreme pressure) and antiwear properties, according to ISO 6743-6 L-CKC or DIN 51517-3 CLP. The lower the gear unit output speed is the more marked the EP characteristics of the products have to be. It should be remembered that the chemical compounds replacing hydrodynamic lubrication are formed to the detriment of the original EP load. Therefore, with very low speeds and high loads it is important to respect the maintenance intervals so as not to excessively diminish the lubricating characteristics of the oil.

Types of oils

The oils available generally belong to three large families.
- Mineral oils
- Polyalphaolefin (PAO) synthetic oils
- Polyalkylene glycol (PAG) synthetic oils

The most suitable choice is generally tied to the conditions of use.
Gear units that are not particularly loaded and with a discontinuous operating cycle, without considerable temperature ranges, can be lubricated with mineral oil.
In cases of heavy use, when the gear units are very loaded and in a continuous way, with resultant temperature increase, it is best to use polyalphaolefin synthetic lubricants.
The use of polyalkylene glycol oils is not allowed as they are not compatible with other oils and are often completely mixable with water: this phenomenon is particularly dangerous because it is not noticed, but rapidly diminishes the lubricating properties of the oil. Moreover, these lubricants can be chemically active against the oil seals and paint inside the gear unit.
In addition to the above, there are also hydraulic oils and oils for the food industry.
The former are used for the command of negative brakes.
The latter have a specific use in the food industry since they are special products that are not harmful to health.
Given below is table of lubricants, proposed by the best-known producers, with characteristics suitable for the lubrication of Brevini® gear units.

Contamination

During normal operation, due to running-in of the surfaces, metallic micro-particles will inevitably form in the oil. This contamination can shorten the life of the bearings, resulting in early break-down of the gear unit. To limit and control this phenomenon, without resorting to frequent and costly oil changes, a suitable auxiliary oil circulation system with filtering and cooling of the oil must be provided. This system offers the dual advantage of controlling the level of contamination through the use of special filters and stabilizing the operating temperature at a level more suitable for ensuring the required viscosity. For lubrication problems with gear units intended for particular uses, regarding the construction type and operating parameters, it is advisable to contact the Dana Sales Dept.

Manufacturer	Mineral oils			Poly-Alpha-Olefin synthetic oils (PAO)		
	ISO VG 150	ISO VG 220	ISO VG 320	ISO VG 150	ISO VG 220	ISO VG 320
ADDINOL	Eco Gear 150 M	Eco Gear 220 M	Eco Gear 320 M	Eco Gear 150 S	Eco Gear 220 S	Eco Gear 320 S
ARAL	Degol BG 50 Plus	Degol BG 220 Plus	Degol BG 320 Plus	Degol PAS 150	Degol PAS 220	Degol PAS 320
BP	Energol GR-XP 150	Energol GR-XP 220	Energol GR-XP 320	Enersyn EPX 150	Enersyn EPX 220	Enersyn EPX 320
CASTROL	Alpha SP 150	Alpha SP 220	Alpha SP 320	Alphasyn EP 150	Alphasyn EP 220	Alphasyn EP 320
CEPSA	Engranajes XMP 150	Engranajes XMP 220	Engranajes XMP 320	-	Aerogear Synt 220	Aerogear Synt 320
CHEVRON	-	-	-	Tegra Synthetic Gear 150	Tegra Synthetic Gear 220	Tegra Synthetic Gear 320
ENI	Blasia 150	Blasia 220	Blasia 320	Blasia SX 150	Blasia SX 220	Blasia SX 320
FUCHS	Renolin CLP Gear Oil 150	Renolin CLP Gear Oil 220	Renolin CLP Gear Oil 320	Renolin Unisyn CLP 150	Renolin Unisyn CLP 220	Renolin Unisyn CLP 320
KLÜBER	Klüberoil GEM 1-150 N	Klüberoil GEM 1-220 N	Klüberoil GEM 1-320 N	Klübersynth GEM 4-150 N	Klübersynth GEM 4-220 N	Klübersynth GEM 4-320 N
LUBRITECH	Gearmaster CLP 150	Gearmaster CLP 220	Gearmaster CLP 320	Gearmaster SYN 150	Gearmaster SYN 220	Gearmaster SYN 320
MOBIL	Mobilgear XMP 150	Mobilgear XMP 220	Mobilgear XMP 320	Mobil SHC Gear 150	Mobil SHC Gear 220	Mobil SHC Gear 320
MOBIL	-	-	-	SHC 629	SHC 630	SHC 632
MOLIKOTE	L-0115	L-0122	L-0132	L-2115	L-2122	L-2132
NILS	Ripress EP 150	Ripress EP 220	Ripress EP 320	Atoil Synth PAO 150	-	Atol Synth PAO 320
PANOLIN	-	-	-	EP Gear Synth 150	EP Gear Synth 150	EP Gear Synth 150
Q8	Goya NT 150	Goya NT 220	Goya NT 320	El Greco 150	El Greco 220	El Greco 320
REPSOL	Super Tauro 150	Super Tauro 220	Super Tauro 320	Super Tauro Sintetico 150	Super Tauro Sintetico 220	Super Tauro Sintetico 320
SHELL	Omala S2 G 150	Omala S2 G 220	Omala S2 320	Omala S4 GX 150	Omala S4 GX 220	Omala S4 GX 320
SHELL	-	-	-	Morlina S4 B 150	Morlina S4 B 220	Morlina S4 B 320
SUNOCO	Sun EP 150	Sun EP 220	Sun EP 320	-	-	-
TEXACO	Meropa 150	Meropa 220	Meropa 320	Pinnacle EP 150	Pinnacle EP 220	Pinnacle EP 320
TOTAL	Carter EP 150	Carter EP 220	Carter EP 320	Carter SH 150	Carter SH 220	Carter SH 320
TRIBOL	1100/150	1100/220	1100/320	-	-	1510/320

Selection Winch Technical Sheet

DANA BREVINI Motion Systems		Date	Salesman
		Subsidiary	Requested lead time for quotation

Customer			Customer type [OEM; End User;..]
Contact person			Market Sector
Product to be replaced	or new application ☐		Machine Type
Winches q.ty / batch			Winches q.ty / year
Requested Lead Time Prototype			Requested Lead Time Series
Target Price Prototype			Target Price Series
Description of the application			

Winch characteristics

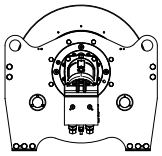
Winch type	Lifting ☐	Pulling ☐	Lifting person ☐	Lifting person + cargo ☐			
Drum	Smooth ☐	Grooved ☐	Helical left ☐	Helical right ☐	Lebus style left ☐	Lebus style right ☐	

Req. Line pull on drum [kg]		Rope diameter [mm]	
At layer		Storage Rope Length[m]	
Req. Speed on drum [m/min]		Working Rope Lenght[m]	
At layer			

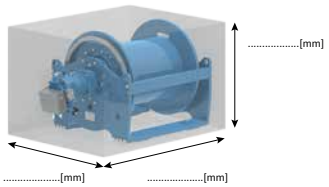
FEM class or Duty cycle available		Certifications	
		Standards	

Ambient temperature [°C]		Operating temperature [°C]	

Exit of the rope



maximum dimension or other limitations



Drawings or indications

Motor power supply

Motor not included into supply ☐ Electric ☐ Hydraulic ☐

Model*	Manufacturer*
Flange type*	Shaft type*

Electric	**Hydraulic**
Supply Frequency [Hz]	Max pressure available at the motor [bar]
Supply Voltage [V]	Working Pressure [bar]
N. of Poles*	Displacement [cc/rev]* min: max:
	Max oil flow available at the motor[l/min]

*** Fill up only if the motor is not included into supply**

Accessories

Rope**	Included ☐	Not included ☐	Pressure roller**	Included ☐	Not included ☐
Encoder**	Included ☐	Not included ☐	Press. Roller Limit switch	Electric ☐	Hydr. ☐
Roller fairleader**	Included ☐	Not included ☐		Min(empty drum) ☐	Max(full drum) ☐
Rotative Limit switch**	Included ☐	Not included ☐	Mounting position	 ☐	 ☐  ☐
Auxiliary Brake**	Included ☐	Not included ☐			
Torque limiter**	Included ☐	Not included ☐			
Drum Rev. Counter**	Included ☐	Not included ☐	Painting (Cycle/RAL/gloss)		
Others:	Included ☐	Not included ☐			

**** if the customer has special requirements about accessories please add the specification as attachment**

Notes/ Other special requests

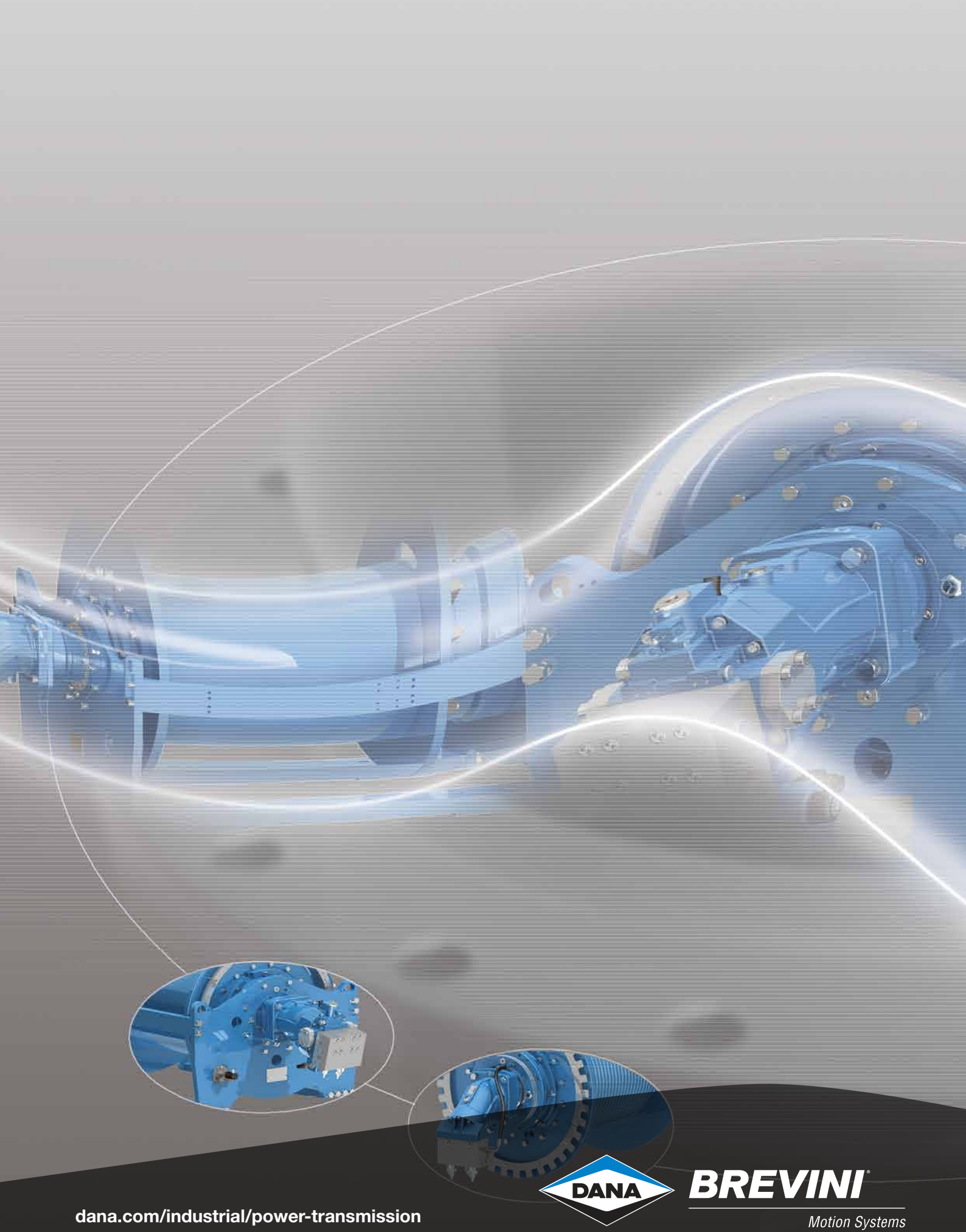
Attachments Yes ☐ No ☐

Note

Note

Note

Note



dana.com/industrial/power-transmission

DANA

BREVINI®

Motion Systems

Application Policy

Capacity ratings, features, and specifications vary depending upon the model and type of service. Application approvals must be obtained from Dana; contact your representative for application approval. we reserve the right to change or modify our product specifications, configuration, or dimensions at any time without notice.