Italgroup®

HYDRAULIC MOTORS

ITALY

W

WHEEL MOTORS

ITALGROUP WHEEL MOTORS
W SERIES
TECHNICAL CATALOGUE
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Hydraulic motors of the W series are crankshaft radial piston motors combined with single stage planetary gearbox, rear case mounting and wheel flange. Thanks to great variety of accessories W series is a complete wheel drive for open or closed circuits used in a wide range of applications such as:

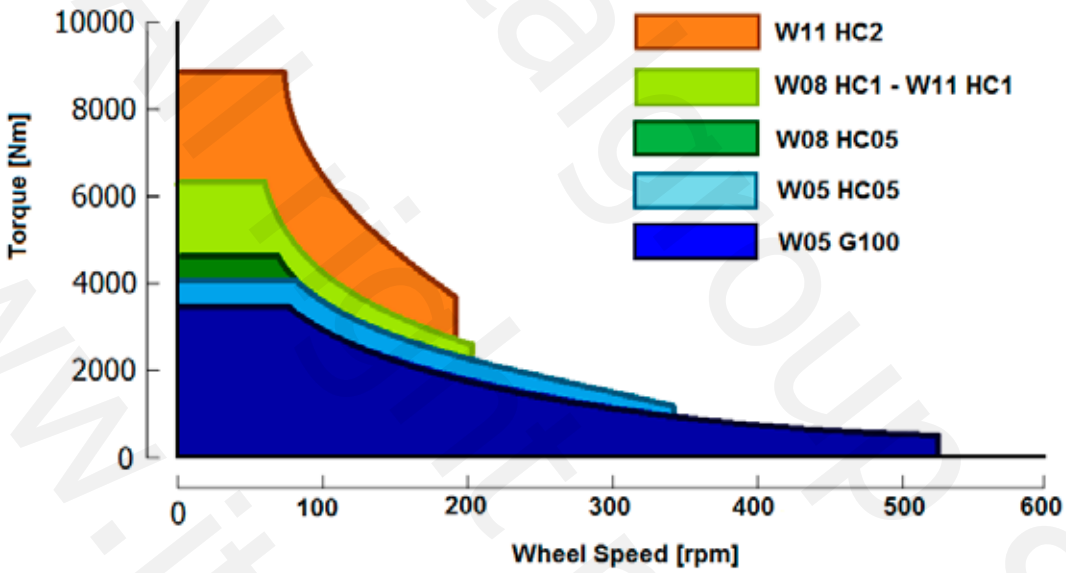
- Agricultural and forestry machines
- Municipal vehicles
- Airport machinery
- Fork lifts trucks
- Skid steer loaders
- Dumpers
- Mining machines
- Self-propelled trailers
- Undercarriages
- Winches and Cranes drive
- Conveyors drive

Product Features:

- ✓ High volumetric and mechanical efficiencies
- ✓ Very smooth running at low speeds
- ✓ High starting torque / constant torque
- ✓ Wide speed range
- ✓ Compact Design
- ✓ Low maintenance and high reliability
- ✓ Rear case mount
- ✓ Bi-directional
- ✓ Single/Dual speed
- ✓ Open/closed circuits
- ✓ High radial and axial force allowed on output flange
- ✓ Freewheeling (hydraulic type and complete mechanical disengagement type)
- ✓ Speed sensor available
- ✓ Parking brake available
- ✓ Dynamic brake available
- ✓ Built-in valves available

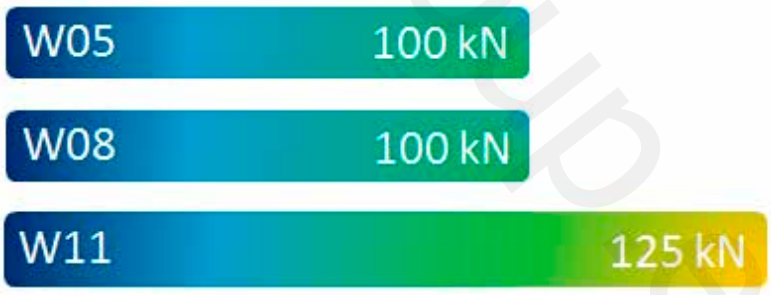
WIDE OPERATING RANGE

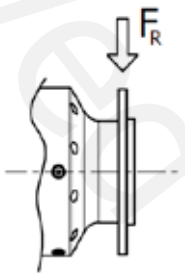
High starting torque



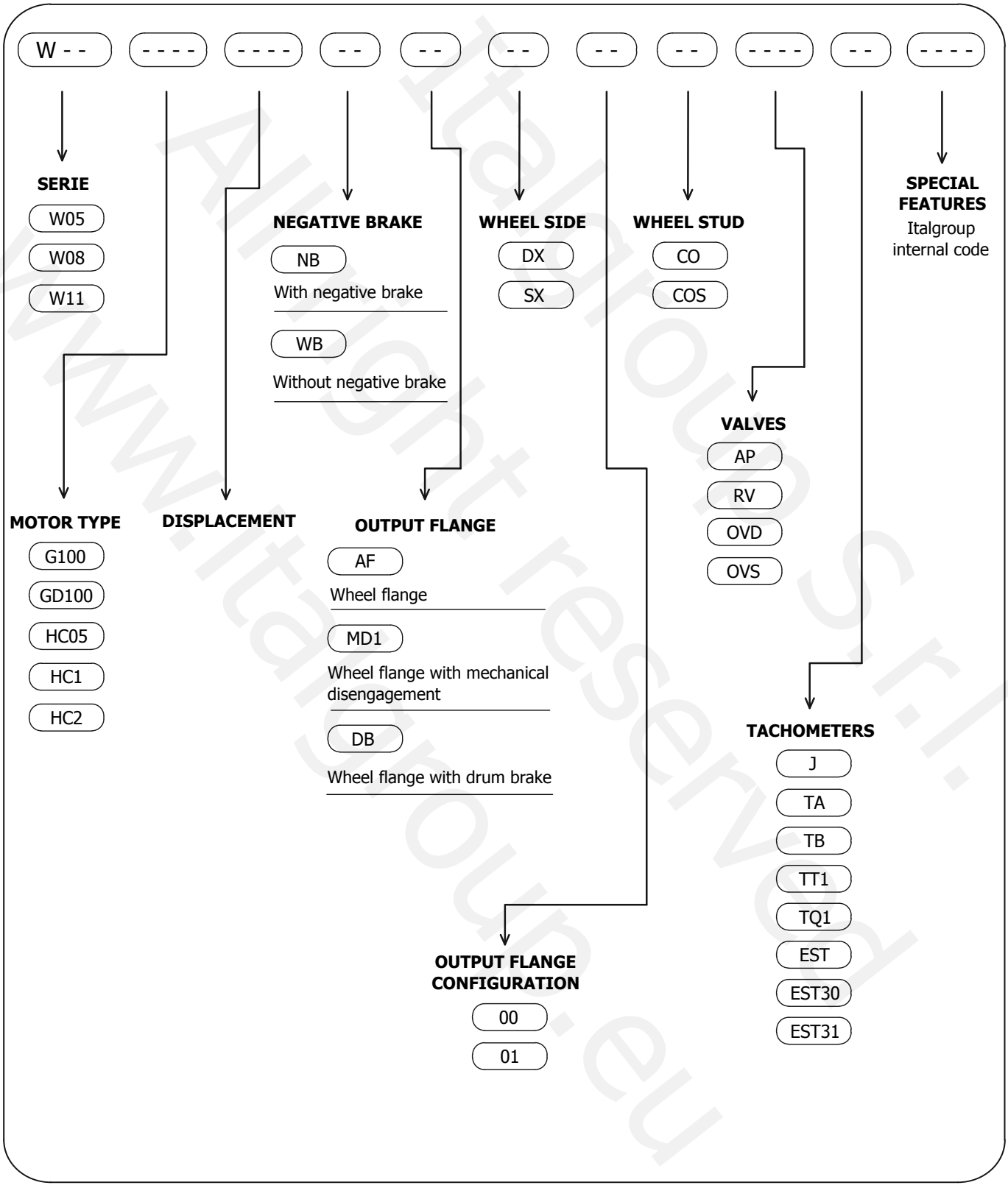
BIG LOAD CAPACITY

Permissible Radial Loads on motor output flange (Fr)



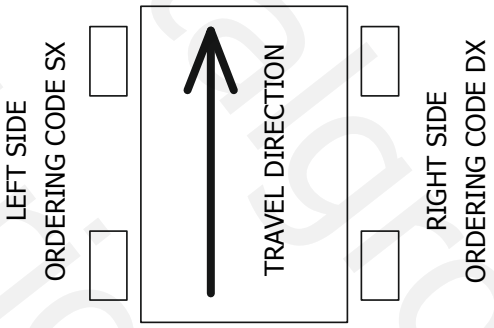


ORDERING CODE



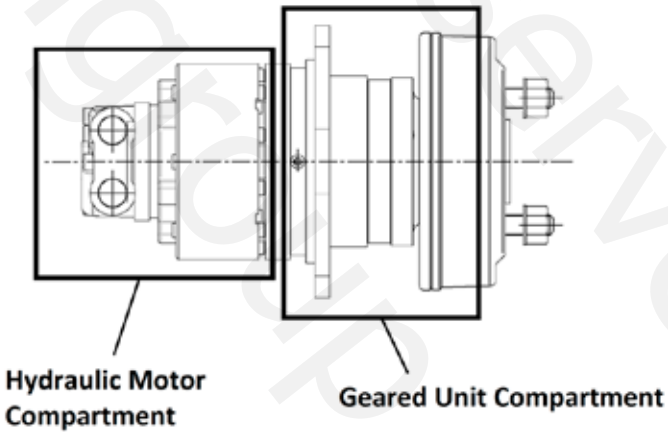
DRUM BRAKE DB

When the wheel motor is equipped with dynamic brake (drum brake, output flange DB), and when handbrake is needed, customer needs to specify an additional information on the ordering code. Infact, the wheel motor can be positioned on the left or right side. Refer to the below scheme for better understanding. Contact Italgroup for further information/requests.



Dynamic brake is usually operating with brake fluid (like DOT 3 or DOT 4); if you want to activate dynamic brake with other fluids (like hydraulic motor fluid for example, see fluid recommendations), specify it into the order or contact Italgroup for further information.

WHEEL MOTOR - OIL COMPARTMENTS



The W series wheel motors are composed of two different oil compartments, the first one is the hydraulic motor compartment and the second one is the geared unit compartment. Please refer to the following recommendations in order to grant the proper lubrication of the entire unit.

Installation	Hoses and piping must be clean and free from contamination. No other special requirements are necessary. - Motor can be mounted in any position - In run-away conditions you must use counterbalance valves - Consult factory for intermittent applications Splined adaptors (sleeves) are available upon request.
Installation circuit	The choice of open or closed loop circuit will be determined by the application. Open loop circuits are cheaper and simpler to install. Closed loop circuit is a superior circuit and usually takes up less space. It also offers better control features.
Start up	Motor case and pistons must be completely filled with oil before starting. Do not load motor to maximum working pressure instantly. During cold start-up avoid high-speed operation until the system reach the working temperature.
Case Drain – Case Pressure	Connect the case drain directly to tank. The case drain port on the motor must be located on the highest point of the installation to ensure that the motor will always be full of oil. The case drain pressure must not exceed 6 bar continuous pressure. (See drain recommendations page for more details)
Important	When the motor is installed vertically with shaft pointing upwards, consult our Technical Department. If the motor is connected to high inertial loads, the hydraulic system must be designed to prevent peaks of pressure and cavitation.
Temperature	Maximum oil temperature must not exceed 70°C (Please refer to hydraulic fluid recommendations). Heath exchangers must be used with higher temperatures.
Viscosity	The motor works satisfactory in a range of 3°E to 10°E oil viscosity. Best performance is obtained at the highest viscosity. (Please refer to hydraulic fluid recommendations)
Back Pressure	Don't exceed 70 bar back pressure.

Minimum speed

W series wheel motors can reach very low operational speeds, depending by motor displacement, ambient and working conditions. Applying a reasonable back pressure the minimum speed can be reduced. For more information please contact our technical department.

Flushing

The operating fluid viscosity must always be higher than a certain minimum value (see "fluid recommendation" section) in order to guarantee an optimal motor internal lubrication. When the working conditions cause the motor case overheating above a critical value, the motor flushing is required. Flushing consists in the introduction of fresh oil (taken from the hydraulic circuit) into the motor case. Oil must be taken from the return line to avoid internal motor damage (the continuous motor case pressure must be maximum 6 bar). Flushing is an important operation that can be very effective to improve motor lifetime with heavy duty working conditions and improve the motor mechanical efficiency. Italgroup can provide you flushing valves in order to perform an effective flushing circuit.

For more details on the above mentioned arguments and for any further information please contact our technical department.

GEAR UNIT INSTRUCTIONS AND ADVICES

The gear unit maintenance requires the periodic change of the oil and the lubrificant level monitoring. We advice to change the oil before 100 hours (during the gear unit running-in), and every 800 hours, and at least one time par year.
The recommended gear unit mineral oils are the following:

AGIP BLASIA 220
SHELL OMALA EP 220
BP ENERGOL GR-HP 220
ESSO SPARTAN EP 220
ELF REDULTELF SP 220
MOBIL MOBILGEAR 630

To fill the gear unit with lubrificant it is necessary rotate the group to let the two plugs to be in the correct position (see fig.1). After this the two plugs must be removed and the gear unit must be filled with mineral oil until the oil will flows out from the upper plug hole.

To remove the gear unit lubrificant it is necessary rotate the group to be in the correct position (see fig. 2). After this the two plugs must be removed; this will let the mineral oil flows out easily. To do this operation in the most easy way the oil must be warm. A frequent oil level checking it is recommended. It is a good rule do this check every 80 working hours. Assure that the system it is clean before start the unit it is compulsory.

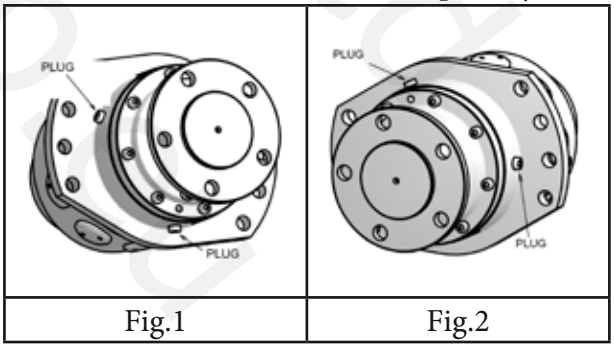


Fig.1 Fig.2

Fluid selection

In general, we recommend the use of hydraulic oils with minimum viscosity index of 95, with anti-wear additives (ISO HM and HV). Once normal working temperature is reached, the drain oil viscosity must be at least 44 cSt, preferably in the range from 50 to 80 cSt.
HE oils (ecological fluids) are allowed, but must be used with particular attention, because them can influence the motor seals compatibility, and can reduce motor performances and life. Please contact us in case of HE oils usage.

Optimal viscosity selection

Referring the first approximated selection to the room temperature, we advice the following:

Room temperature	*Oil*
-20°C/0°C	BP ENERGOL HLP – HM 22
-15°C/+5°C	BP ENERGOL HLP – HM 32
-8°C/+15°C	BP ENERGOL HLP – HM 46
0°C/+22°C	BP ENERGOL HLP – HM 68
+8°C/+30°C	BP ENERGOL HLP – HM 100
-20°C/+5°C	BP BARTRAN HV 32
-15°C/+22°C	BP BARTRAN HV 46
0°C/+30°C	BP BARTRAN HV 68

ATF (automatic transmission fluid) oils, SAE 10-20-30 W oils, multigrade motor oils (SAE 15 W 40, 10 W 40), universal oils, can also be used. Always fill the motor (please refer to the "DRAIN RECOMMENDATIONS" section) with the selected hydraulic fluid before motor start-up. During cold start-up avoid high-speed operation until the system reach the working temperature, in order to provide an adequate lubrication. Every 5-8 °C of increase respect to the optimal working temperature for the selected oil, the hydraulic fluid life decrease of about 40-50% (refer to "OXIDATION" section). Consequently, the motor lifetime will be affected by the working temperature increase respect to the optimal working temperature of the selected oil. The maximum continuous working temperature is 70 °C, the temperature must be measured from motor drain line. If the motor doesn't have a drain line, the temperature must be evaluated at the return line port.

Fire resistant oil limitations

	Max cont. Pressure [bar]	Max int. Pressure [bar]	Max Speed [rpm]
HFA, 5-95% oil-water	103	138	50%
HFB, 60-40% oil-water	138	172	100%
HFC, water-glycol	103	138	50%
HFD, ester phosphate	250	293	100%

Filtration	Hydraulic systems oil must always be filtered. The choice of filtration grade derives from needs of service life and money spent. In order to obtain stated service life it is important to follow our recommendations concerning filtration grade. When choosing the filter it is important to consider the amount of dirt particles that filter can absorb and still operate satisfactorily. For that reason we recommend filters showing when you need to substitute filtering cartridge. · 25 µm filtration required in most applications · 10 µm filtration in closed circuit applications
Oxidation	Hydraulic oil oxidizes with time of use and temperature. Oxidation causes changes in colour and smell, acidity increase or sludge formation in the tank. Oxidation rate increases rapidly at surface temperatures above 60°C, in these situations oil should be checked more often. The oxidation process increases the acidity of the fluid; the acidity is stated in terms of the "neutralization number". Oxidation is usually slow at the beginning and then it increases rapidly. A sharp increase (by a factor of 2 to 3) in neutralization number between inspections shows that oil has oxidized too much and should be replaced immediately.
Water content	Oil contamination by water can be detected by sampling from the bottom of the tank. Most hydraulic oils repel the water, which then collects at the bottom of the tank. This water must be drained off at regular intervals. Certain types of transmission oils and engine oils emulsify the water; this can be detected by coatings on filter cartridges or a change in the colour of the oil. In such cases, obtain your oil supplier advice.
Degree of contamination	Heavy contamination of the oil causes wear rising in hydraulic system components. Contamination causes must be immediately investigated and remedied.
Analysis	It is recommended oil being analyzed every 6 months. The analysis should cover viscosity, oxidation, water content, additives and contamination. Most oil suppliers are equipped to analyze oil state and to recommend appropriate action. Oil must be immediately replaced if the analysis shows that it is exhausted.

Features	Type: BABSL Form: AS DIN 3760 Material: SIMRIT® 72 NBR 902 SIMRIT® 75 FKM 595
Material	SIMMERRING® radial shaft seal with rubber covered O.D., short, flexibility suspensed, spring loaded sealing lip and additional dust lip: see Part B/SIMMERRING®, sections 1.1 and 2.
Application	Sealing lip and O.D.: – Acrylonitrile-butadiene rubber with 72 Shore A hardness (designation: SIMRIT® 72 NBR 902) – Fluoro rubber with 75 Shore A hardness (designation: SIMRIT®75 FKM 595) Metal insert: – Plain steel DIN 1624 Spring: – Spring steel DIN 17223
Operating conditions	See Part B/ SIMMERRING®, sections 2. 4. Media: mineral oils, synthetic oils Temperature: -40°C to +100°C (SIMRIT® 72 NBR 902) -40°C to +160°C (SIMRIT® 75 FKM 595) Surface speed: up to 5 m/s Working pressure: see diagram on next page, pressure is function of surface speed (i.e. of rotating speed and shaft diameter)

Housing and machining criteria

See Part B/ SIMMERRING®, sections 2.

Shaft:

Tolerance:	ISO h11
Concentricity:	IT 8
Roughness:	Ra=0.2-0.8 µm
	Rz=1-4 µm
	Rmax=6 µm
Hardness:	45-60 HRc
Roughness:	non oriented;

preferably by plunge grinding

Housing:

Tolerance:	ISO H8
Roughness:	Rmax<25 µm

Pressure diagram

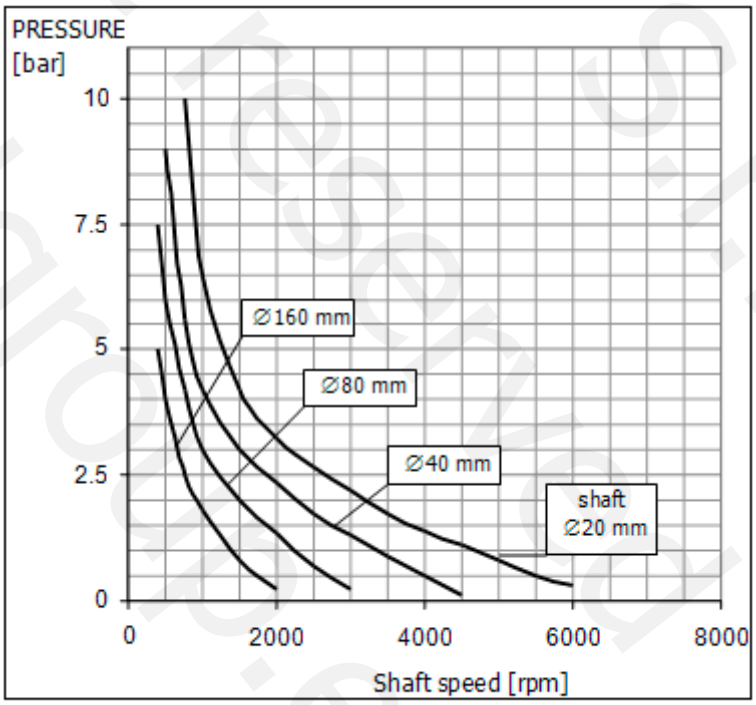


Diagram 1: Pressure Loading Limits

GEAR UNIT SHAFT SEAL FEATURES

Features	Type: BASL Form: AS DIN 3760 Material: SIMRIT® 72 NBR 902 SIMRIT® 75 FKM 595
Material	SIMMERRING® radial shaft seal with rubber covered O.D., short, flexibility suspensed, spring loaded sealing lip and additional dust lip: see Part B/SIMMERRING®, sections 1.1 and 2.
Application	Sealing lip and O.D.: – Acrylonitrile-butadiene rubber with 72 Shore A hardness (designation: SIMRIT® 72 NBR 902) – Fluoro rubber with 75 Shore A hardness (designation: SIMRIT®75 FKM 595) Metal insert: – Plain steel DIN 1624 Spring: – Spring steel DIN 17223
Operating conditions	See Part B/ SIMMERRING®, sections 2. 4. Media: mineral oils, synthetic oils Temperature: -40°C to +100°C (SIMRIT® 72 NBR 902) -40°C to +160°C (SIMRIT® 75 FKM 595) Surface speed: up to 5 m/s Working pressure: up to 0,05 MPa/0,5 bar

Housing and machining criteria

See Part B/ SIMMERRING®, sections 2.

Shaft:

Tolerance:	ISO h11
Concentricity:	IT 8
Roughness:	Ra=0.2-0.8 µm
	Rz=1-4 µm
	Rmax=6 µm
Hardness:	45-60 HRc
Roughness:	non oriented;

preferably by plunge grinding

Housing:

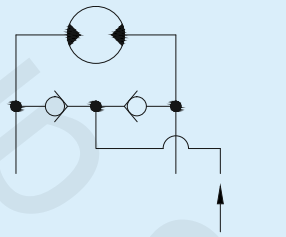
Tolerance:	ISO H8
Roughness:	Rmax<25 µm

Freewheeling

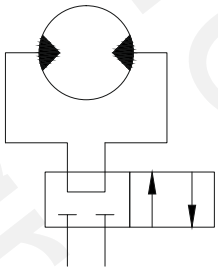
In hydraulic special applications like for example drilling machines, mobile applications, cavitation may be present. Infact when the motor is forced to run at a certain speed that requires an oil flow that is not disposable from the pump, in a transitory or continuous situation, the oil pressure inside the motor pistons decrease and can cause many problems like tractive forces on connecting rods retaining rings, metallic erosion (due to the air/vapor bubbles that develop when the piston pressure is very low and explodes when pressure rise above the equilibrium vapor pressure) and overheating.
It's always better to avoid motor cavitation or at least reduce it during operation (installing for example proper valves and using well designed circuits) but when this event cannot be avoided HC series motors are a very good solution in order to guarantee the correct motor operation in a safe and efficient way. It's always good to take into consideration circuit modifications in order to avoid cavitation mainly because the other components that are present in the circuit can be more sensible to the problem than the HC motor, therefore the HC can have an efficiency loss due not to the motor characteristics but to a bad cavitation resistance of the other circuit components.

Pressurization circuit

Please notice that using an auxiliary pump or a properly designed oil accumulator, in many cases (through the low pressure pipe pressurization) cavitation can be avoided or in all cases much reduced.



Low-speed freewheeling circuit

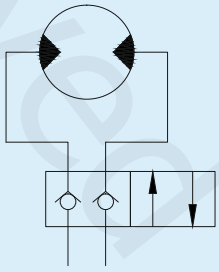


When the freewheeling requested speed is not high, the circuit shown on the left can be used. The speed for example can be controlled through a variable throttle valve. The main problem is that especially when throttle is acting, oil temperature can reach critical values.

IMPORTANT NOTE:
For freewheeling operation always select wheel motors composed by HC motors.

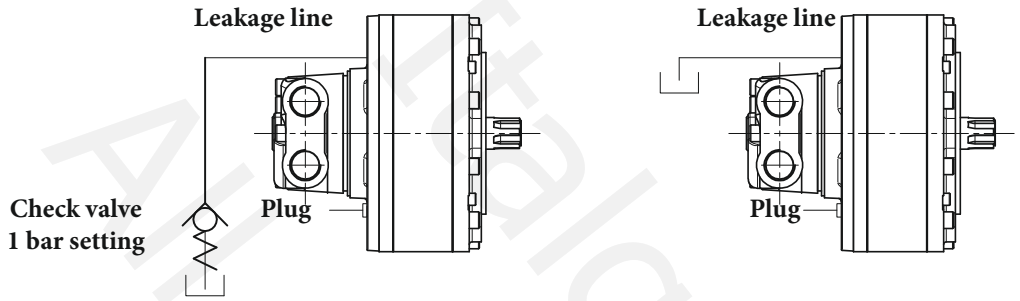
High-speed freewheeling circuit

Realizing the freewheeling in this particular way the motor operates without oil into the pistons, so the energy consumption is always the same and indipendent by the motor speed. In addition this energy loss is very low. This is the most suitable circuit for high speed freewheeling operation.

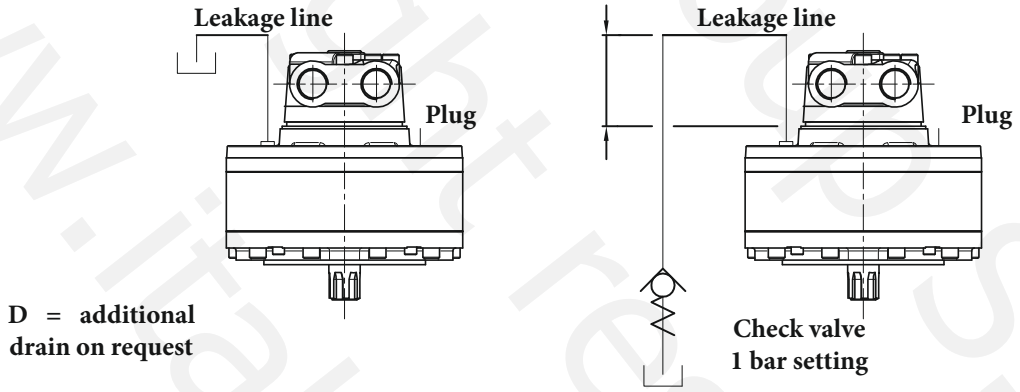


For more details on the above mentioned arguments and for any further information please contact our technical department.

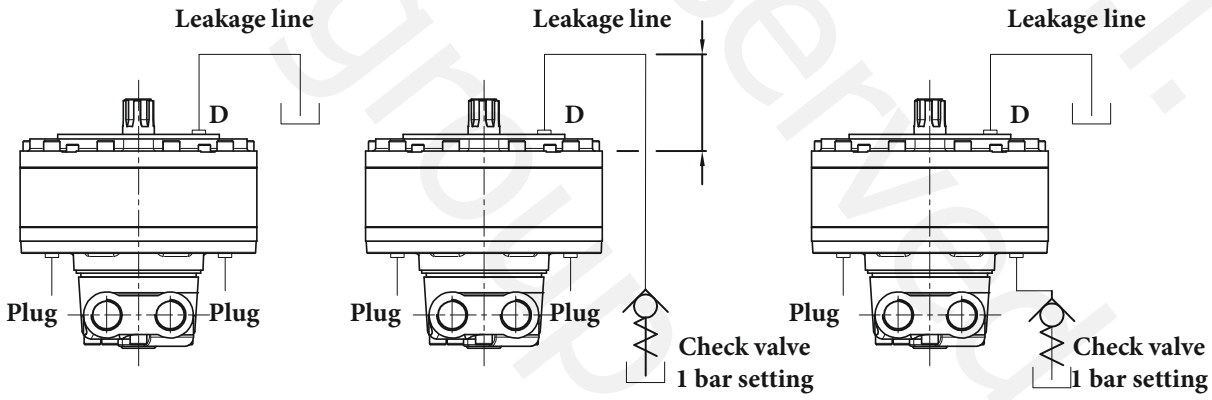
Motor axis horizontal



Motor axis vertical, shaft down



Motor axis vertical, shaft up



Leakage line connection

Always fill the motor with hydraulic fluid before start-up. Arrange piping in a way that the motor cannot drain off and cannot generates air bubbles into the motor case. Under certain conditions may be is necessary to arrange a check valve in order to help avoiding the motor drain off. Always check carefully that the leakage line pressure doesn't overcome 6 bar pressure: therefore leakage lines must be shorter as possible and with a minimum flow resistance.

Important note

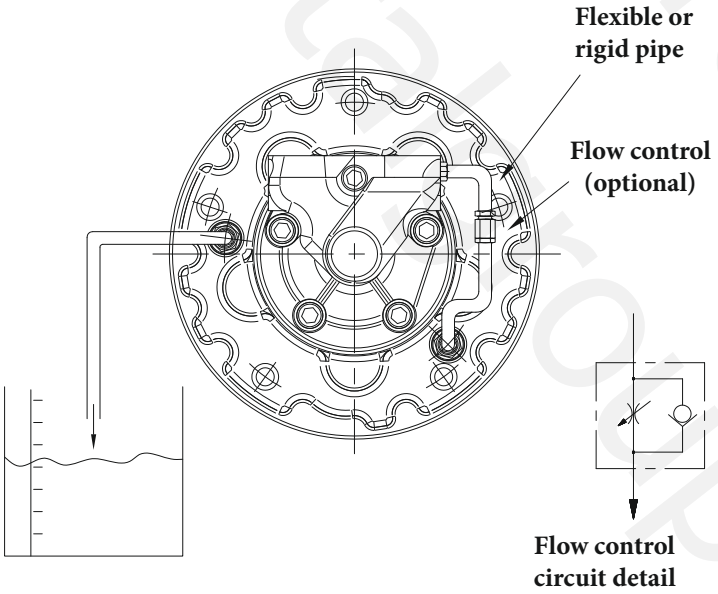
In case wheel motor is installed in vertical postion, please contact Italgroup S.r.l., for additional information regarding gear unit drain recommendations.

FLUSHING FLOW

Motor	Flushing flow [l/min]
G100 - GD100	5
HC05 75-90-110-130	5
HC05 150-170 HC1 175-200-220-250 HC2 200-250-300	6

Important note: the above value are approximated. The correct way to operate is the following: the flushing flow is adequate if during the motor operation the drain oil viscosity be at least 44 cSt, preferably in the range from 50 to 80 cSt.

FLUSHING FLOW MEASUREMENT METHOD



a) Connect the tank drain pipe to a graduate plastic measuring container;
b) measure the volume quantity of oil that flows into the container in one minute;
c) the measured oil volume quantity is the flushing flow, Q_d.

A = high pressure port (inlet port)
B = low pressure port (outlet port)
D = drain port

Important: motorcase pressure must not exceed 6 bar continuous pressure

LEGEND		FORMULA
T	Torque [Nm]	$T = T_S * P_r = (V * P_r) / 62.8$
T_S	Specific torque [Nm/ bar]	$P_1 = (T * S) / 9549$
		$P_2 = (T * S) / 7023$
P_1	Power [kW]	$S = (F * 1000) / V$
P_2	Power [CV]	$V = (T * 62.8) / P_r$
S	Speed [rpm]	$F = (V * S) / 1000$
V	Displacement [cc/Rev]	
F	Flow [l/min]	
P_r	Pressure [bar]	

CONVERSIONS

LENGHT	1 m	= 39,3701 in
		= 3,2808 ft
		= 1,0936 yd
		= 1000 mm
	1 in	= 0,0833 ft
		= 25,4 mm
	1 ft	= 0,3048 m
		= 0,3333 yd
		= 12 in
	1 yd	= 0,9144 m
		= 3 ft
		= 36 in
	1 km	= 1000 m
		= 1093,6 yd
		= 0,6214 mile
	1 mile	= 1,609 km
		= 1760 yd

SPEED	1 m/s	= 3,6 km/h
		= 2,237 mph
		= 3,2808 ft/s
	1 km/h	= 0,2778 m/s
		= 0,6214 mph
		= 0,9113 ft/s
	1 mph	= 1,609 km/h
		= 0,447 m/s
		= 1,467 ft/s
	1 ft/s	= 0,3048 m/s
		= 1,0973 km/h
		= 0,6818 mph

MASS	1 kg	= 2,2046 lb

FORCE	1 N	= 0,102 kgf
		= 0,2248 lbf
	1 kgf	= 2,205 lbf
		= 9,806 N
	1 lbf	= 0,4536 kgf
		= 4,448 N

PRESSURE	1 bar	= 14,223 psi
		= 0,99 atm
		= 1,02 ata
		= 100000 Pa
		= 100 kPa
		= 0,1 MPa
	1 psi	= 0,0703 bar

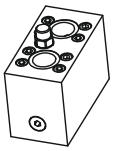
FLOW	1 l/min	= 0,264 gpm
		= 1000 cc/Rev
	1 gpm	= 3,785 l/min
		= 3785 cc/min
	1 m^3/s	= 60000 l/min
		= 15852 gpm

POWER	1 kW	= 1,341 HP
		= 1,3596 CV
	1 HP	= 0,7457 kW
		= 1,0139 CV

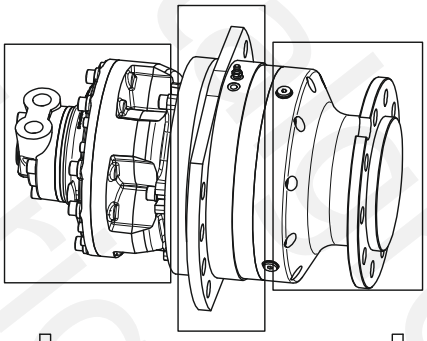
VOLUME	1 m^3	= 1000 l
	1 l	= 61,023 in^3
		= 0,264 galUS
	1 in^3	= 0,01639 l
		= 16,39 cm^3
		= 0,004326 galUS
	1 galUS	= 3,7879 l
		=231,15 in^3

TORQUE	1 Nm	= 0,102 kgm
		= 0,7376 lbf ft
	1 kgm	= 9,806 Nm
		= 7,2325 lbf ft
	1 lbf ft	= 0,1383 kgm
		= 1,3558 Nm

W05

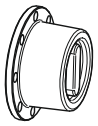


Valve block
See pag. 142-145



Wheel stud
See pag. 147

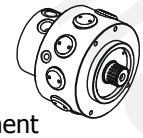
Tachometer
See pag. 138-140



Mechanical disengage
See pag. 146

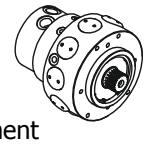
HYDRAULIC MOTOR

G100



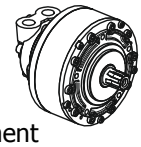
Single displacement motor: 100 cc

GD100



Dual displacement motor: 31-100 cc

HC05



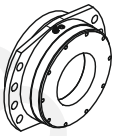
Single displacement motor, freewheeling mode: 75-200 cc

GEAR & BRAKE UNIT

Available ratio

3,55 4,28

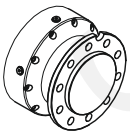
5,60 6,75



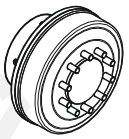
WB
Without brake

NB
With negative brake

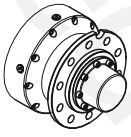
OUTPUT CONFIGURATION



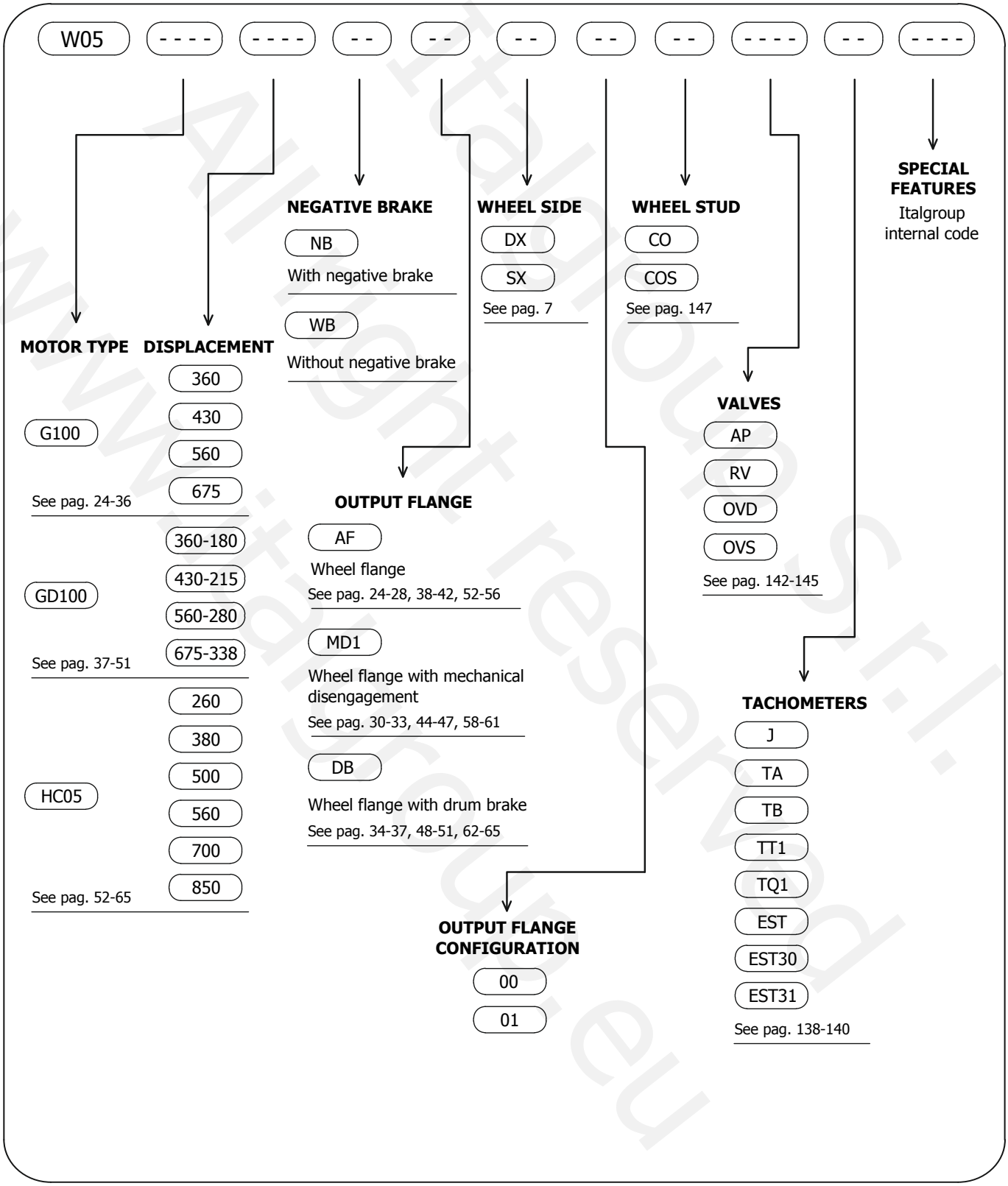
AF
Wheel flange



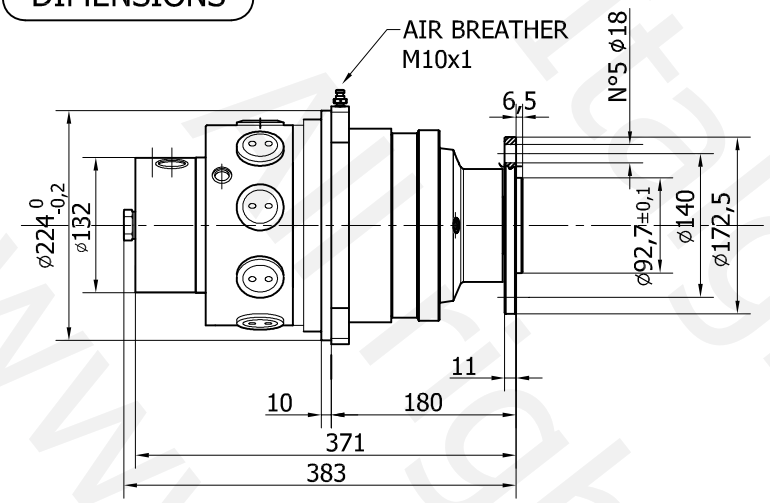
DB
Wheel flange with drum brake

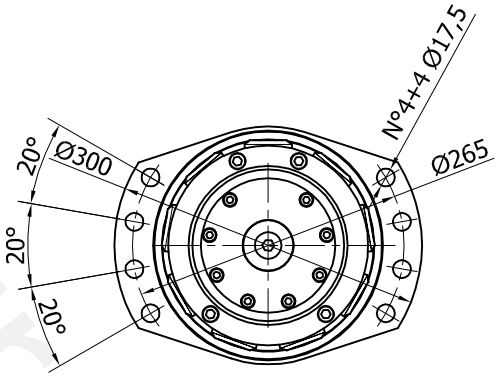


MD1
Wheel flange with mechanichal disengage

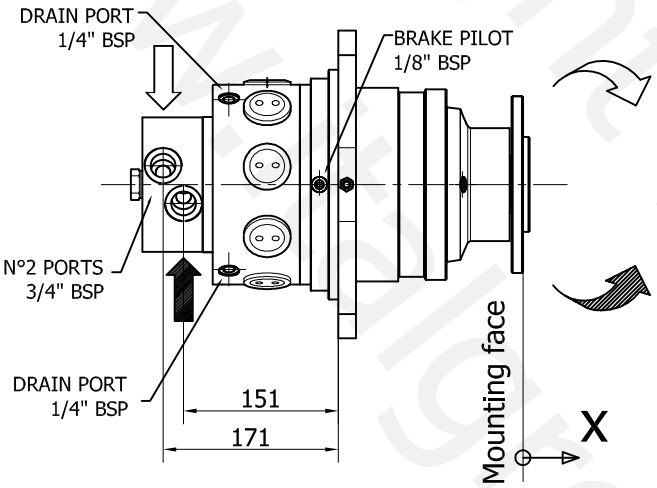


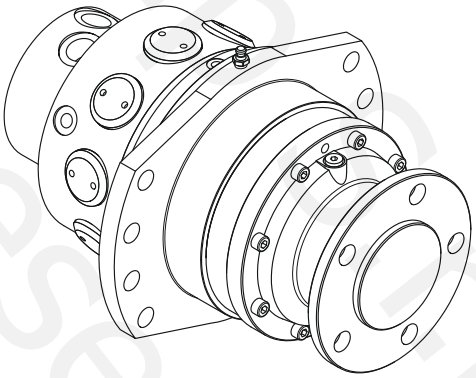
DIMENSIONS



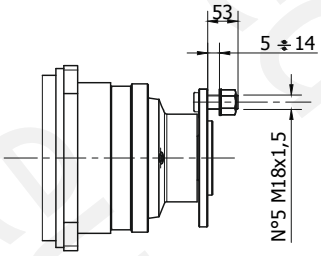


00 Standard output code





OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		360	430	560	675
Motor displ.	[cc]	102	102	102	102
Gear ratio	[]	3,55	4,28	5,6	6,75
Total displ.	[cc]	361	432	572	689
Specific torque	[Nm/bar]	5,7	6,9	9,1	11
Continuous pressure	[bar]	250	250	250	250
Peak pressure	[bar]	350	350	350	350
Max speed	[rpm]	520	430	330	270
Max cont. torque	[Nm]	1320	1600	2100	2400
Peak torque (*)	[Nm]	1840	2230	2770	3500
Max power	[kW]	30	30	30	30
Braking torque (optional)	[Nm]	1850	2250	2900	3500
Brake release pressure (min)	[bar]	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	60	60	60	60

- Maximum motor drain line pressure: 6 bar;

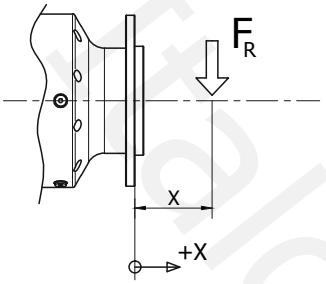
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

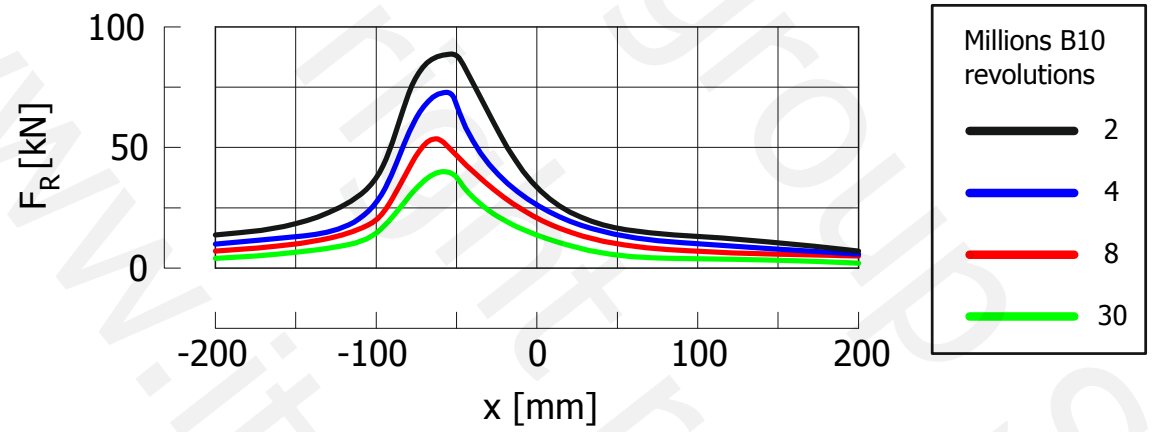
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

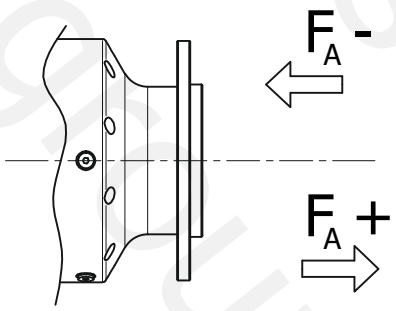
For more information please contact Italgroup technical department.

RADIAL LOAD





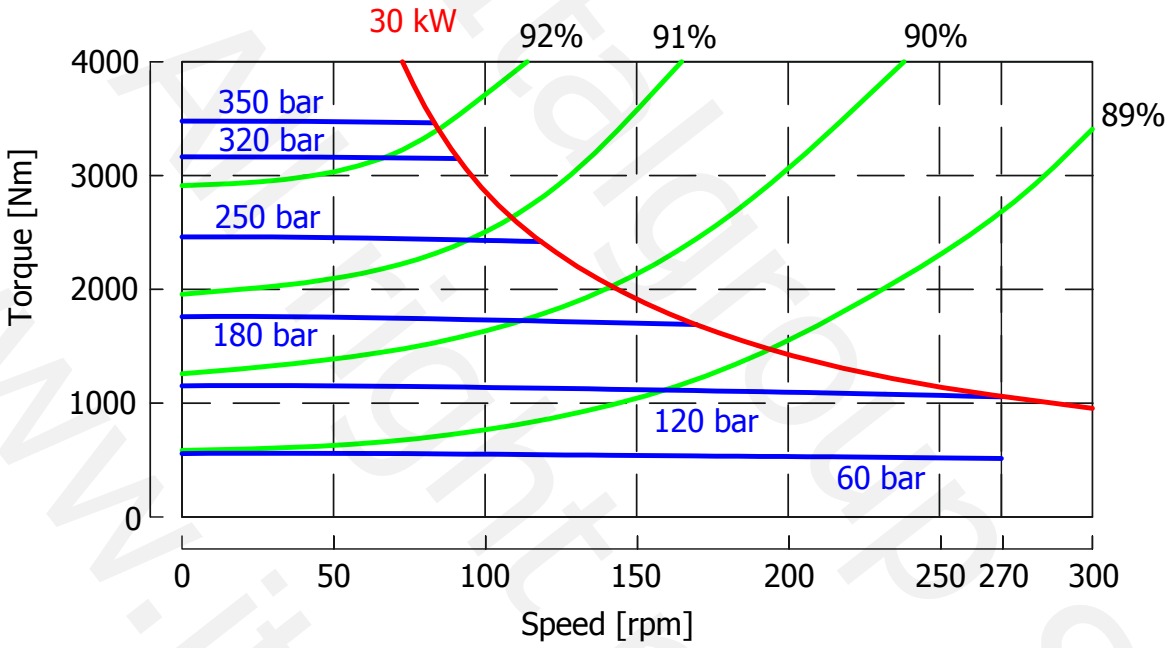
AXIAL LOAD



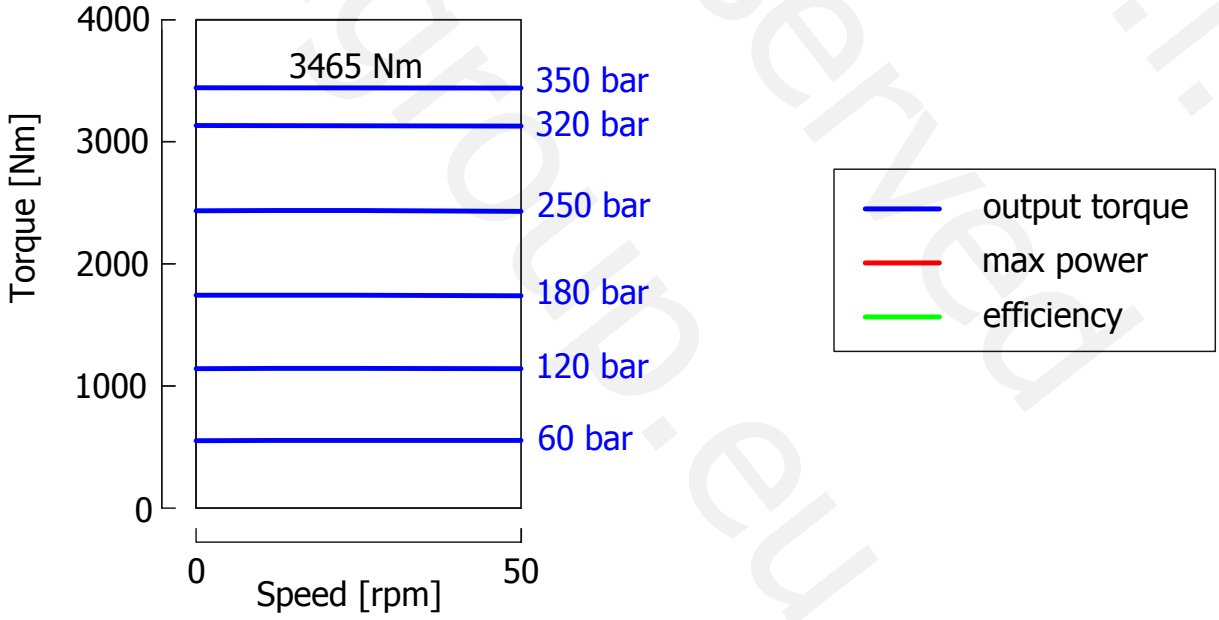
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 G100 AF	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 G100 675 AF

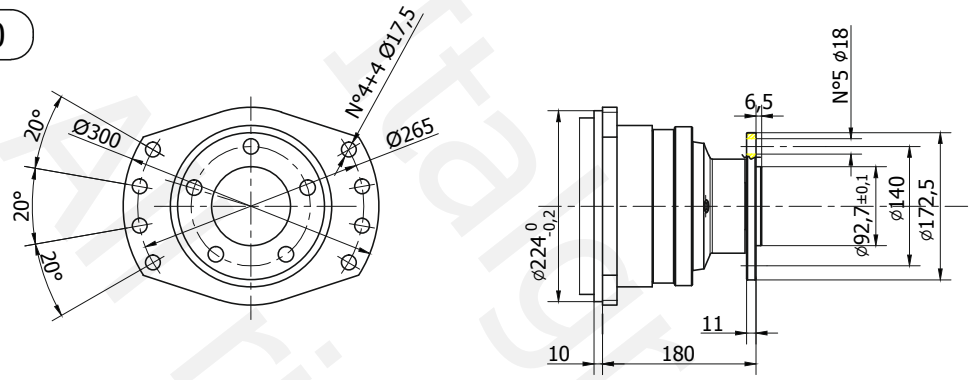


STARTING TORQUE DIAGRAM - W05 G100 675 AF

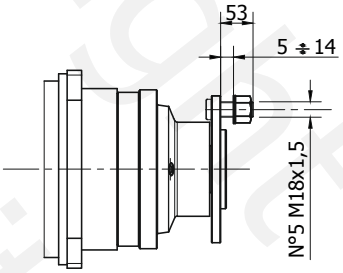


W05 G100 AF OUTPUT CONFIGURATIONS

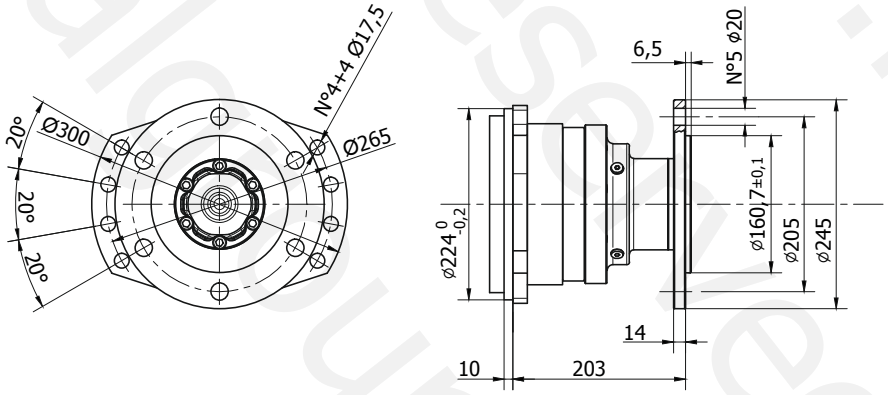
00



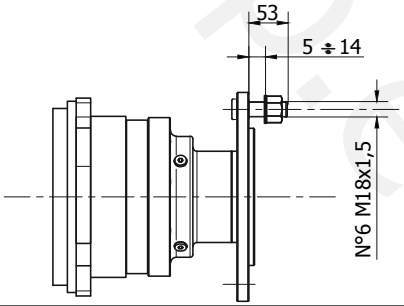
00 CO



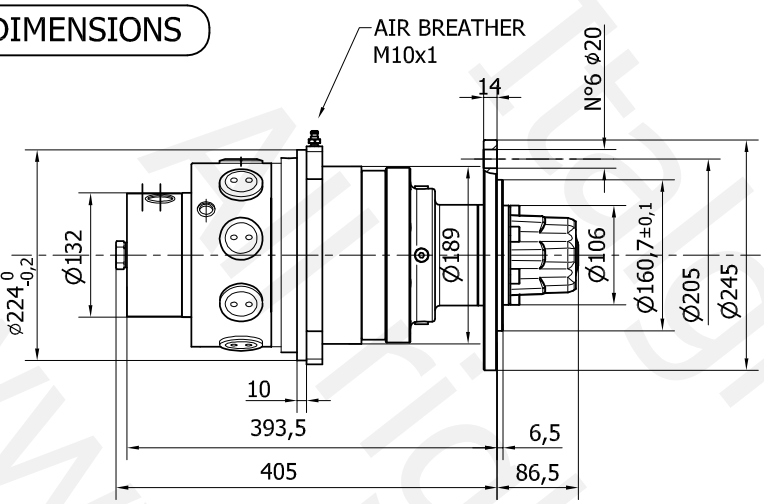
01

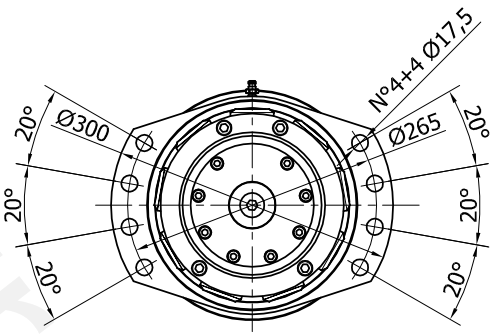


01 CO

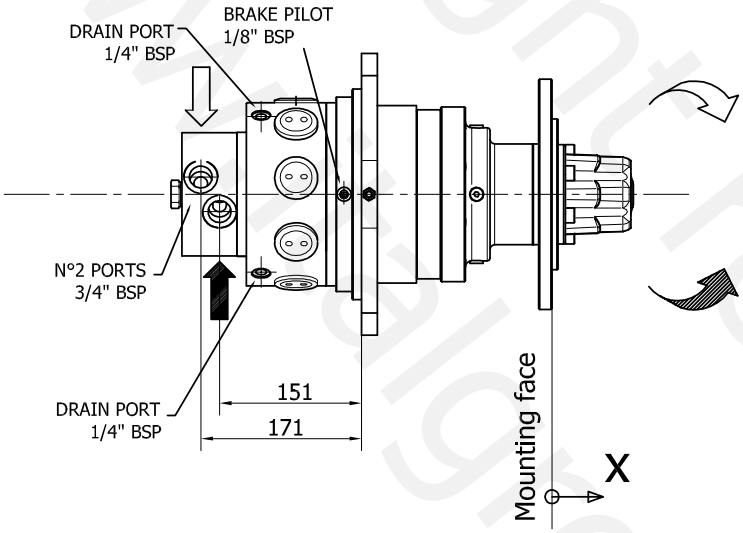


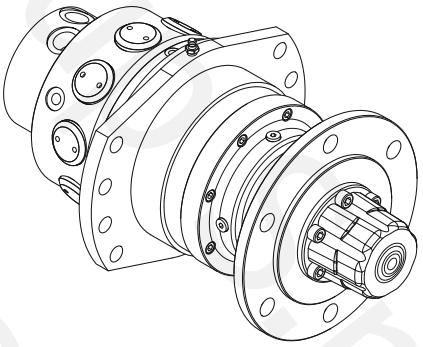
DIMENSIONS





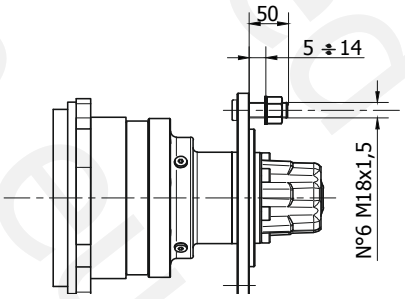
00 Standard output code





MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		360	430	560	675
Motor displ.	[cc]	102	102	102	102
Gear ratio	[]	3,55	4,28	5,6	6,75
Total displ.	[cc]	361	432	572	689
Specific torque	[Nm/bar]	5,7	6,88	9,1	11
Continuous pressure	[bar]	250	250	250	250
Peak pressure	[bar]	350	350	350	300
Max speed	[rpm]	520	430	330	270
Max cont. torque	[Nm]	1320	1600	2100	2400
Peak torque (*)	[Nm]	1840	2230	2770	3000
Max power	[kW]	30	30	30	30
Braking torque (optional)	[Nm]	1850	2250	2900	3500
Brake release pressure (min)	[bar]	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	65	65	65	65

- Maximum motor drain line pressure: 6 bar;

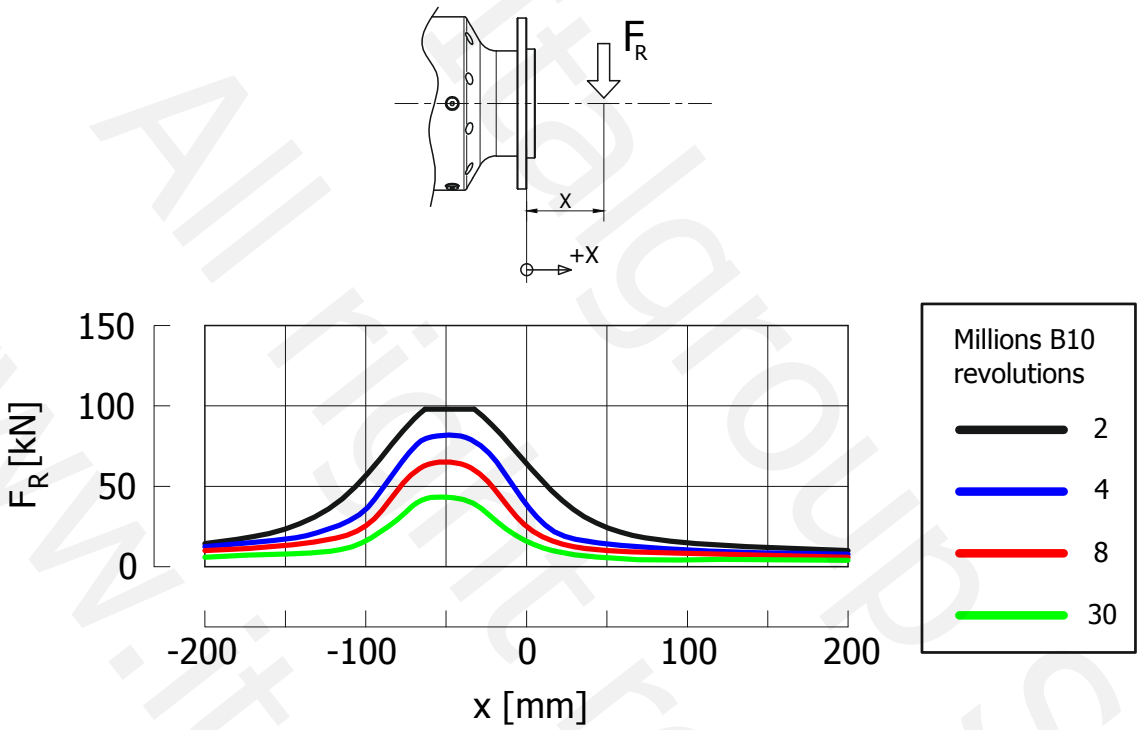
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

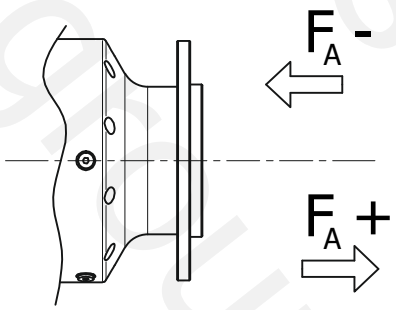
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



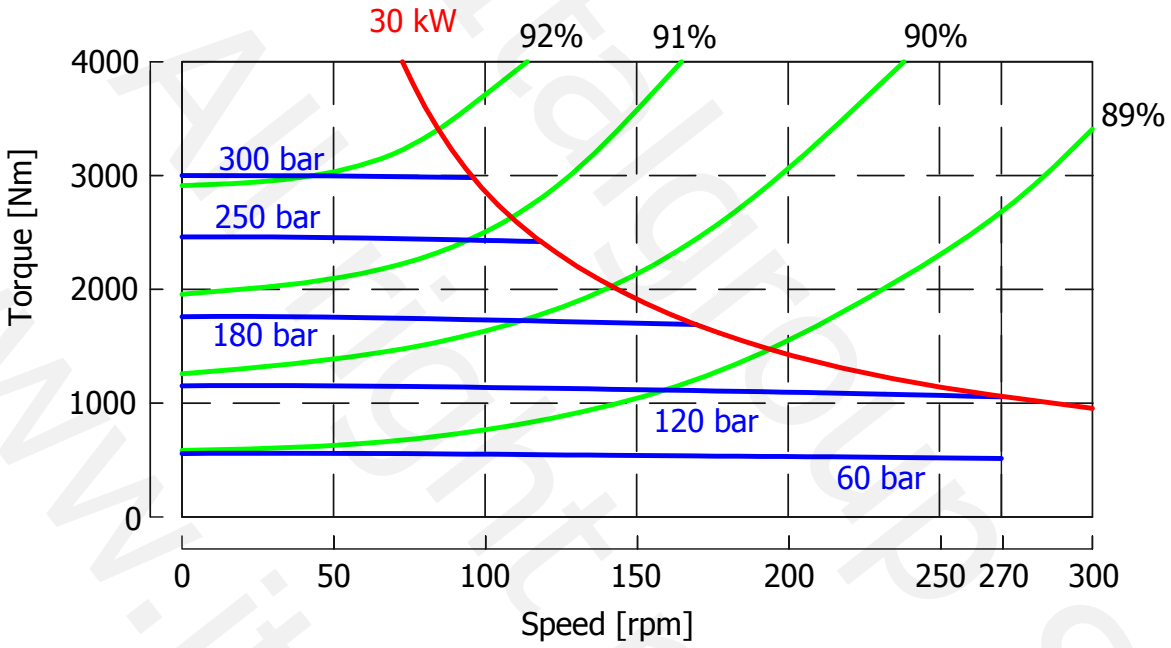
AXIAL LOAD



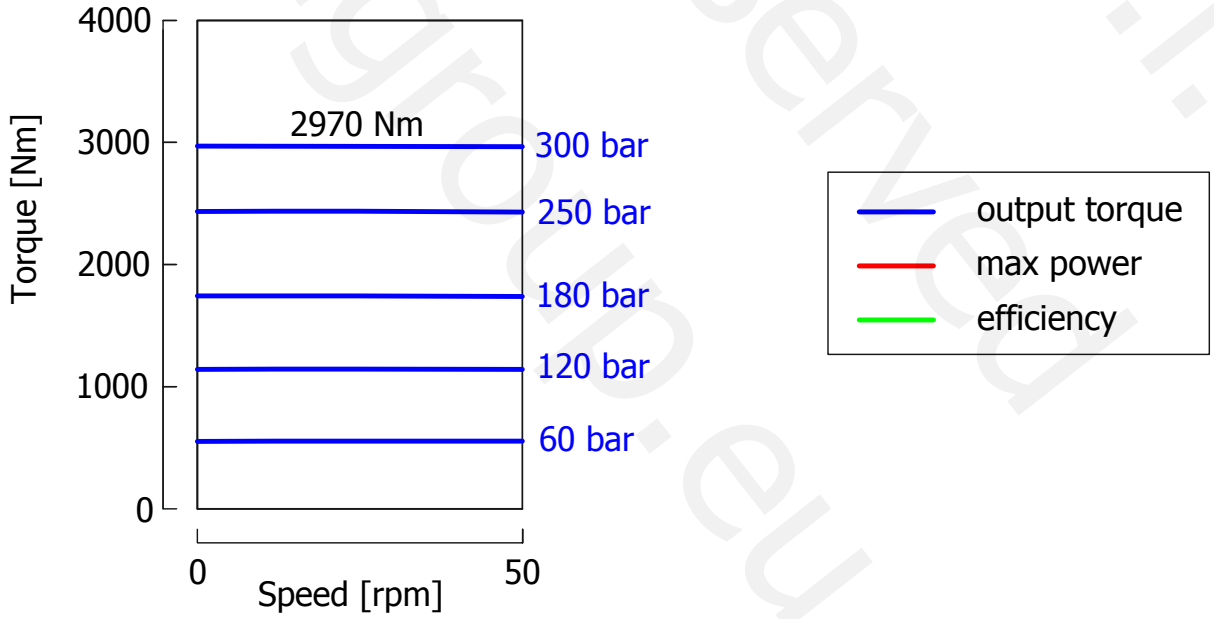
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 GD100 MD1	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

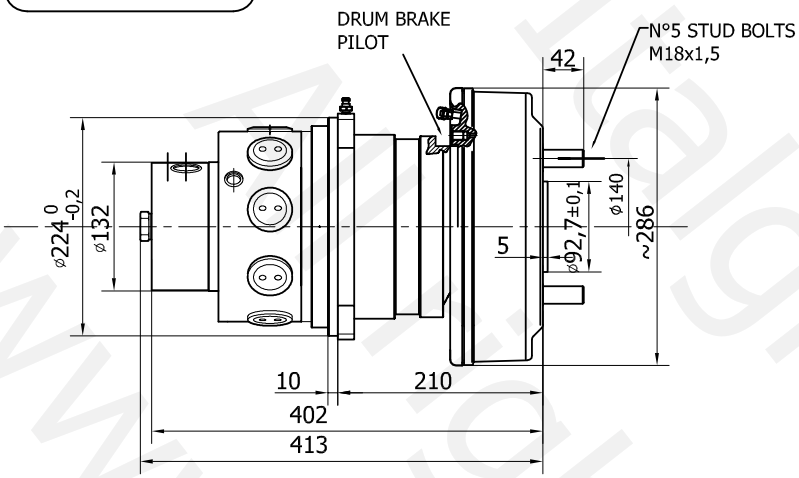
OPERATING DIAGRAM - W05 GD100 675 MD1

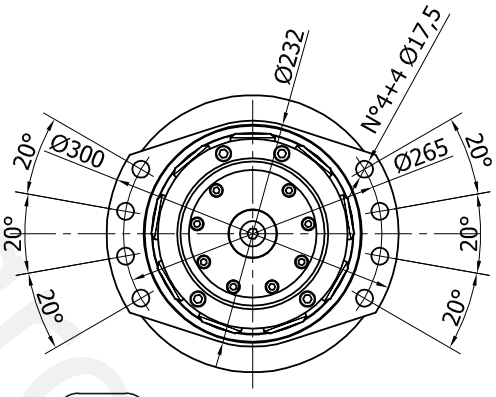


STARTING TORQUE DIAGRAM - W05 GD100 675 MD1

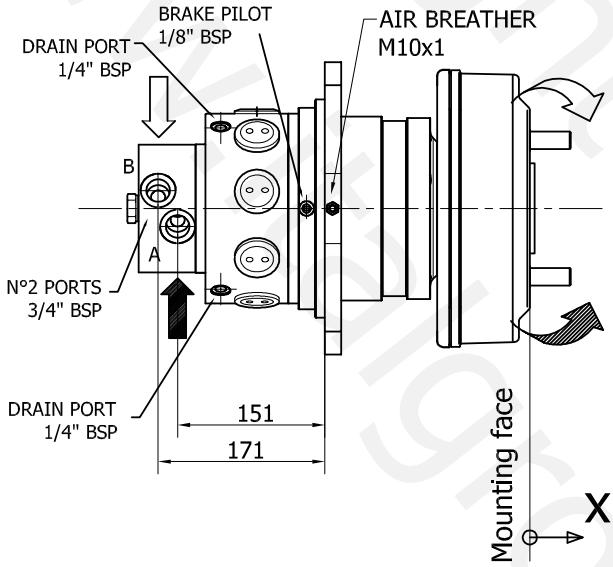


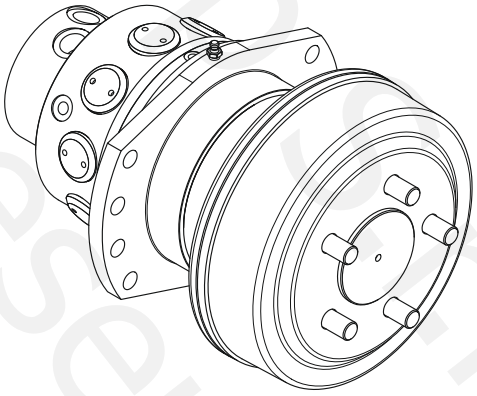
DIMENSIONS





00 Standard output code





Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		360	430	560	675
Motor displ.	[cc]	102	102	102	102
Gear ratio	[]	3,55	4,28	5,6	6,75
Total displ.	[cc]	361	432	572	689
Specific torque	[Nm/bar]	5,7	6,88	9,1	11
Continuous pressure	[bar]	250	250	250	250
Peak pressure	[bar]	350	350	350	350
Max speed	[rpm]	520	430	330	270
Max cont. torque	[Nm]	1320	1600	2100	2400
Peak torque (*)	[Nm]	1840	2230	2770	3500
Max power	[kW]	30	30	30	30
Braking torque (optional)	[Nm]	1850	2250	2900	3500
Brake release pressure (min)	[bar]	13	13	13	13
Drum brake torque	[Nm]	3000	3000	3000	3000
Drum brake max pressure	[bar]	100	100	100	100
Drum brake pilot	[]	M10x1	M10x1	M10x1	M10x1
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	80	80	80	80

- Maximum motor drain line pressure: 6 bar;

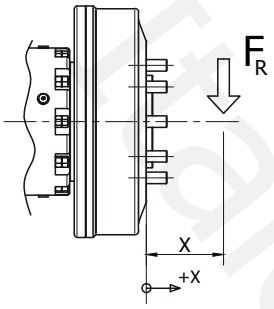
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

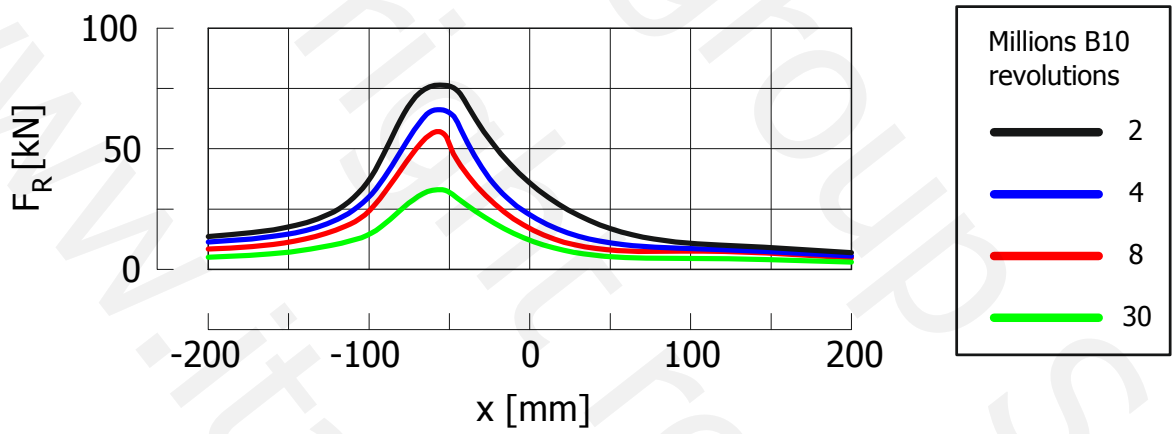
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

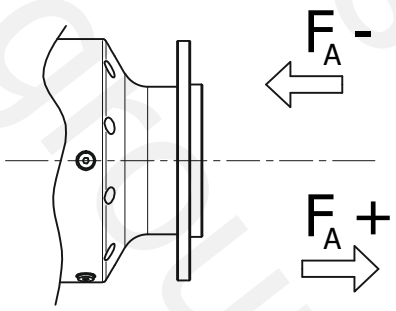
For more information please contact Italgroup technical department.

RADIAL LOAD





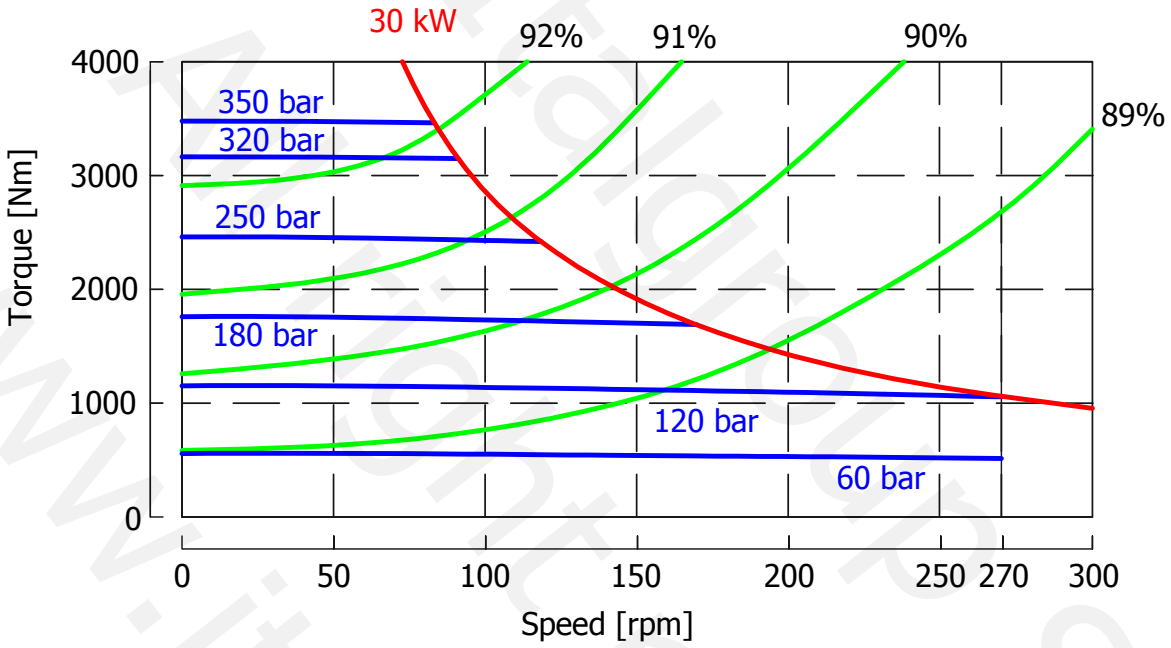
AXIAL LOAD



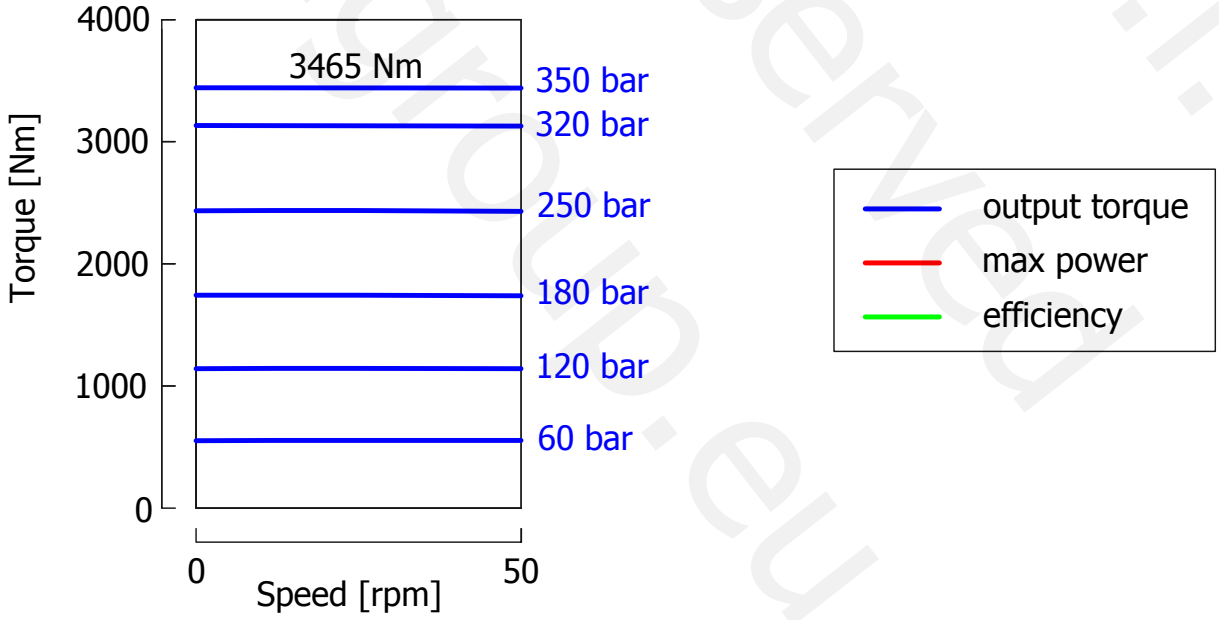
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 G100 DB	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

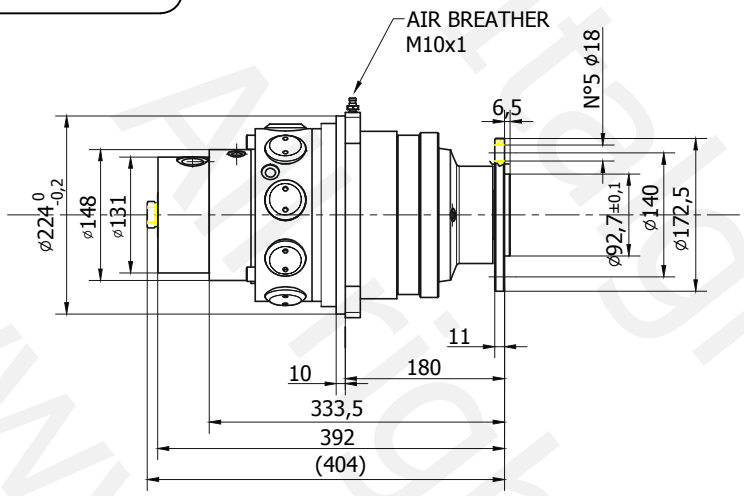
OPERATING DIAGRAM - W05 G100 675 DB

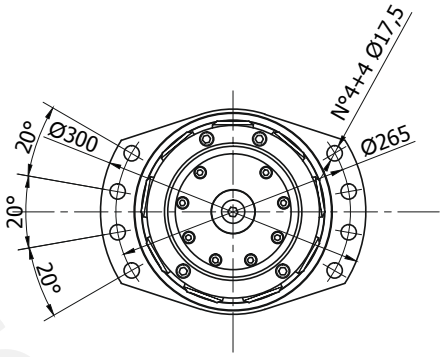


STARTING TORQUE DIAGRAM - W05 G100 675 DB

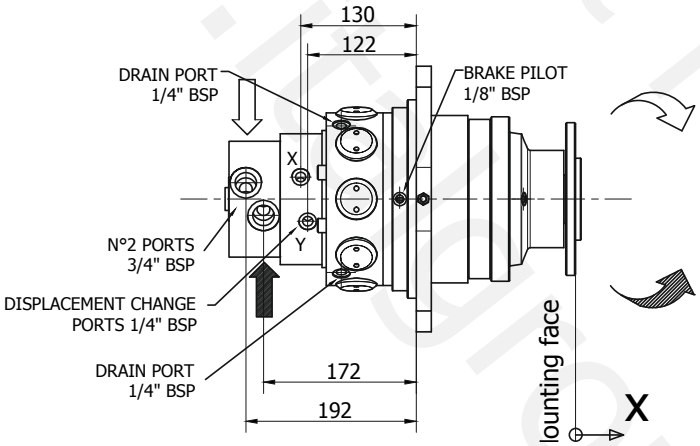


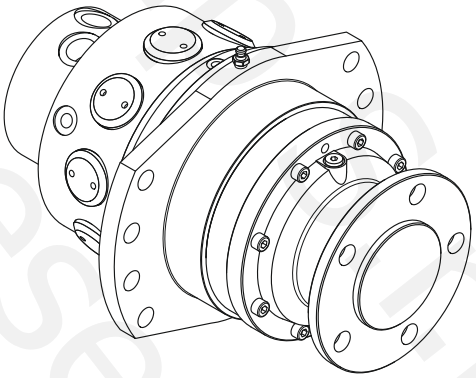
DIMENSIONS





00 Standard output code

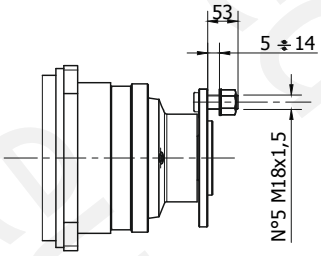




Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

OPTIONAL: STUD BOLTS



		360-180		430-215		560-280	
Motor displ.	[cc]	102	51	102	51	102	51
Gear ratio	[]	3,55	3,55	4,28	4,28	5,6	5,6
Total displ.	[cc]	361	180	432	216	571	286
Specific torque	[Nm/bar]	5,7	2,8	6,88	3,44	9,1	4,55
Continuous pressure	[bar]	250	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350	350
Max speed	[rpm]	520	650	430	540	330	420
Max cont. torque	[Nm]	1320	660	1600	800	2100	1050
Peak torque (*)	[Nm]	1840	920	2230	1115	2770	1385
Max power	[kW]	30	30	30	30	30	30
Braking torque (optional)	[Nm]	1850	1850	2250	2250	2900	2900
Brake release pressure (min)	[bar]	13	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	60		60		60	

		675-338	
Motor displ.	[cc]	102	51
Gear ratio	[]	6,75	6,75
Total displ.	[cc]	689	345
Specific torque	[Nm/bar]	11	5,5
Continuous pressure	[bar]	250	250
Peak pressure	[bar]	320	350
Max speed	[rpm]	270	338
Max cont. torque	[Nm]	2400	1200
Peak torque (*)	[Nm]	3500	1750
Max power	[kW]	30	30
Braking torque (optional)	[Nm]	3500	3500
Brake release pressure (min)	[bar]	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70
Dry weight	[kg]	60	

- Maximum motor drain line pressure: 6 bar;

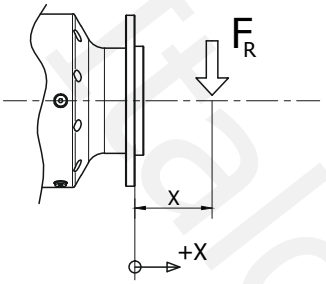
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

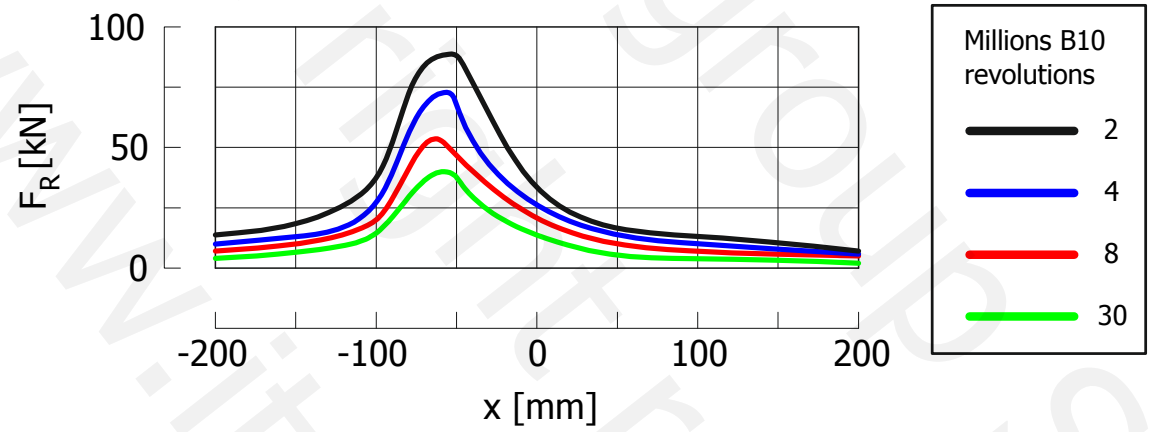
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

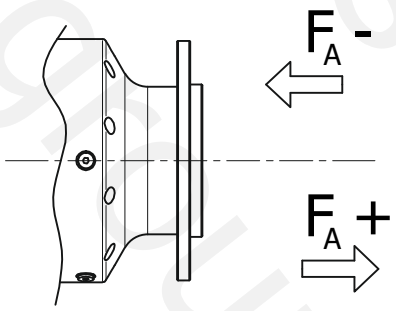
For more information please contact Italgroup technical department.

RADIAL LOAD





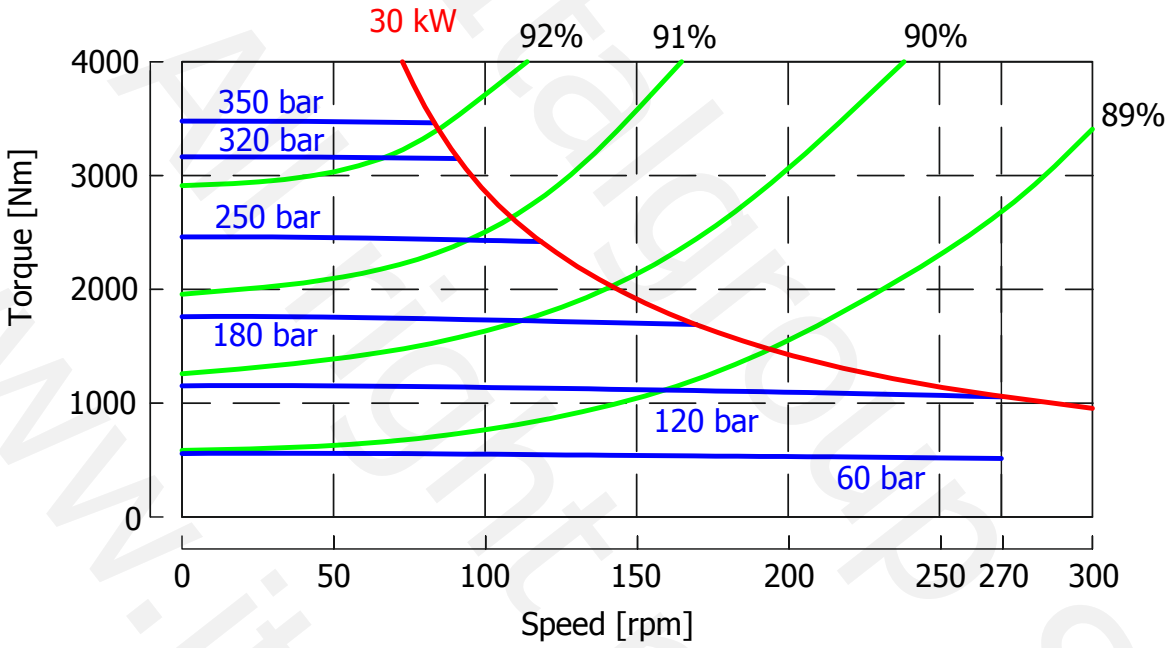
AXIAL LOAD



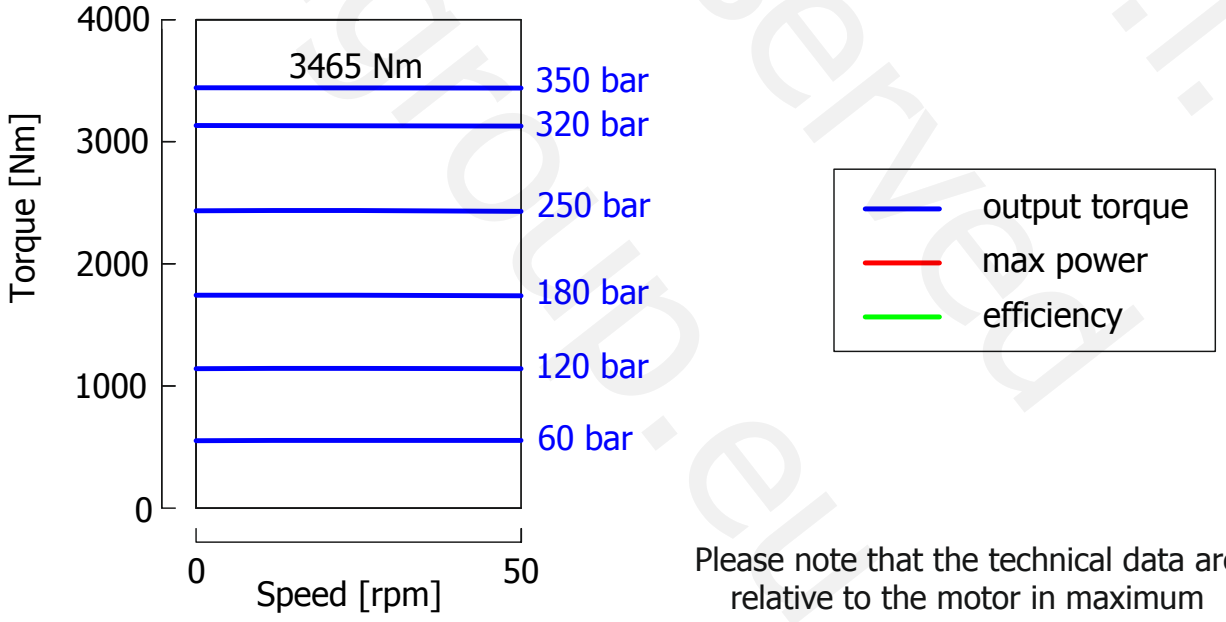
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 GD100 AF	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 GD100 675 AF



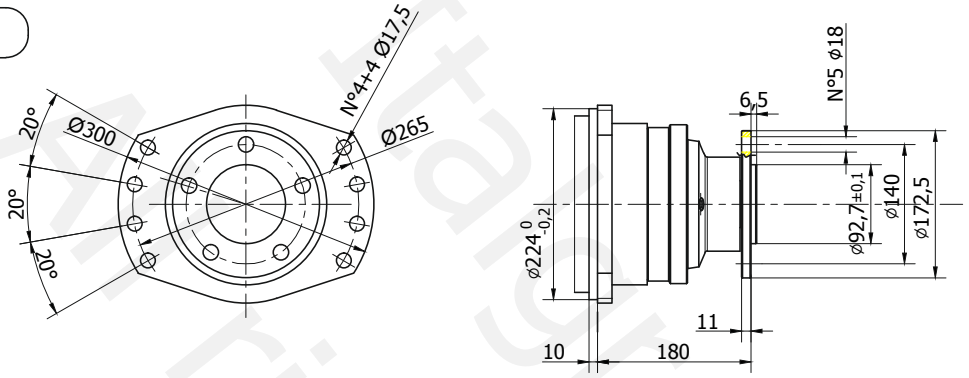
STARTING TORQUE DIAGRAM - W05 GD100 675 AF



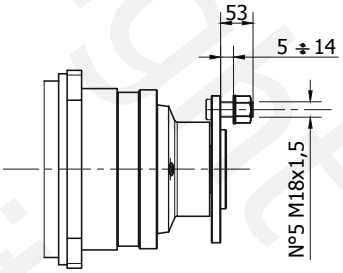
Please note that the technical data are relative to the motor in maximum displacement

W05 GD100 AF OUTPUT CONFIGURATIONS

00



00 CO



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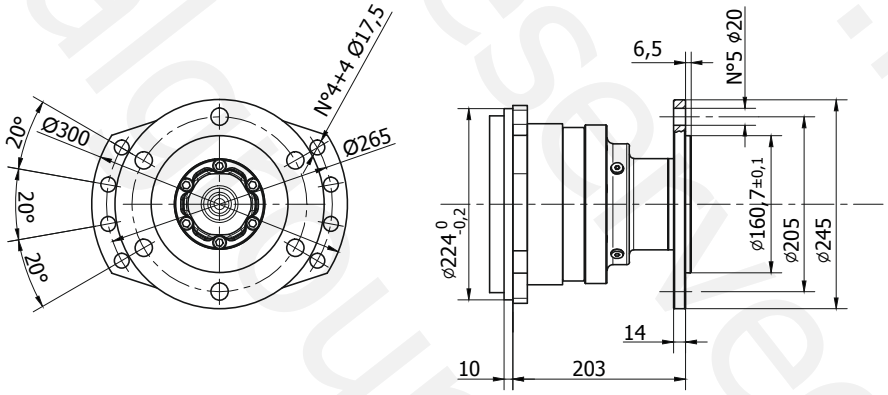
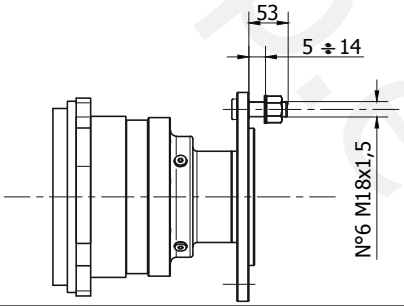
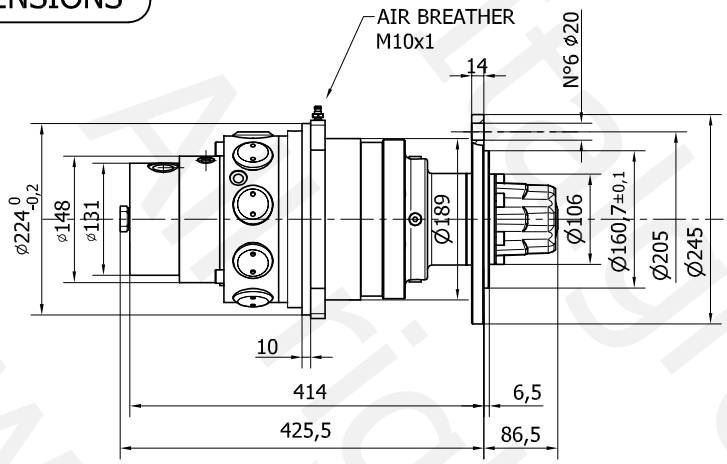
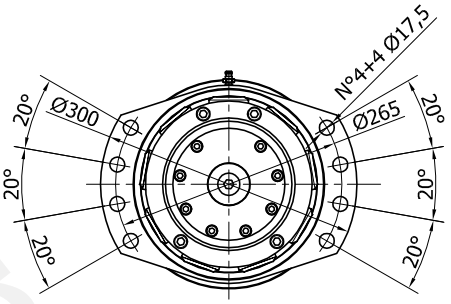


01 CO

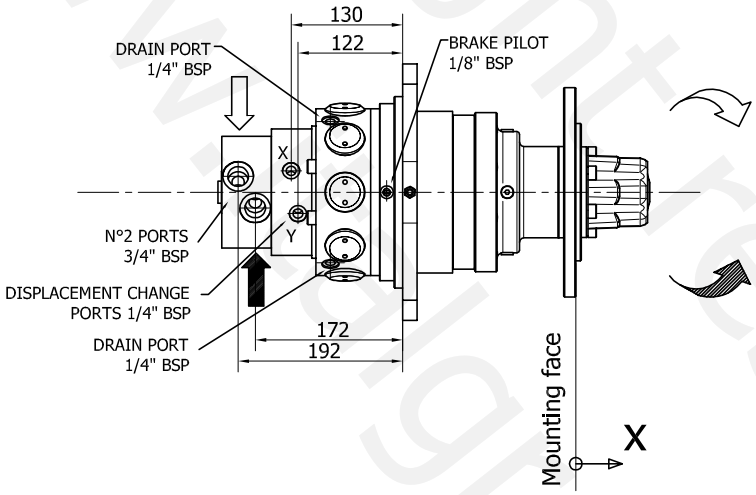


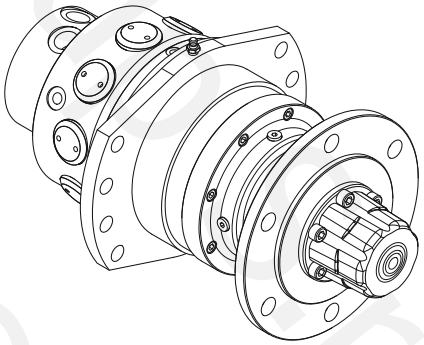
DIMENSIONS





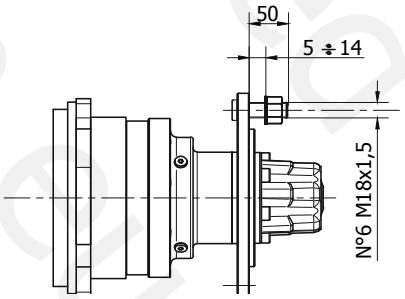
00 Standard output code





MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		360-180		430-215		560-280	
Motor displ.	[cc]	102	51	102	51	102	51
Gear ratio	[]	3,55	3,55	4,28	4,28	5,6	5,6
Total displ.	[cc]	361	180	432	216	571	286
Specific torque	[Nm/bar]	5,7	2,8	6,88	3,44	9,1	4,55
Continuous pressure	[bar]	250	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350	350
Max speed	[rpm]	520	650	430	540	330	420
Max cont. torque	[Nm]	1320	660	1600	800	2100	1050
Peak torque (*)	[Nm]	1840	920	2230	1115	2770	1385
Max power	[kW]	30	30	30	30	30	30
Braking torque (optional)	[Nm]	1850	1850	2250	2250	2900	2900
Brake release pressure (min)	[bar]	13	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	65		65		65	

		675-338	
Motor displ.	[cc]	102	51
Gear ratio	[]	6,75	6,75
Total displ.	[cc]	689	345
Specific torque	[Nm/bar]	11	5,5
Continuous pressure	[bar]	250	250
Peak pressure	[bar]	300	350
Max speed	[rpm]	270	338
Max cont. torque	[Nm]	2400	1200
Peak torque (*)	[Nm]	3000	1750
Max power	[kW]	30	30
Braking torque (optional)	[Nm]	3500	3500
Brake release pressure (min)	[bar]	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70
Dry weight	[kg]	65	

- Maximum motor drain line pressure: 6 bar;

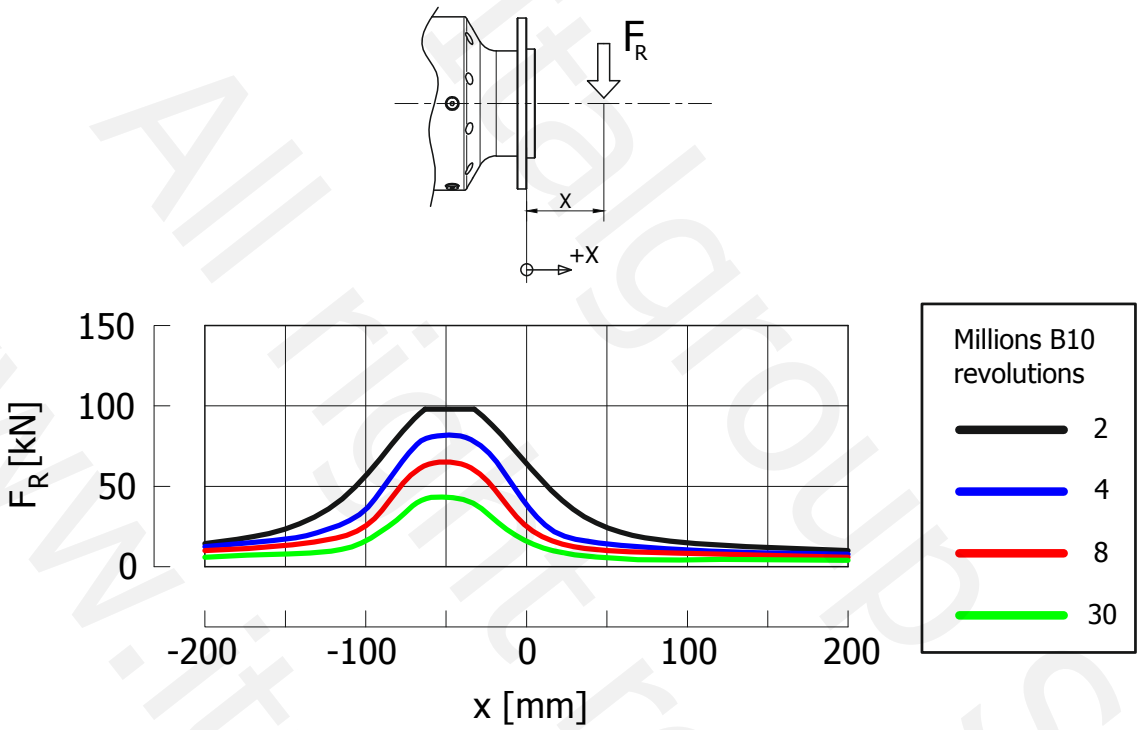
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

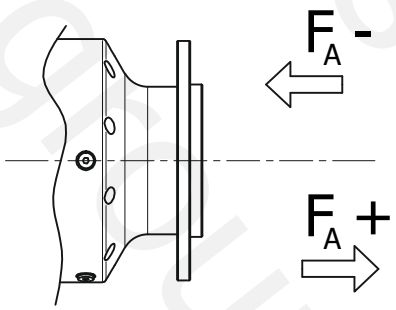
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



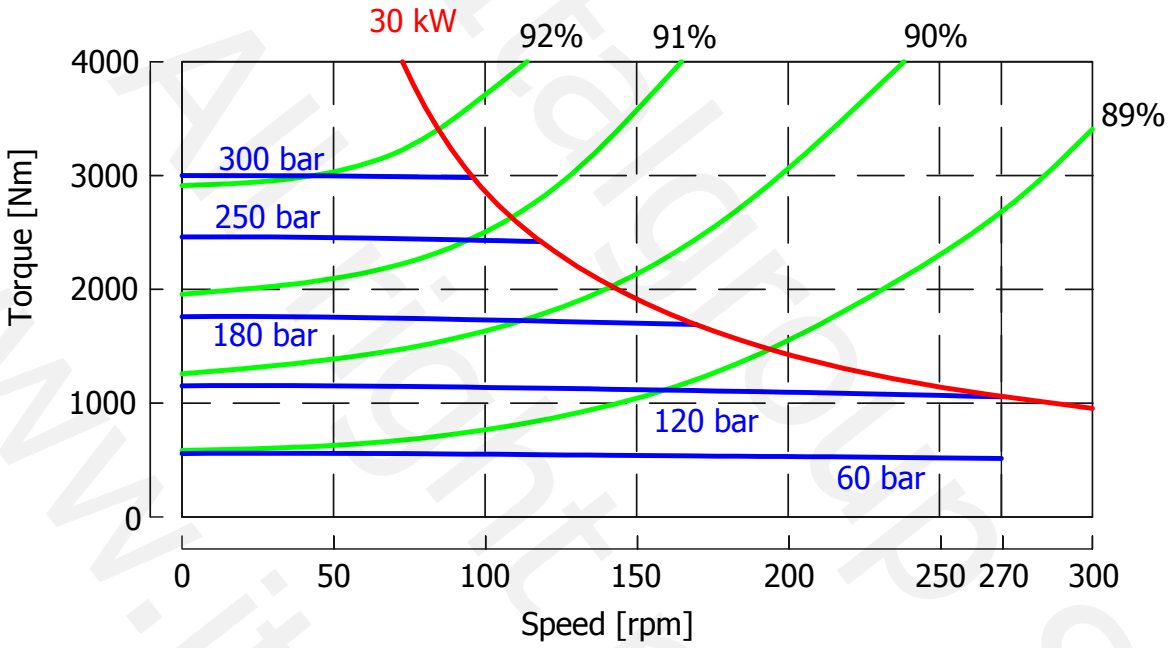
AXIAL LOAD



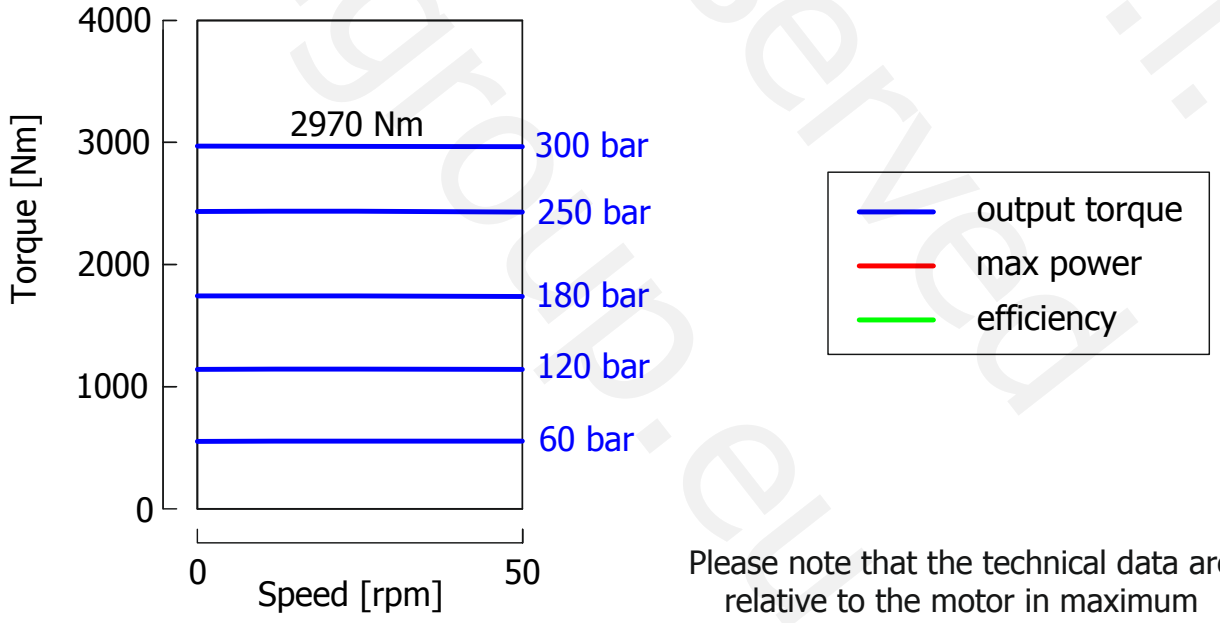
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 GD100 MD1	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 GD100 675 MD1

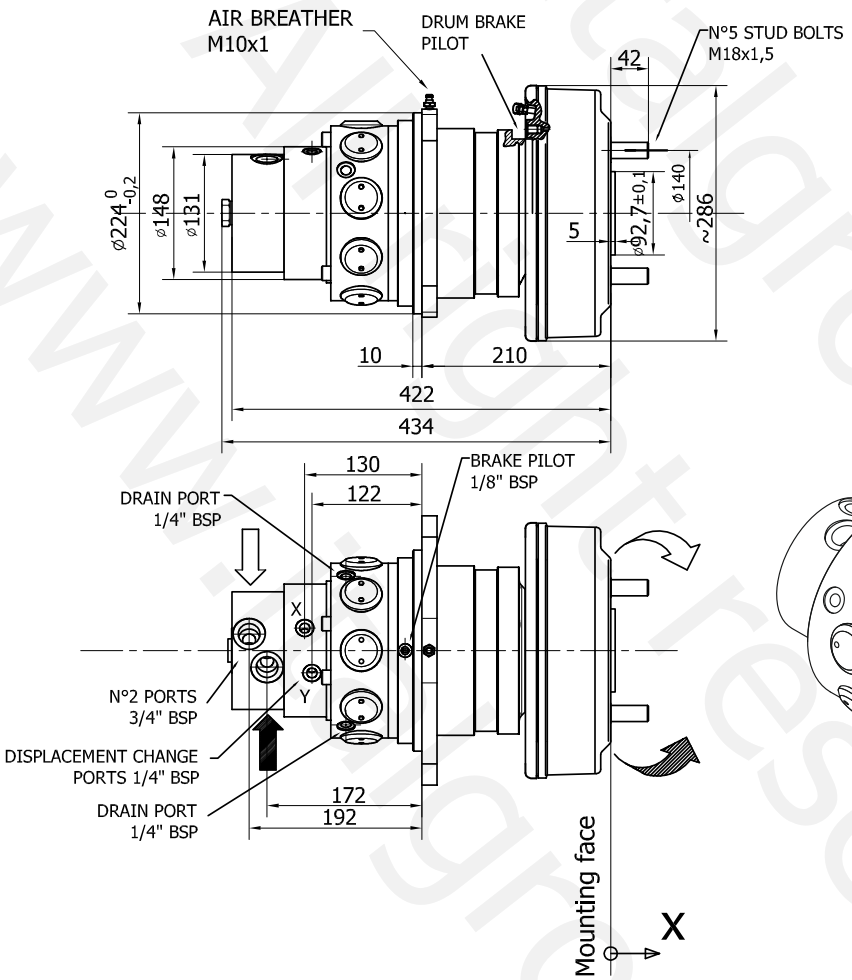


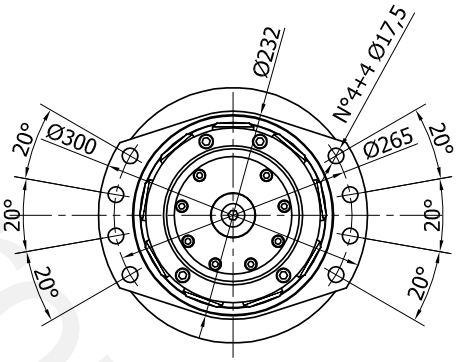
STARTING TORQUE DIAGRAM - W05 GD100 675 MD1



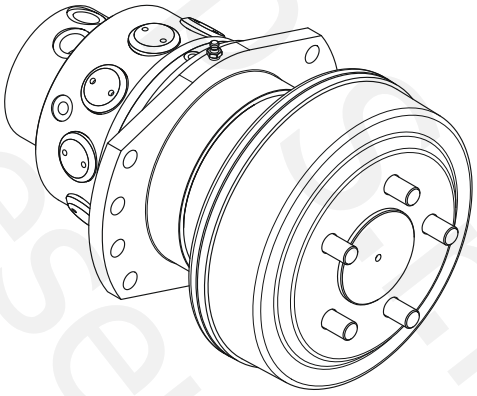
Please note that the technical data are relative to the motor in maximum displacement

DIMENSIONS





00 Standard output code



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		360-180		430-215		560-280	
Motor displ.	[cc]	102	51	102	51	102	51
Gear ratio	[]	3,55	3,55	4,28	4,28	5,6	5,6
Total displ.	[cc]	361	180	432	216	571	286
Specific torque	[Nm/bar]	5,7	2,8	6,88	3,44	9,1	4,55
Continuous pressure	[bar]	250	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350	350
Max speed	[rpm]	520	650	430	540	330	420
Max cont. torque	[Nm]	1320	660	1600	800	2100	1050
Peak torque (*)	[Nm]	1840	920	2230	1115	2770	1385
Max power	[kW]	30	30	30	30	30	30
Braking torque (optional)	[Nm]	1850	1850	2250	2250	2900	2900
Brake release pressure (min)	[bar]	13	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	80		80		80	

		675-338	
Motor displ.	[cc]	102	51
Gear ratio	[]	6,75	6,75
Total displ.	[cc]	689	345
Specific torque	[Nm/bar]	11	5,5
Continuous pressure	[bar]	250	250
Peak pressure	[bar]	350	350
Max speed	[rpm]	270	338
Max cont. torque	[Nm]	2400	1200
Peak torque (*)	[Nm]	3500	1750
Max power	[kW]	30	30
Braking torque (optional)	[Nm]	3500	3500
Brake release pressure (min)	[bar]	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70
Dry weight	[kg]	80	

Drum brake torque	[Nm]	3000
Drum brake max pressure	[bar]	100
Drum brake pilot	[]	M10x1

- Maximum motor drain line pressure: 6 bar;

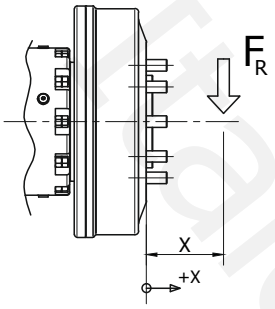
- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

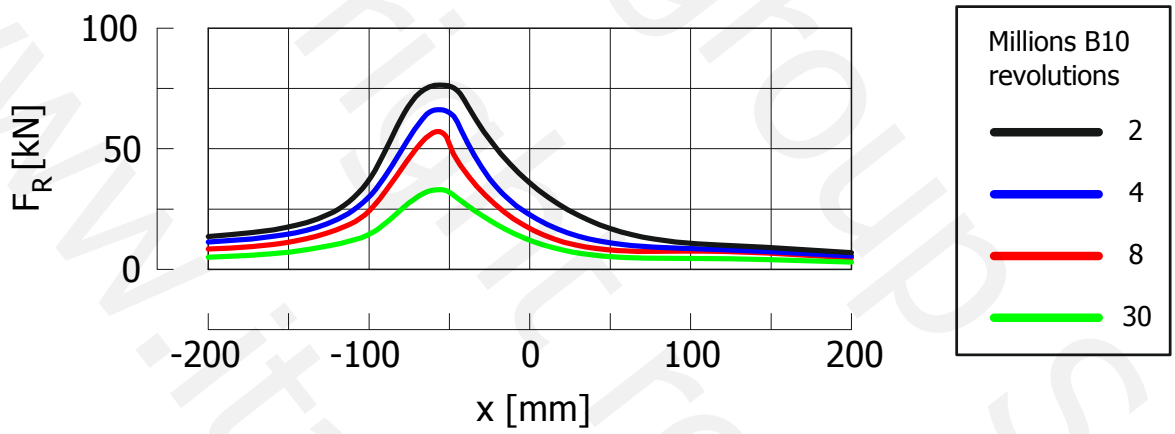
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

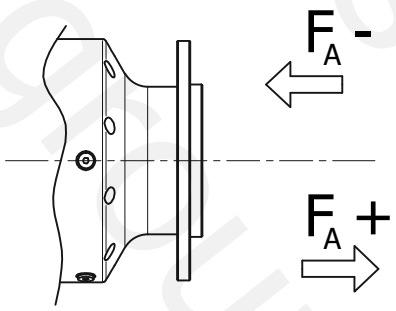
For more information please contact Italgroup technical department.

RADIAL LOAD





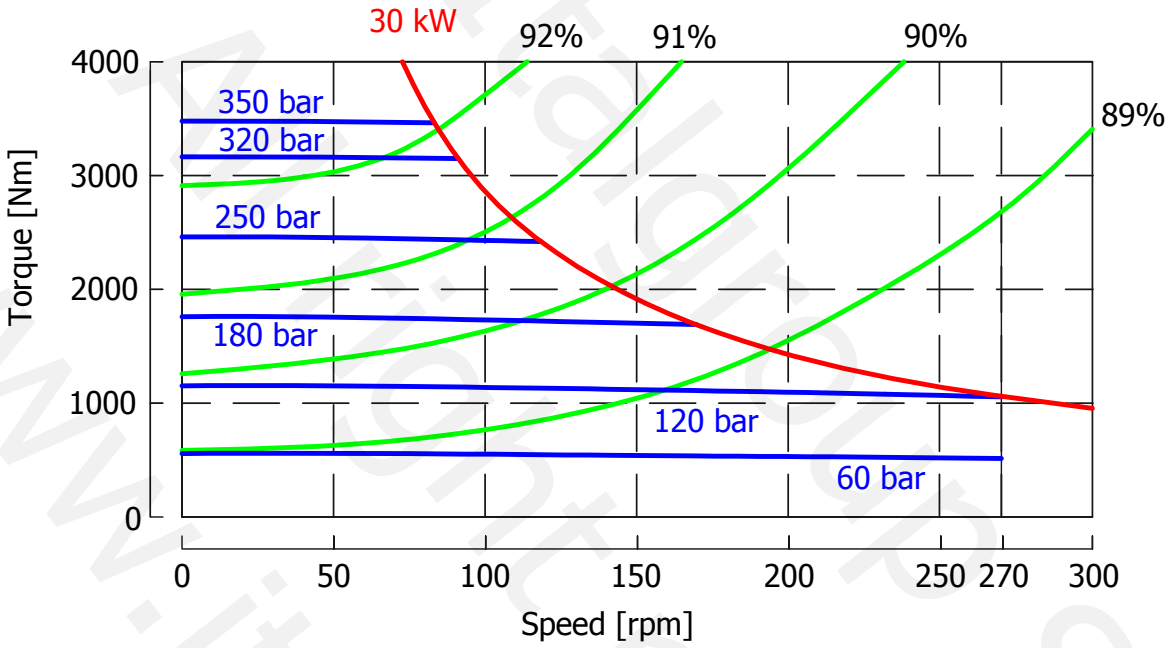
AXIAL LOAD



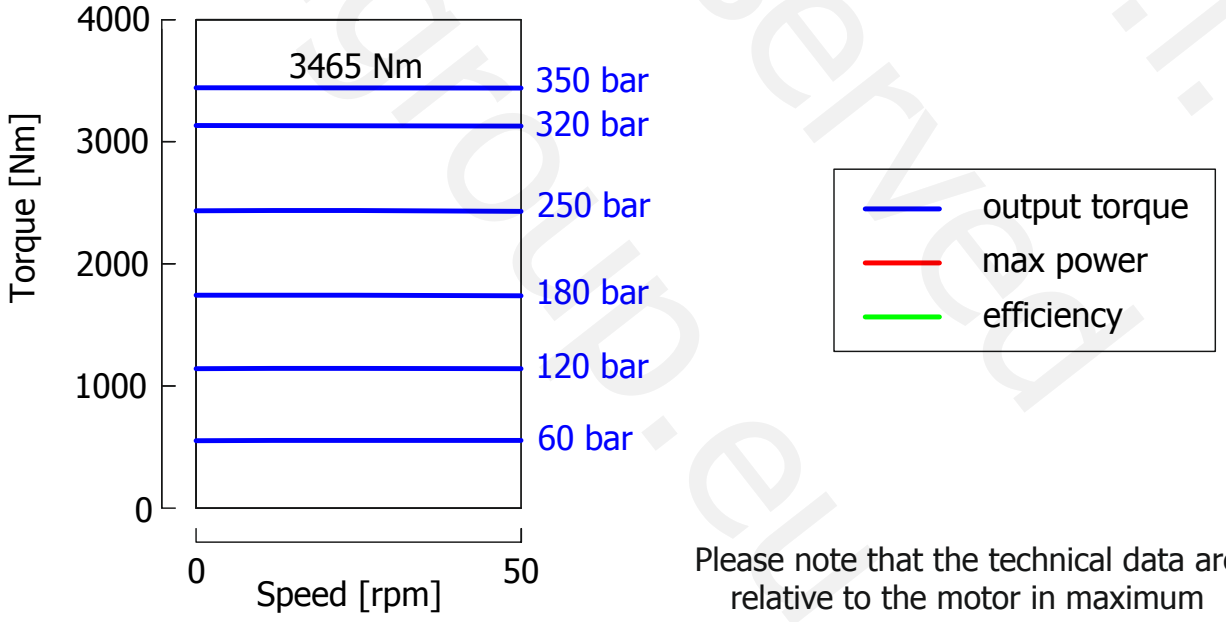
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 GD100 DB	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 GD100 675 DB

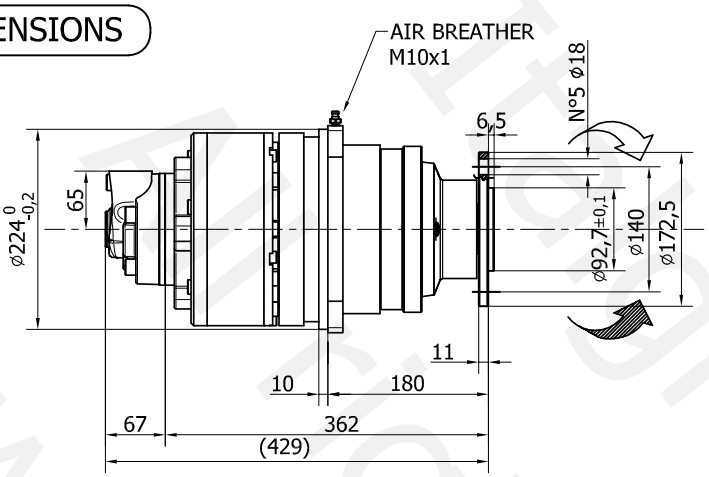


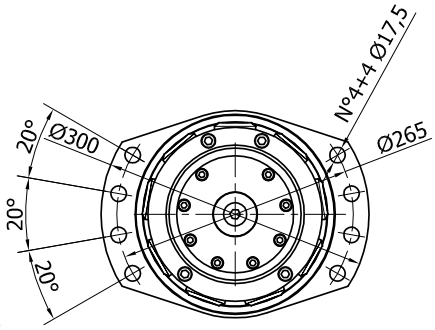
STARTING TORQUE DIAGRAM - W05 GD100 675 DB



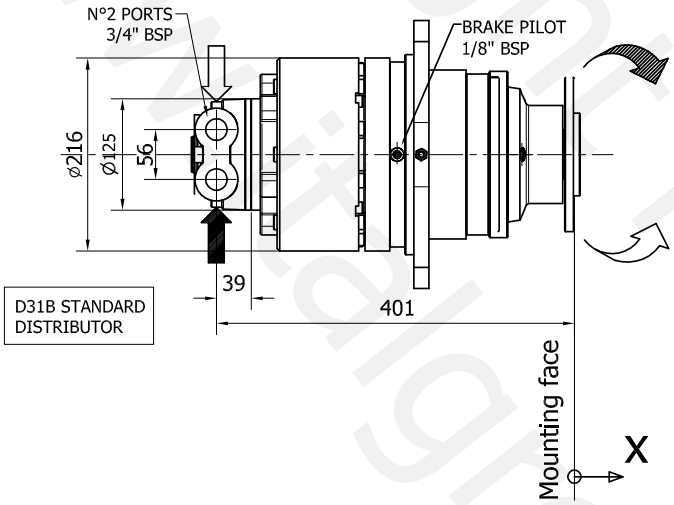
Please note that the technical data are relative to the motor in maximum displacement

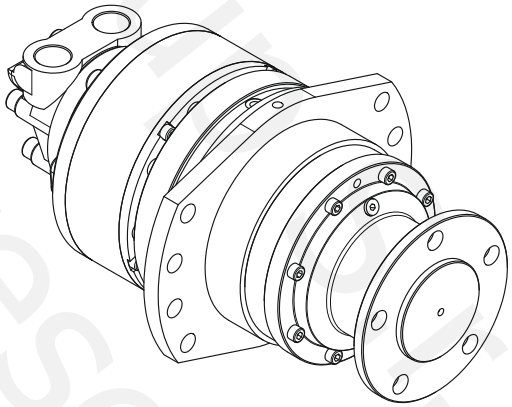
DIMENSIONS



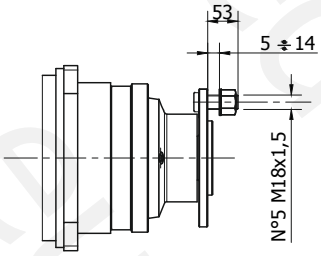


00 Standard output code





OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		260	380	500	560	700	850
Motor displ.	[cc]	74	91	115	129	166	166
Gear ratio	[]	3,55	4,28	4,28	4,28	4,28	5,16
Total displ.	[cc]	263	385	492	552	710	857
Specific torque	[Nm/bar]	4,2	6,1	7,8	8,8	11,3	13,6
Continuous pressure	[bar]	250	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350	320
Max speed	[rpm]	400	300	255	255	230	200
Max cont. torque	[Nm]	970	1400	1800	2050	2800	3400
Peak torque (*)	[Nm]	1350	1950	2500	2850	3950	4000
Max power	[kW]	35	35	35	35	35	35
Braking torque (optional)	[Nm]	2500	3000	3000	3000	3000	3500
Brake release pressure (min)	[bar]	18	18	18	18	18	18
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	65	65	65	65	65	65

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

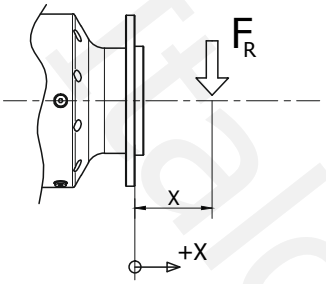
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

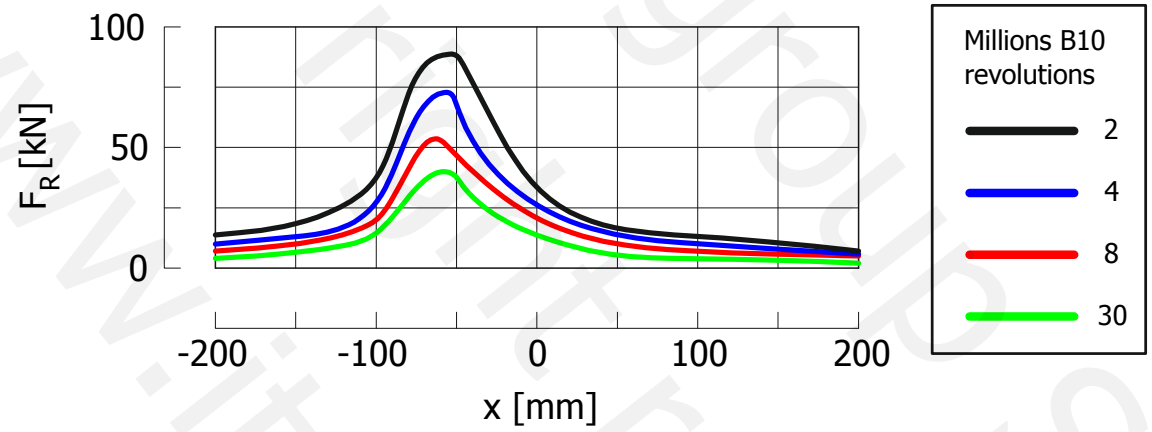
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

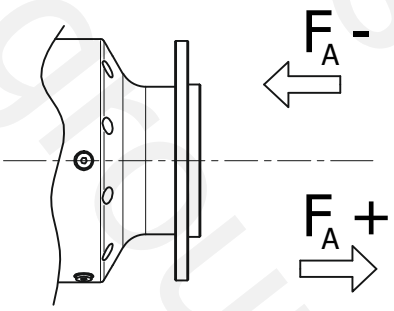
For more information please contact Italgroup technical department.

RADIAL LOAD





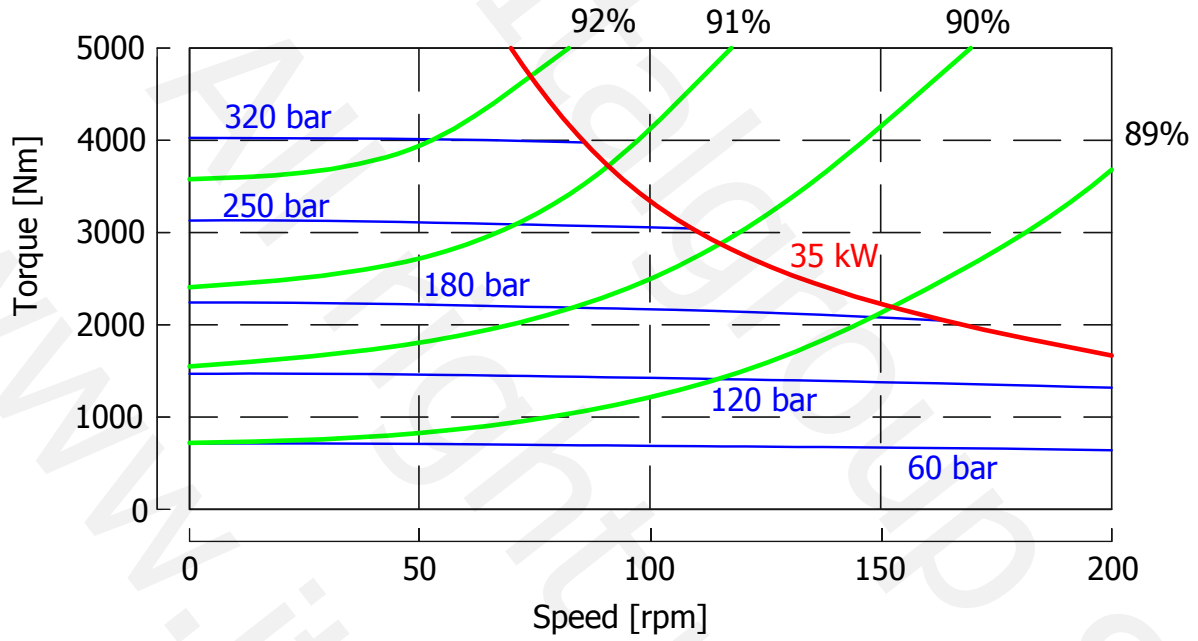
AXIAL LOAD



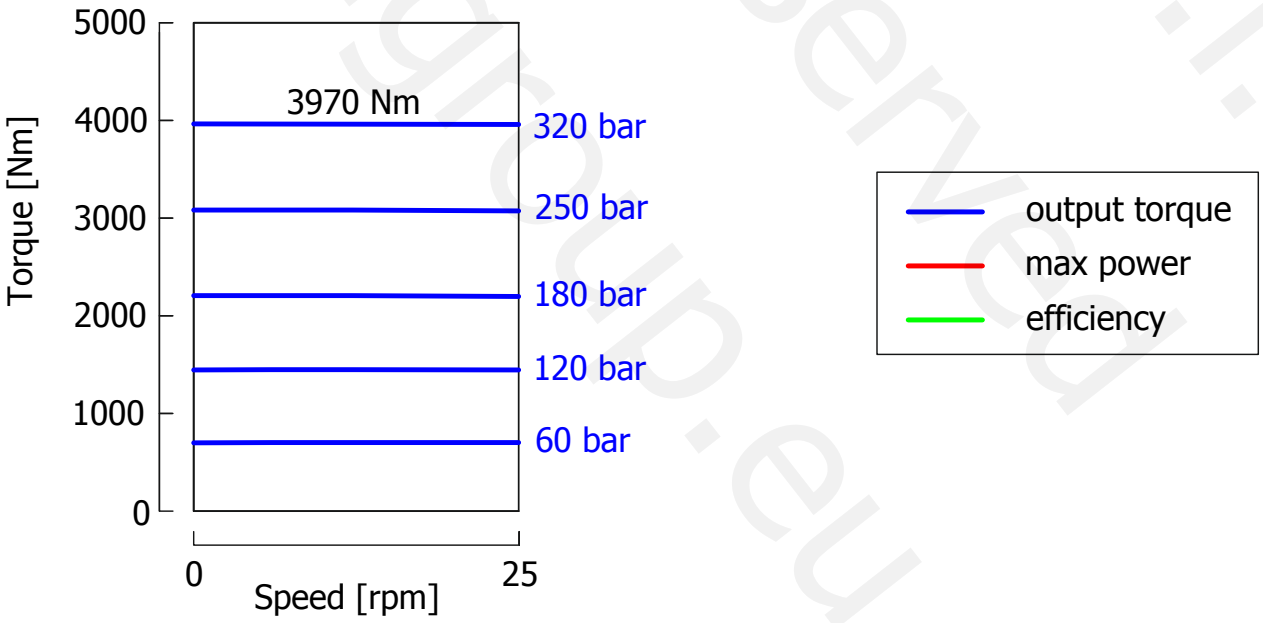
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 HC05 AF	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 HC05 850 AF



STARTING TORQUE DIAGRAM - W05 HC05 850 AF



W05 HC05 AF OUTPUT CONFIGURATIONS

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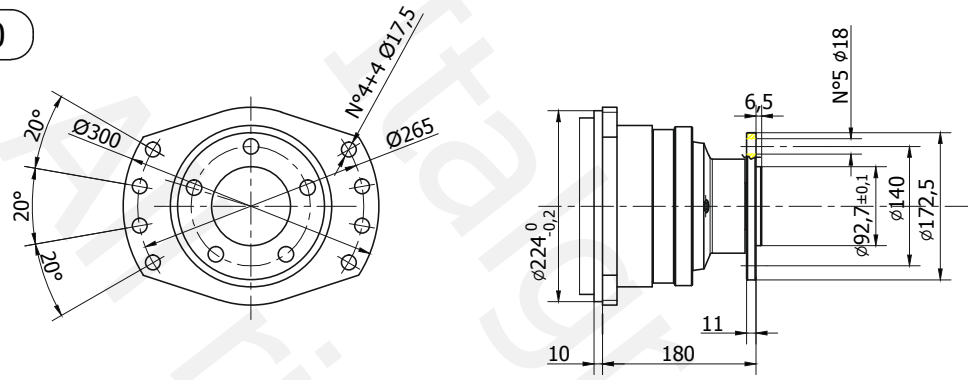
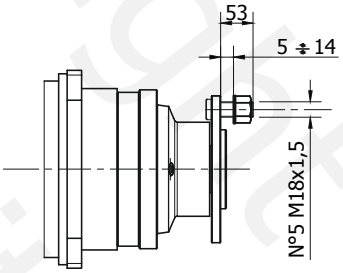


00 CO



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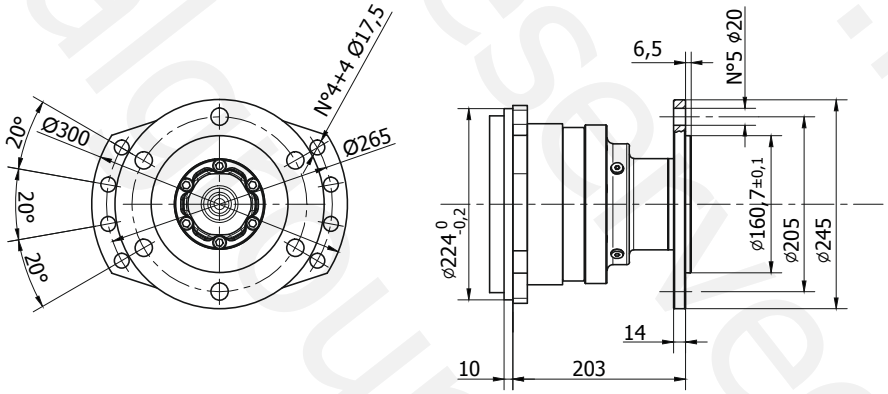
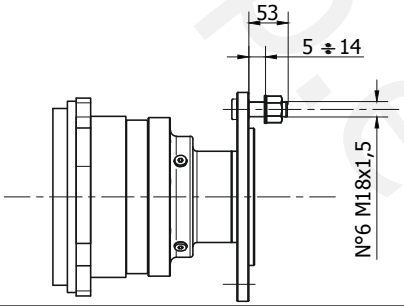
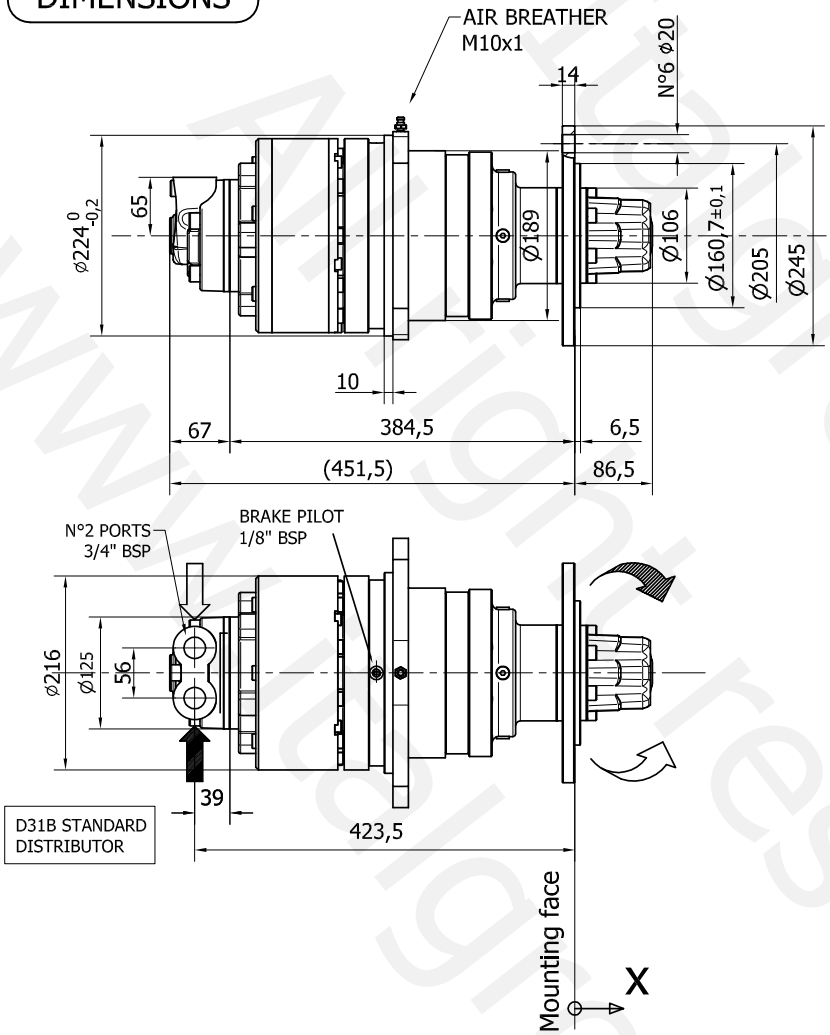
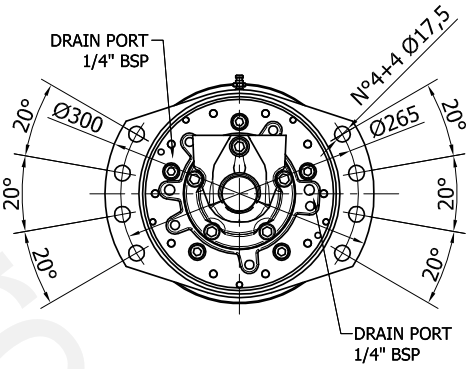


01 CO

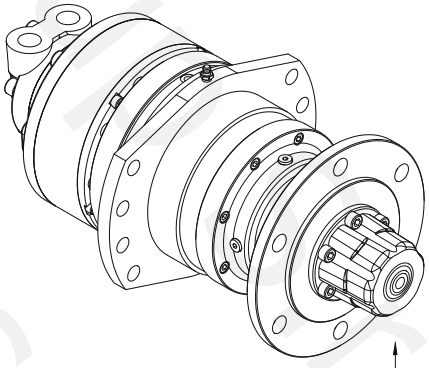


DIMENSIONS



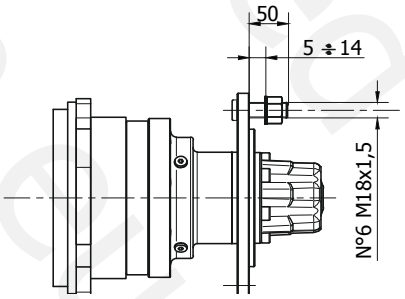


00 Standard output code



MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		260	380	500	560	700	850
Motor displ.	[cc]	74	91	115	129	166	166
Gear ratio	[]	3,55	4,28	4,28	4,28	4,28	5,16
Total displ.	[cc]	263	385	492	552	710	857
Specific torque	[Nm/bar]	4,2	6,1	7,8	8,8	11,3	13,6
Continuous pressure	[bar]	250	250	250	250	220	180
Peak pressure	[bar]	350	350	350	350	265	240
Max speed	[rpm]	400	300	255	255	230	200
Max cont. torque	[Nm]	970	1400	1800	2050	2500	2500
Peak torque (*)	[Nm]	1350	1950	2500	2850	3000	3000
Max power	[kW]	35	35	35	35	35	35
Braking torque (optional)	[Nm]	2500	3000	3000	3000	3000	3500
Brake release pressure (min)	[bar]	18	18	18	18	18	18
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	70	70	70	70	70	70

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

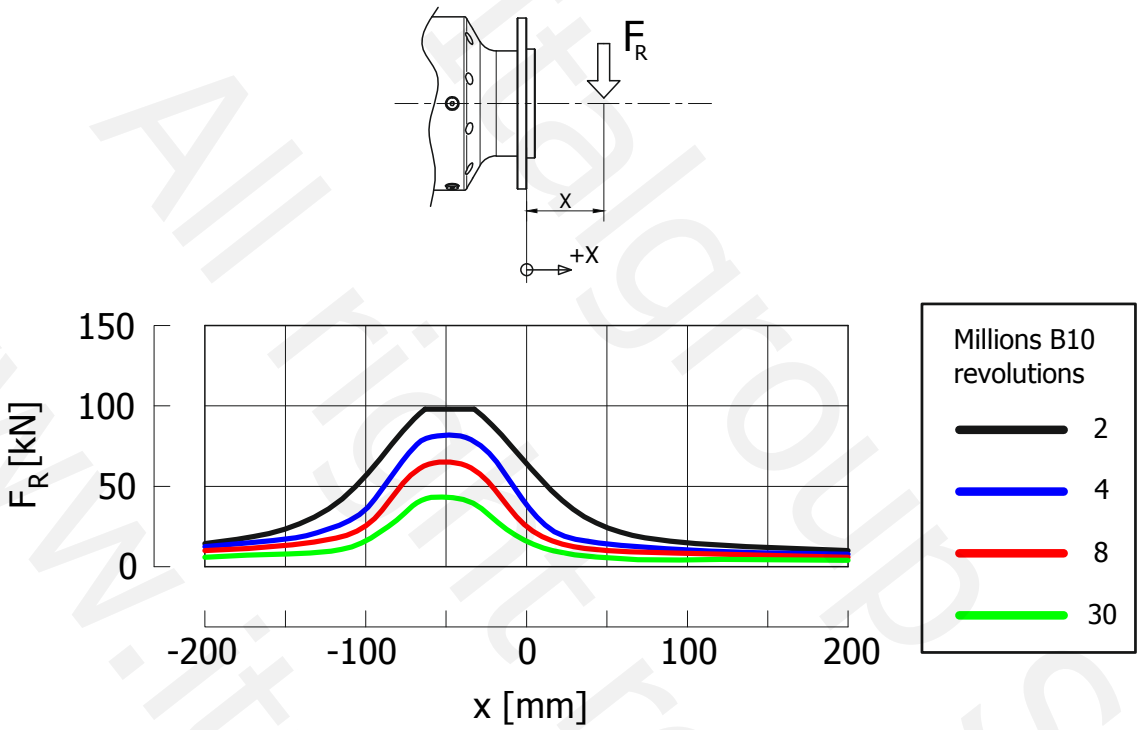
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

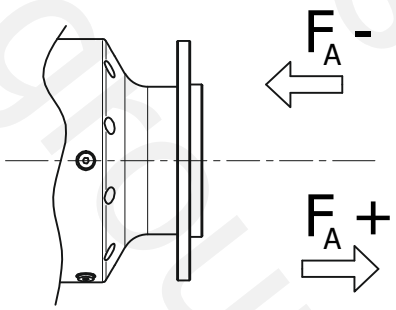
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



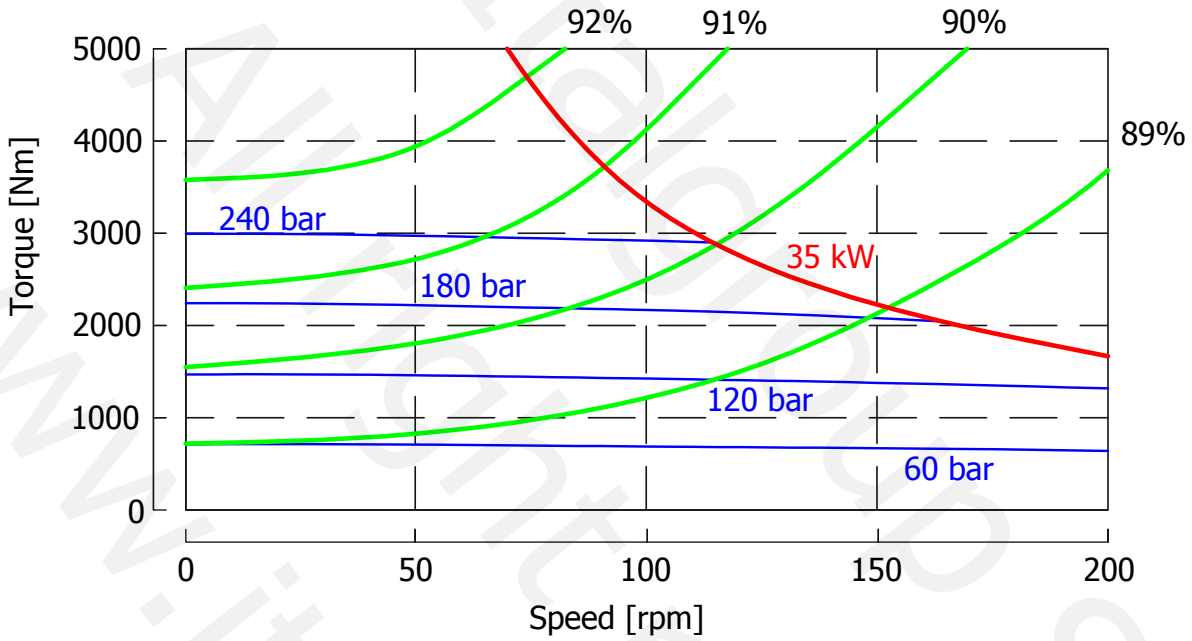
AXIAL LOAD



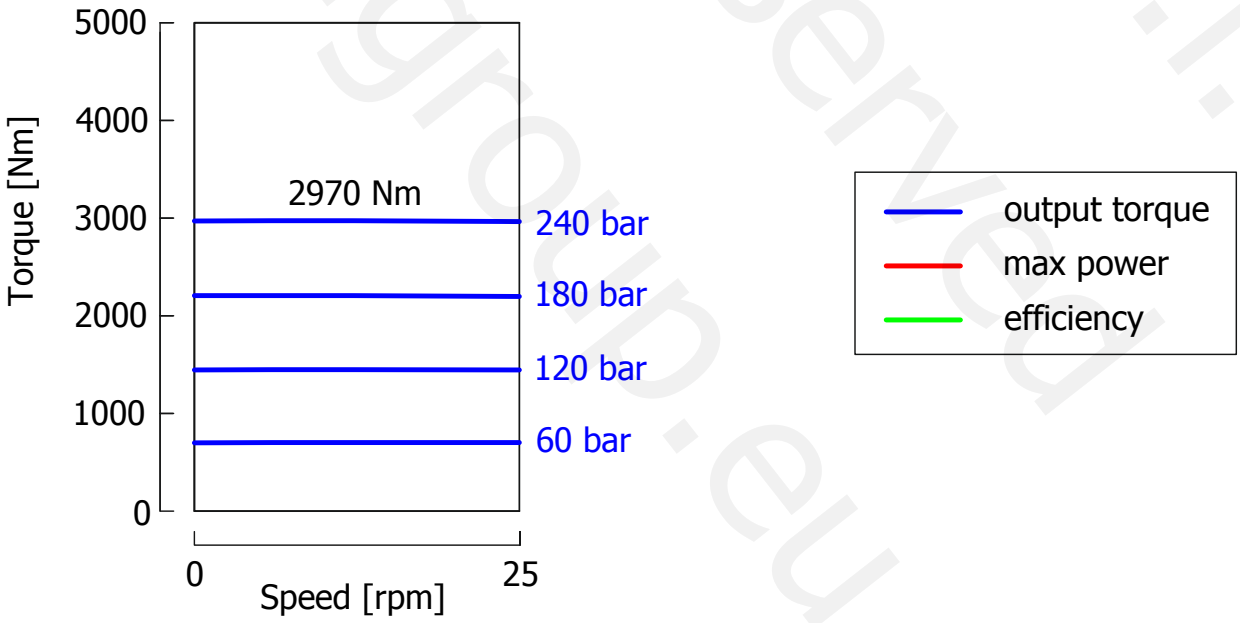
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 HC05 MD1	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

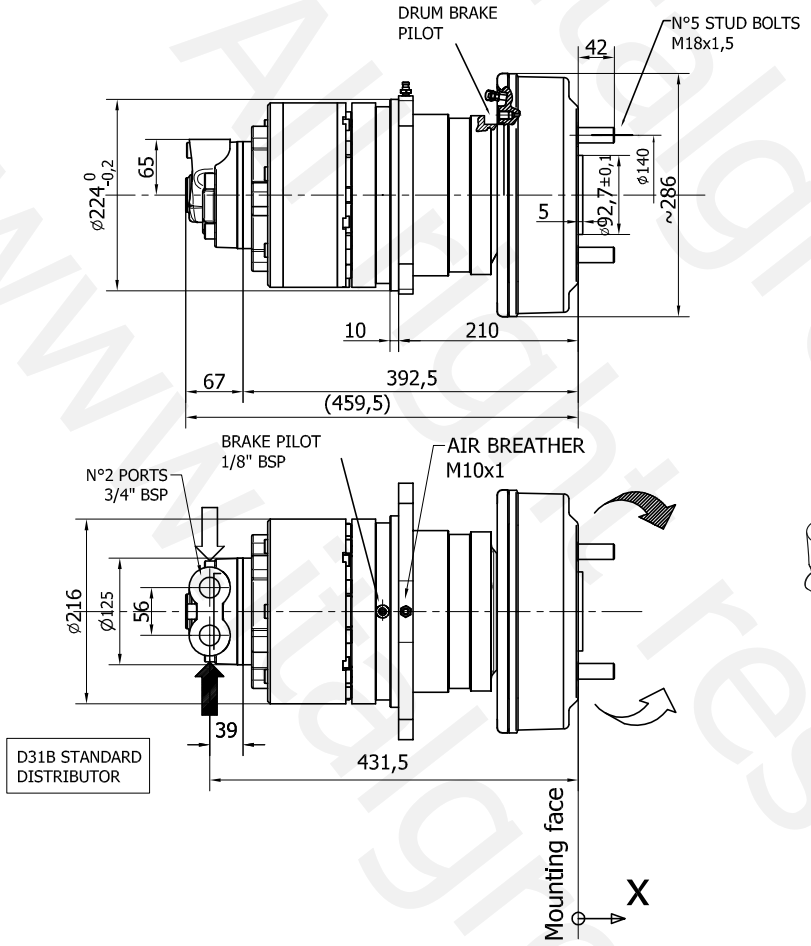
OPERATING DIAGRAM - W05 HC05 850 MD1

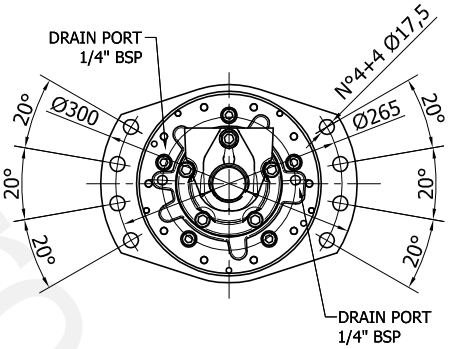


STARTING TORQUE DIAGRAM - W05 HC05 850 MD1

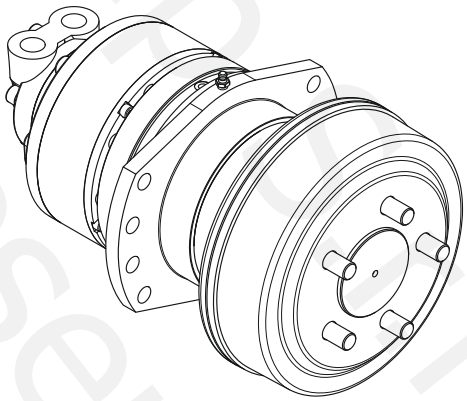


DIMENSIONS





00 Standard output code



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		260	380	500	560	700	850
Motor displ.	[cc]	74	91	115	129	166	166
Gear ratio	[]	3,55	4,28	4,28	4,28	4,28	5,16
Total displ.	[cc]	263	385	492	552	710	857
Specific torque	[Nm/bar]	4,2	6,1	7,8	8,8	11,3	13,6
Continuous pressure	[bar]	250	250	250	250	240	250
Peak pressure	[bar]	350	350	350	350	285	320
Max speed	[rpm]	400	300	255	255	230	200
Max cont. torque	[Nm]	970	1400	1800	2050	2500	3400
Peak torque (*)	[Nm]	1350	1950	2500	2850	3000	4000
Max power	[kW]	35	35	35	35	35	35
Braking torque (optional)	[Nm]	2500	3000	3000	3000	3000	3500
Brake release pressure (min)	[bar]	18	18	18	18	18	18
Drum brake torque	[Nm]	3000	3000	3000	3000	3000	3000
Drum brake max pressure	[bar]	100	100	100	100	100	100
Drum brake pilot	[]	M10x1	M10x1	M10x1	M10x1	M10x1	M10x1
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	85	85	85	85	85	85

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

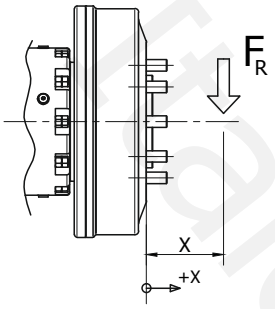
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

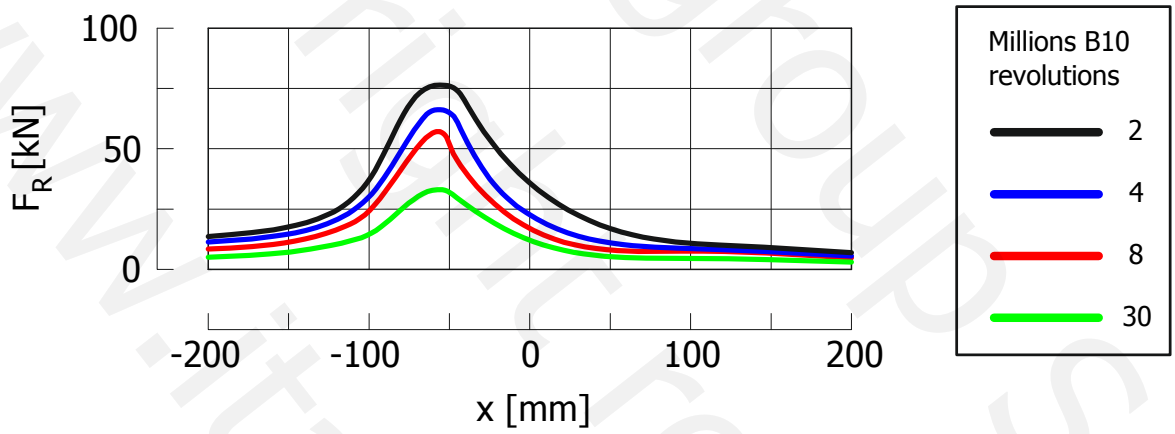
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

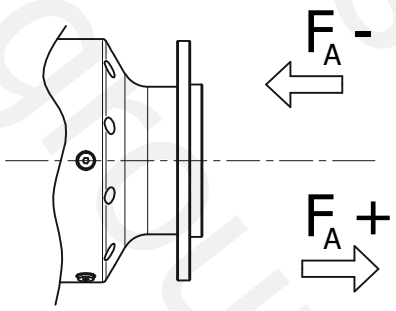
For more information please contact Italgroup technical department.

RADIAL LOAD





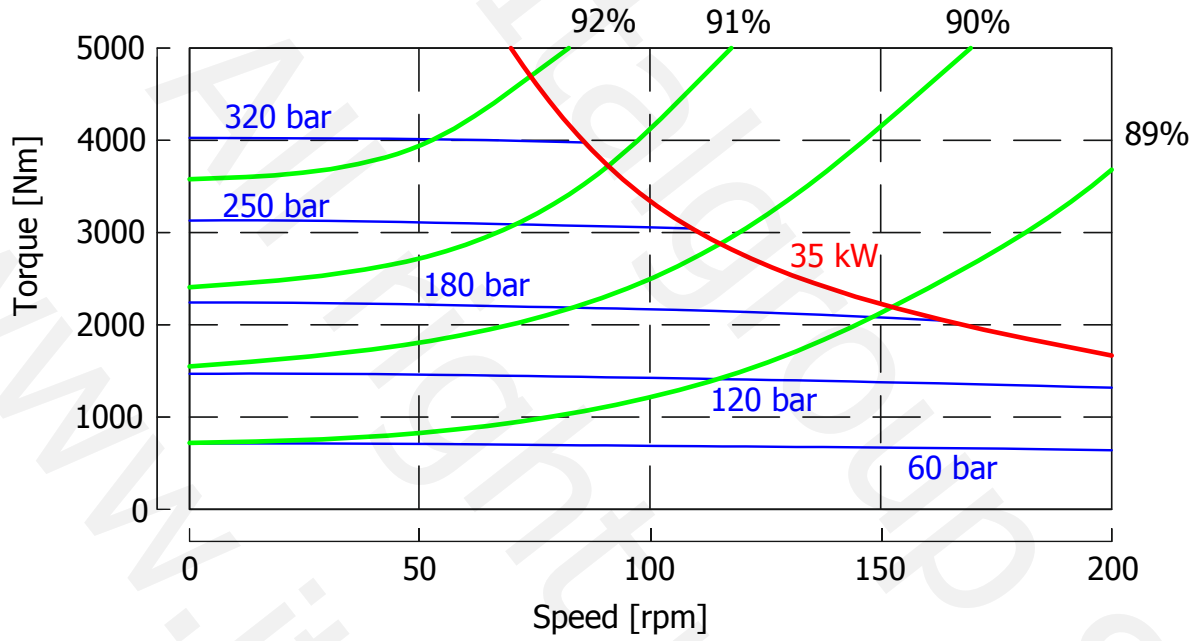
AXIAL LOAD



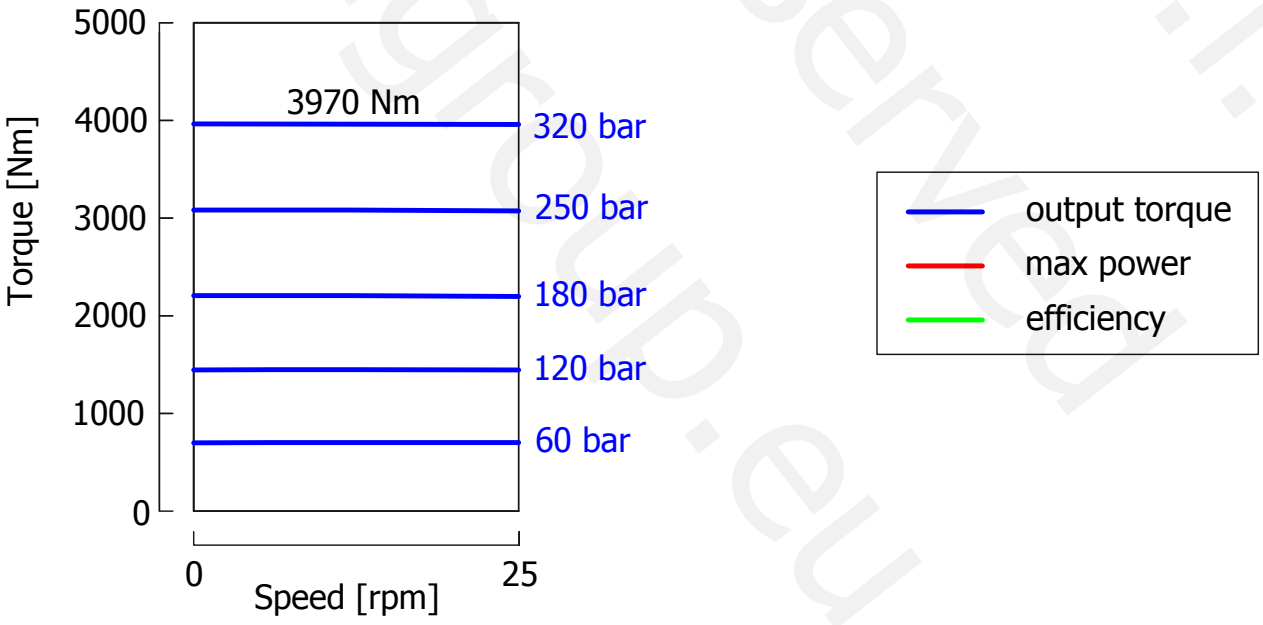
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W05 HC05 DB	21	21	27	21

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W05 HC05 850 DB

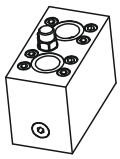


STARTING TORQUE DIAGRAM - W05 HC05 850 DB

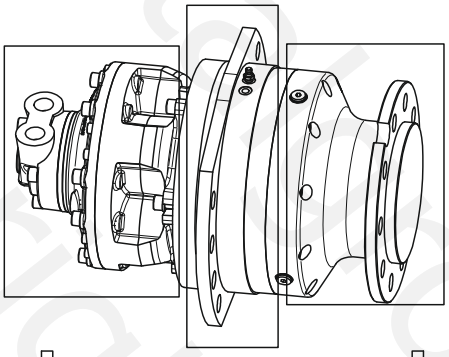


W08 WHEEL MOTOR MAIN FEATURES

W08

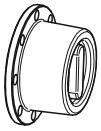


Valve block
See pag. 142-145



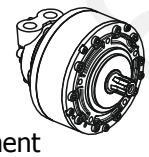
Wheel stud
See pag. 147

Tachometer
See pag. 138-140



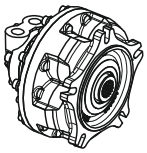
Mechanical disengage
See pag. 146

HYDRAULIC MOTOR



HC05

Single displacement motor, freewheeling mode: 115-166 cc



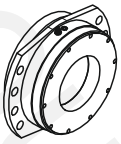
HC1

Single displacement motor, freewheeling mode: 200-243 cc

GEAR & BRAKE UNIT

Available ratio

3,77 | 4,12 | 5,16 | 6,00 | 7,25

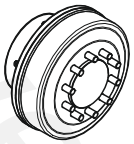


WB
Without brake

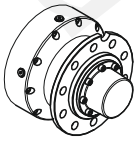
NB
With negative brake

OUTPUT CONFIGURATION

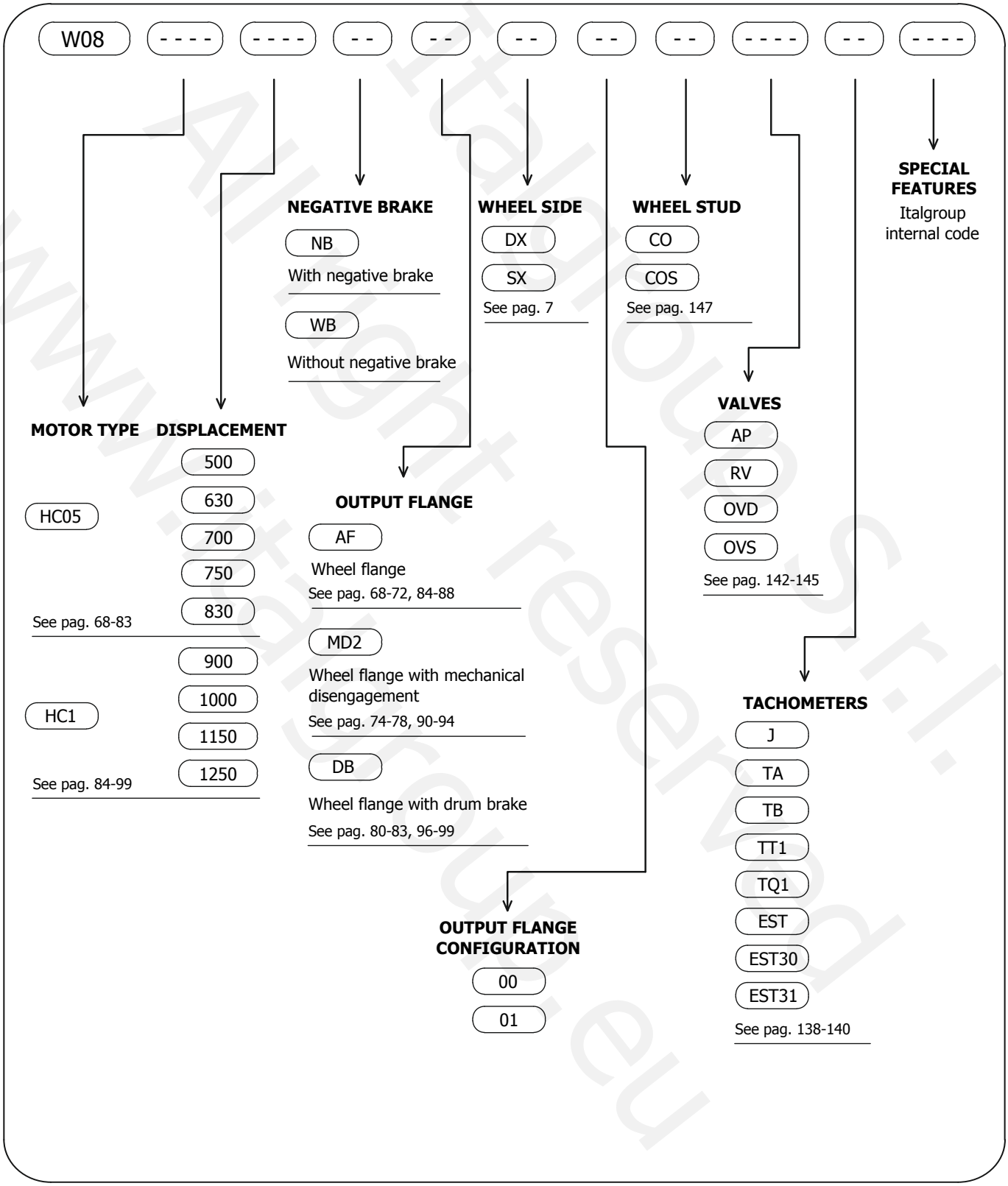
AF
Wheel flange



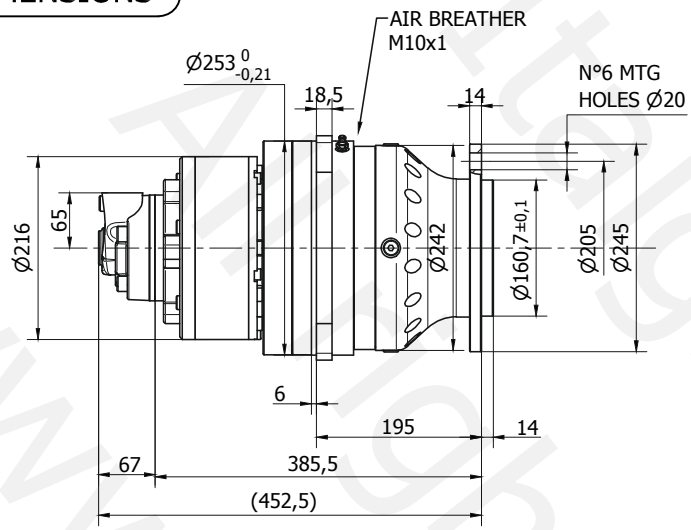
DB
Wheel flange with drum brake

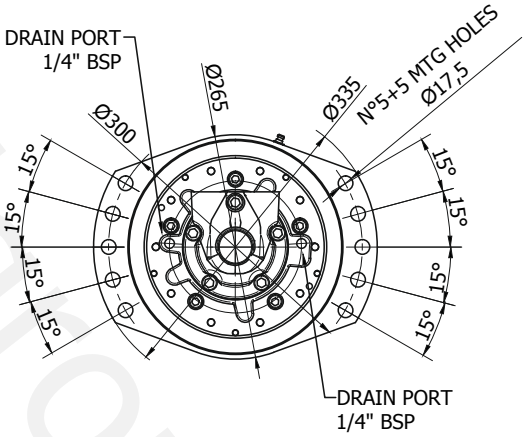


MD2
Wheel flange with mechanichal disengage

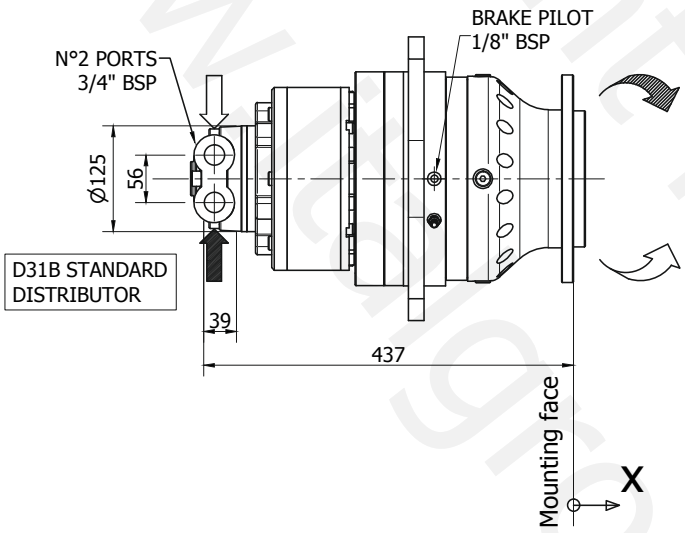


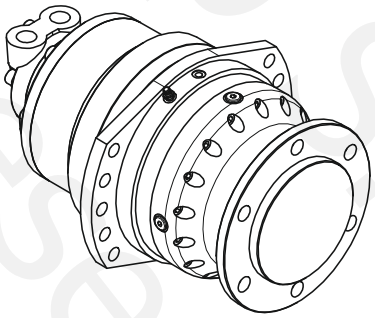
DIMENSIONS





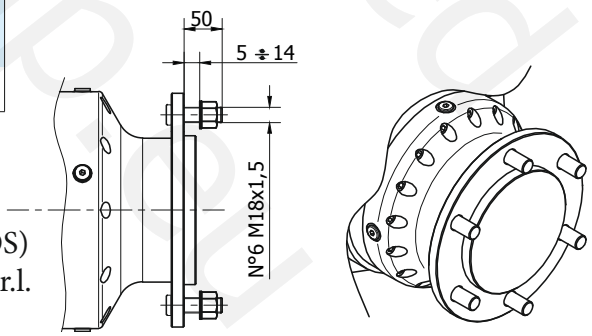
00 Standard output code





OPTIONAL: STUD BOLTS

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560



(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		500	630	700	750	830
Motor displ.	[cc]	115	151	166	151	166
Gear ratio	[]	4,12	4,12	4,12	5,16	5,16
Total displ.	[cc]	474	622	684	780	857
Specific torque	[Nm/bar]	7,5	9,9	10,9	12,4	13,6
Continuous pressure	[bar]	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350
Max speed	[rpm]	250	240	240	210	200
Max cont. torque	[Nm]	1700	2250	2450	2800	3080
Peak torque (*)	[Nm]	2400	3100	3450	3900	4300
Max power	[kW]	35	35	35	35	35
Negative brake torque	[Nm]	3900	3900	3900	4900	4900
Brake release pressure (min)	[bar]	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	85	85	85	85	85

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

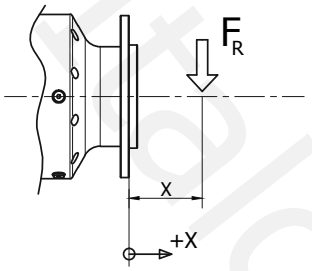
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

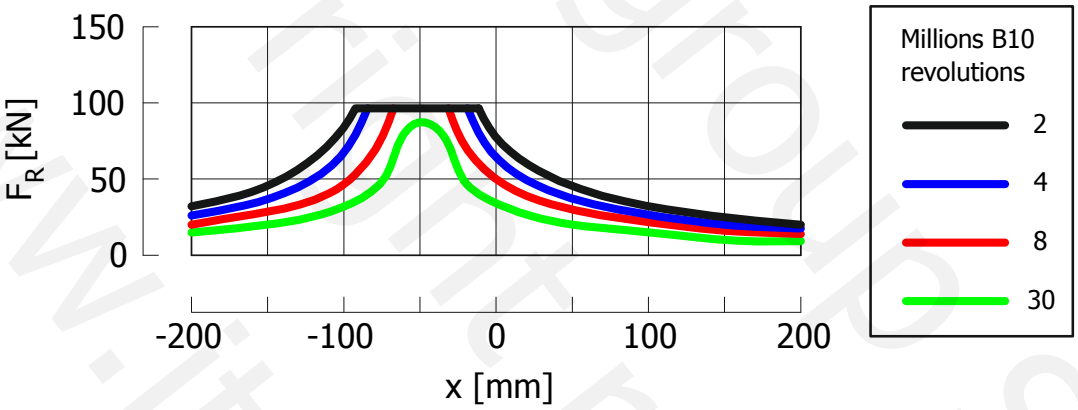
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

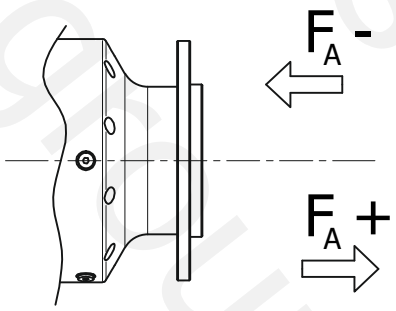
For more information please contact Italgroup technical department.

RADIAL LOAD





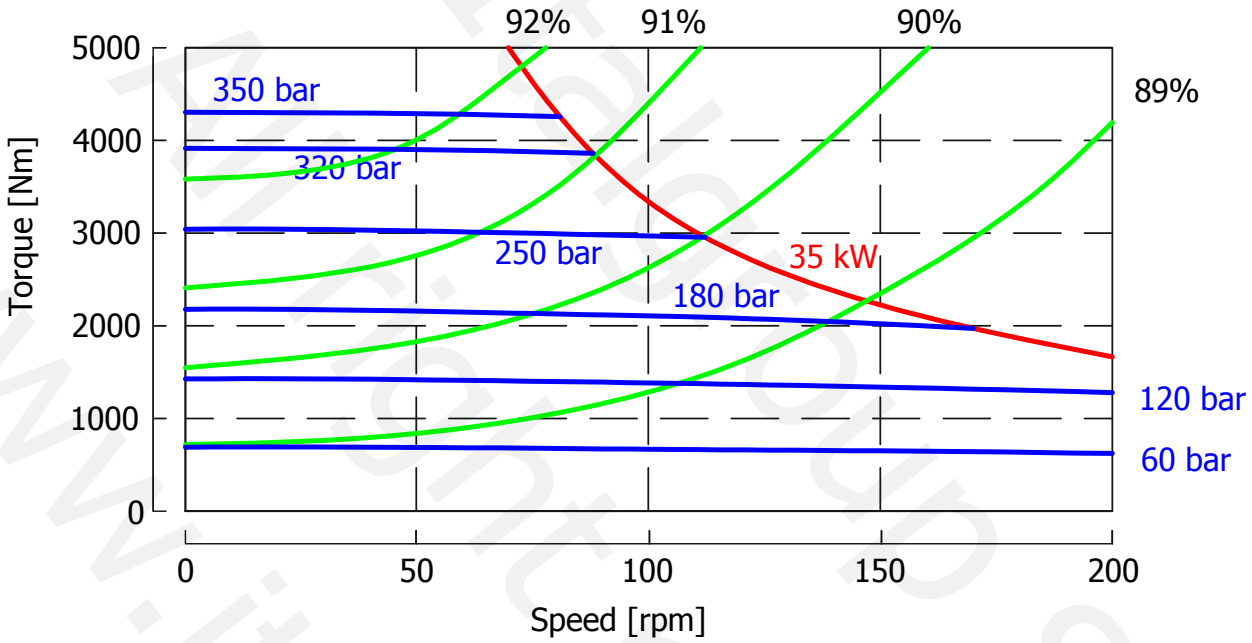
AXIAL LOAD



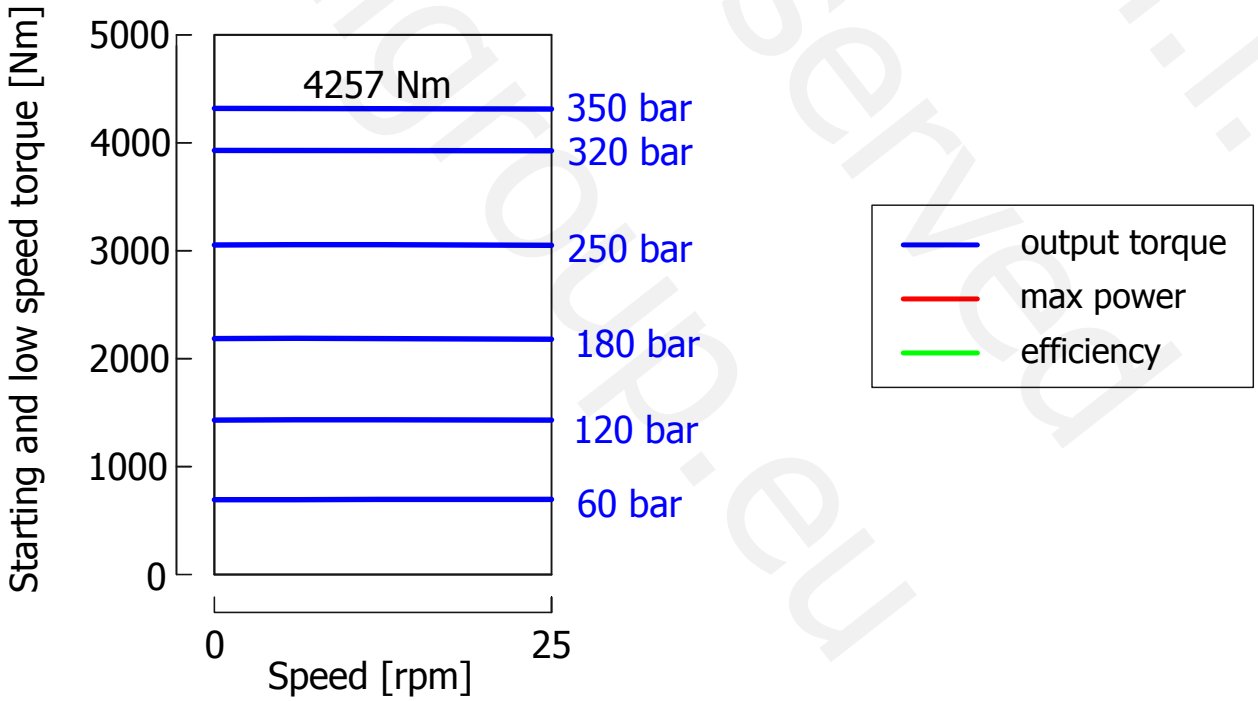
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC05 AF	45	40	50	40

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W08 HC05 830 AF

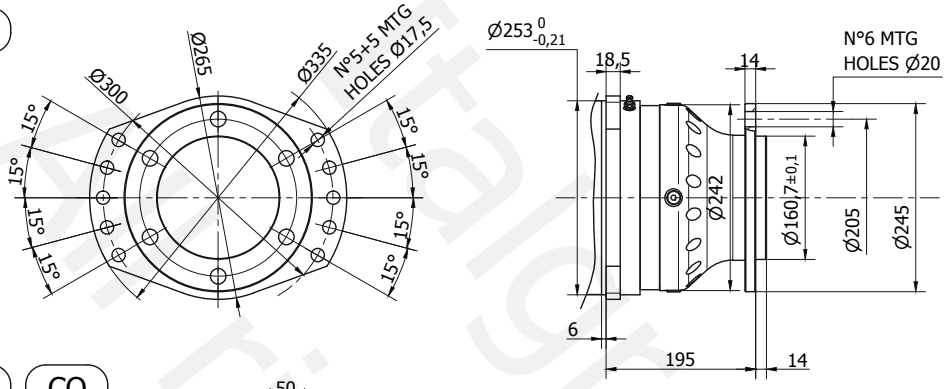


STARTING TORQUE DIAGRAM - W08 HC05 830 AF

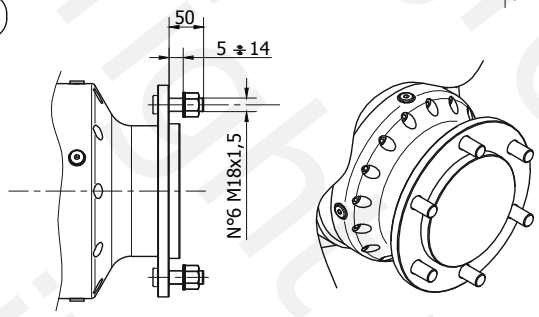


W08 HC05 AF - OUTPUT CONFIGURATIONS

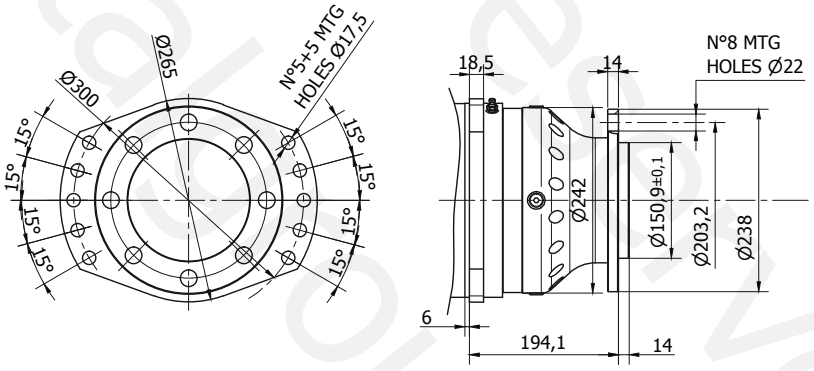
00



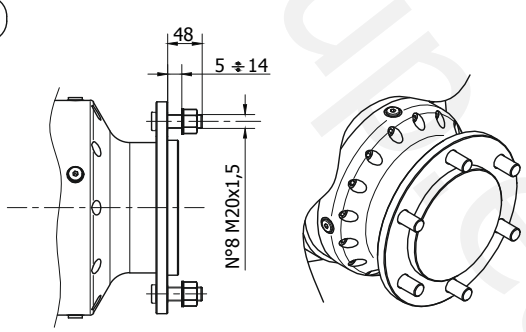
00 CO



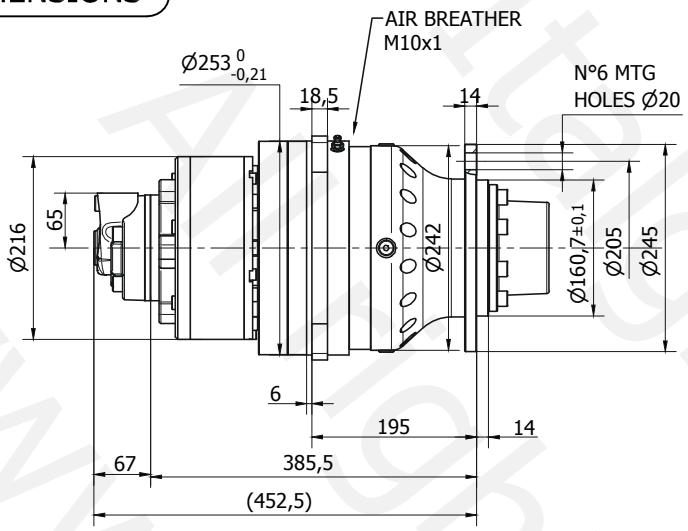
01

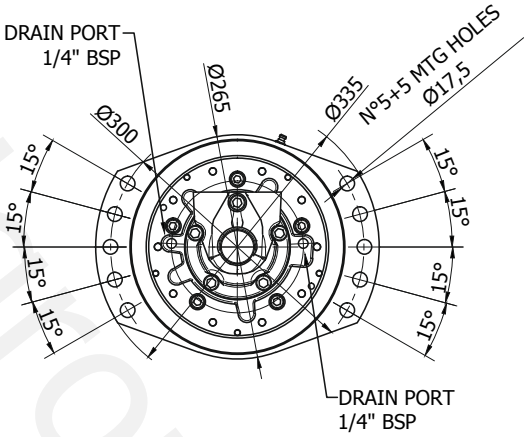


01 CO

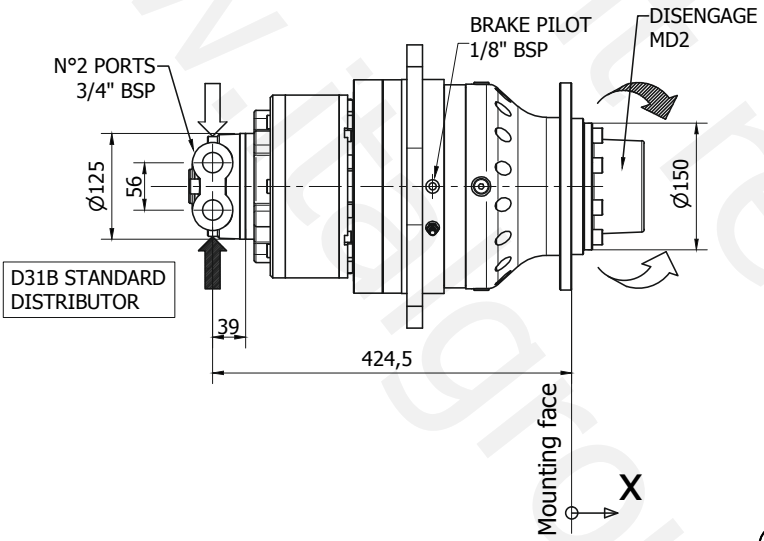


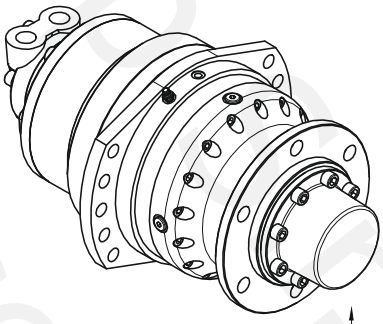
DIMENSIONS





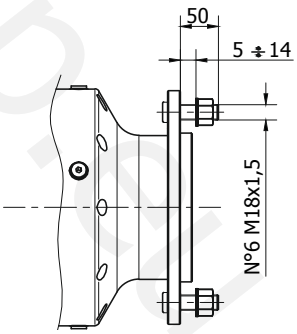
00 Standard output code

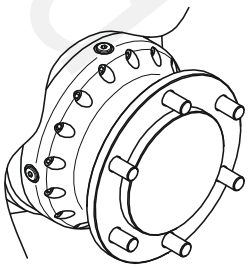




MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS





Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		500	630	700	750	830
Motor displ.	[cc]	115	151	166	151	166
Gear ratio	[]	4,12	4,12	4,12	5,16	5,16
Total displ.	[cc]	474	622	684	780	857
Specific torque	[Nm/bar]	7,5	9,9	10,9	12,4	13,6
Continuous pressure	[bar]	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350
Max speed	[rpm]	250	240	240	210	200
Max cont. torque	[Nm]	1700	2250	2450	2800	3080
Peak torque (*)	[Nm]	2400	3100	3450	3900	4300
Max power	[kW]	35	35	35	35	35
Negative brake torque	[Nm]	3900	3900	3900	4900	4900
Brake release pressure (min)	[bar]	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	90	90	90	90	90

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

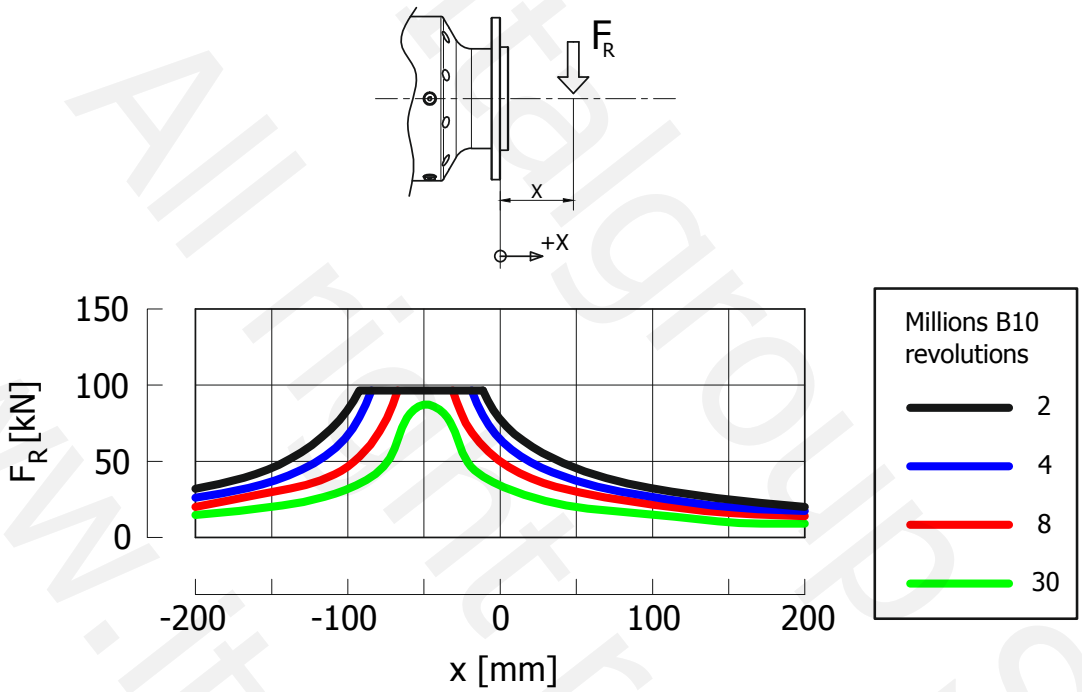
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

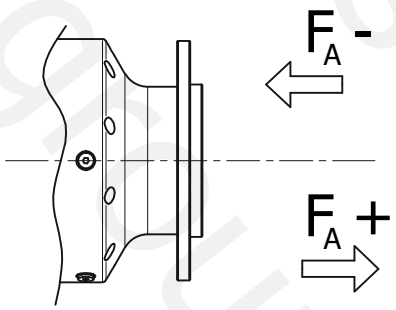
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



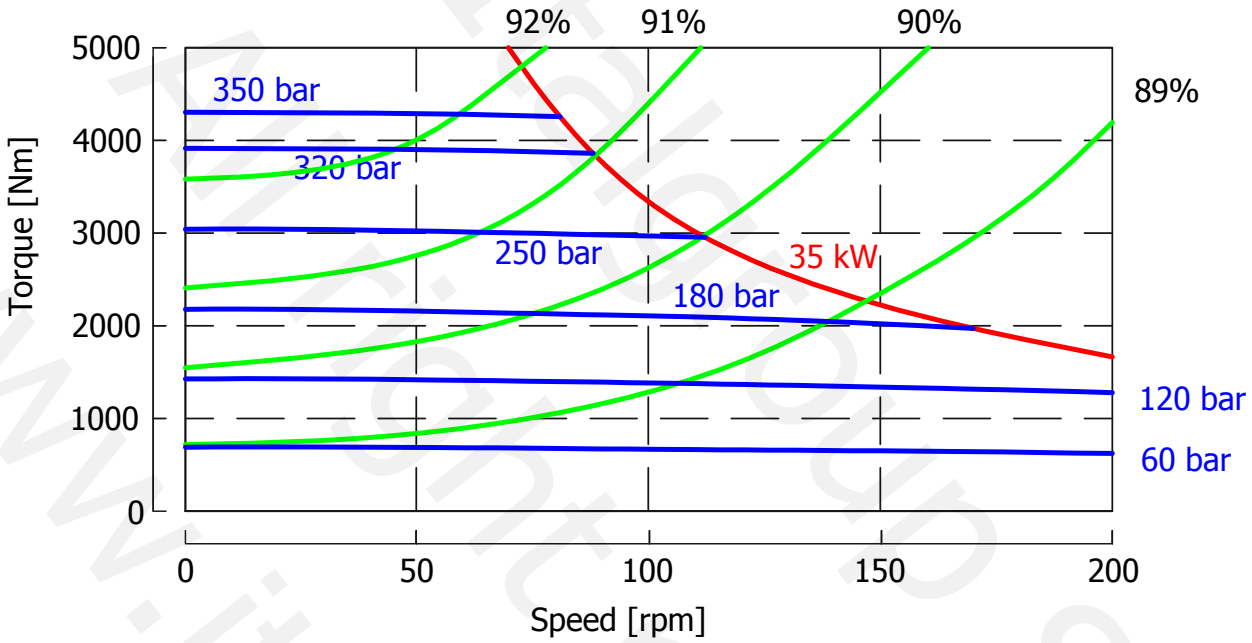
AXIAL LOAD



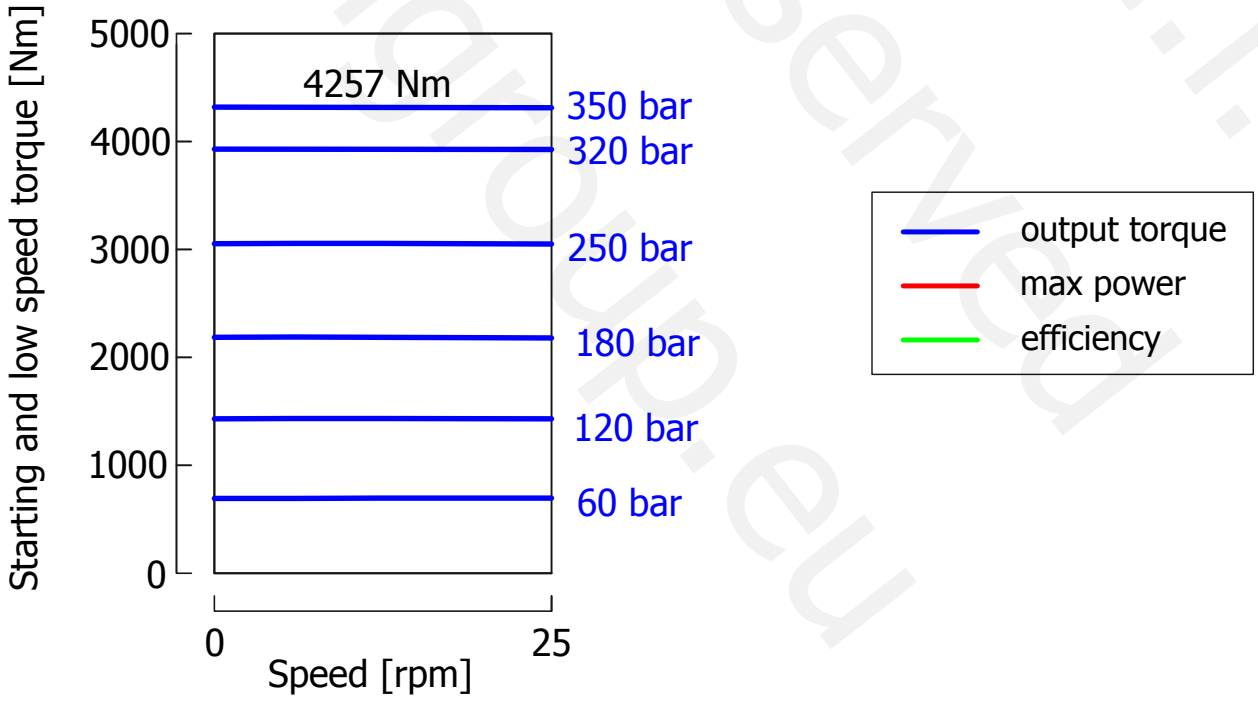
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC05 MD2	45	40	50	40

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W08 HC05 830 MD2

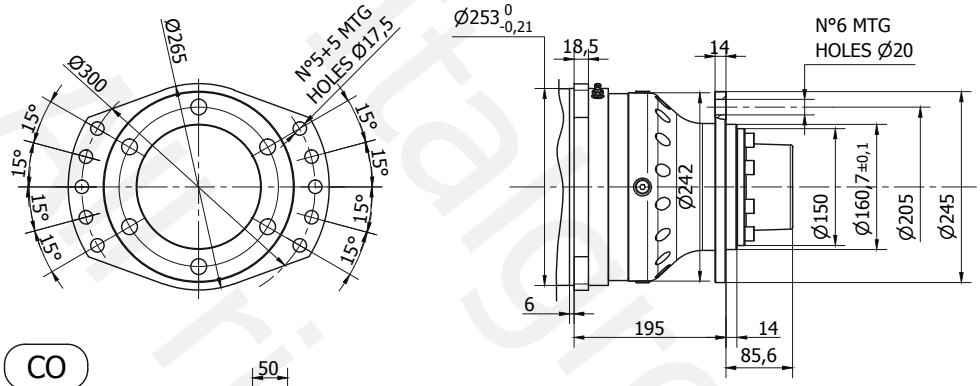


STARTING TORQUE DIAGRAM - W08 HC05 830 MD2

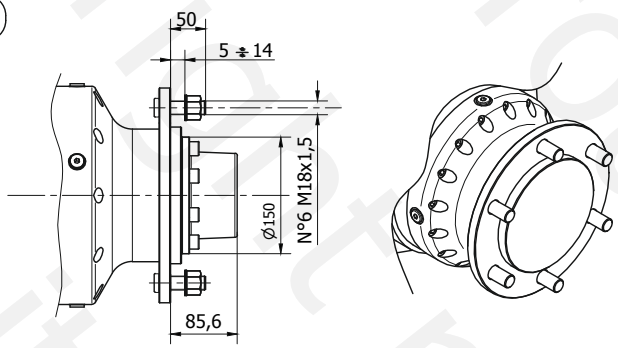


W08 HC05 MD2 - OUTPUT CONFIGURATIONS

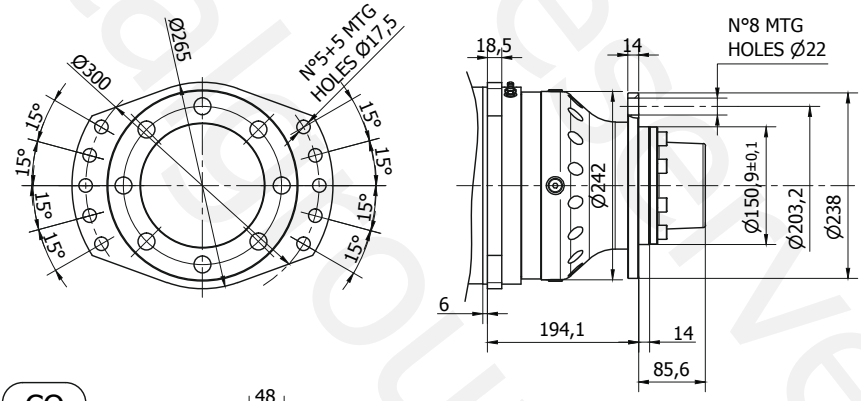
00



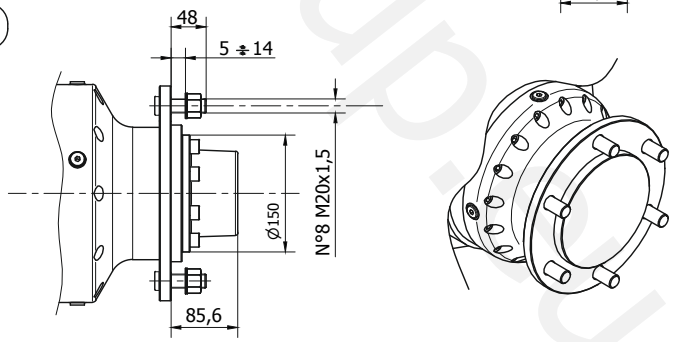
00 CO



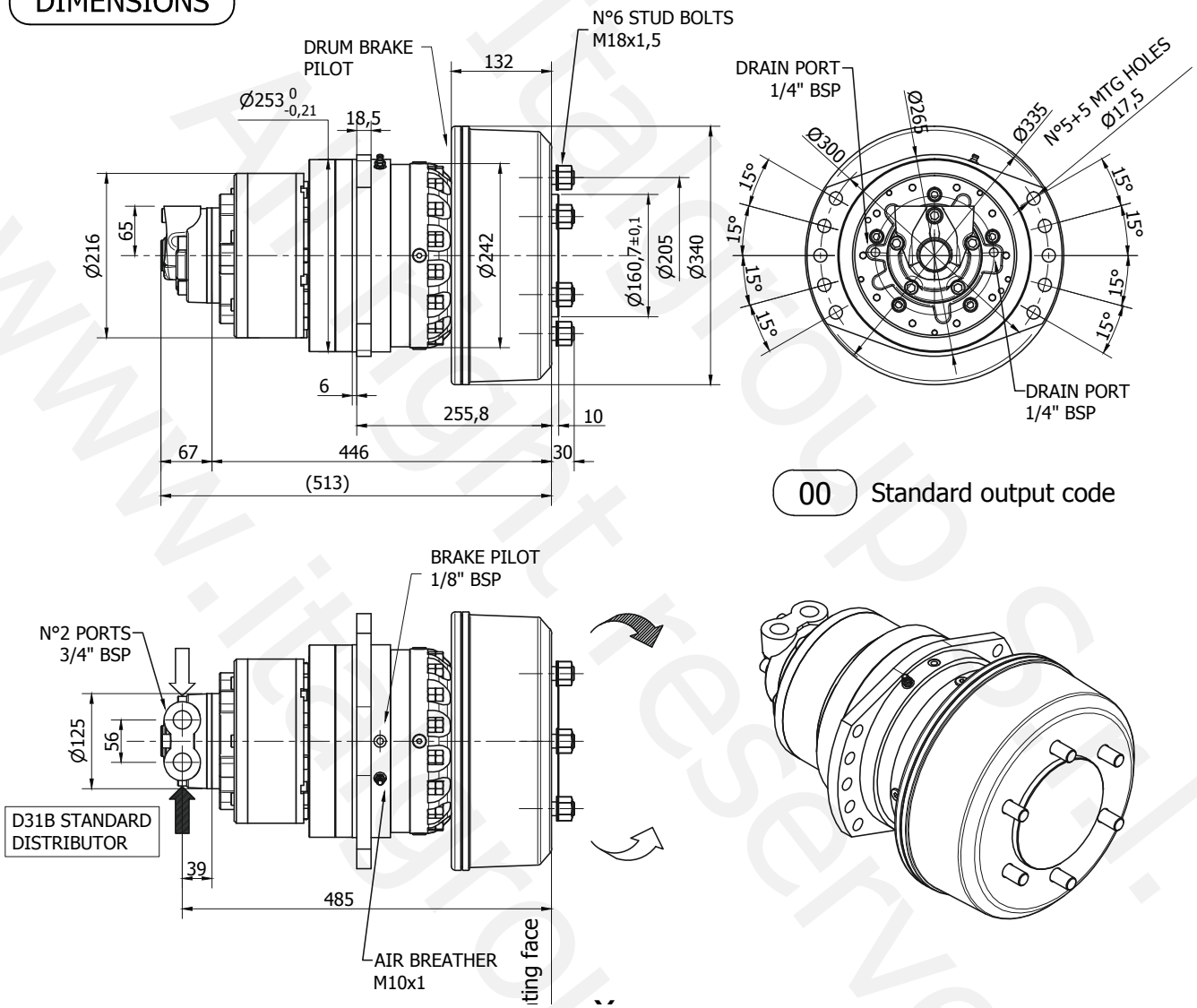
01



01 CO



DIMENSIONS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		500	630	700	750	830
Motor displ.	[cc]	115	151	166	151	166
Gear ratio	[]	4,12	4,12	4,12	5,16	5,16
Total displ.	[cc]	474	622	684	780	857
Specific torque	[Nm/bar]	7,5	9,9	10,9	12,4	13,6
Continuous pressure	[bar]	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350
Max speed	[rpm]	250	240	240	210	200
Max cont. torque	[Nm]	1700	2250	2450	2800	3080
Peak torque (*)	[Nm]	2400	3100	3450	3900	4300
Max power	[kW]	35	35	35	35	35
Negative brake torque	[Nm]	3900	3900	3900	4900	4900
Brake release pressure (min)	[bar]	13	13	13	13	13
Drum brake torque	[Nm]	6000	6000	6000	6000	6000
Drum brake max pressure	[bar]	110	110	110	110	110
Drum brake pilot	[]	3/8" UNF	3/8" UNF	3/8" UNF	3/8" UNF	3/8" UNF
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	105	105	105	105	105

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

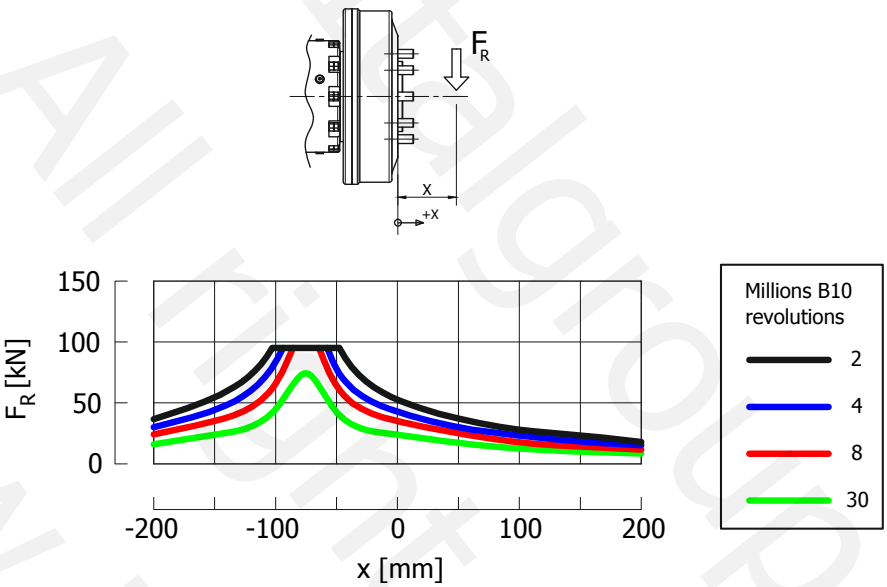
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

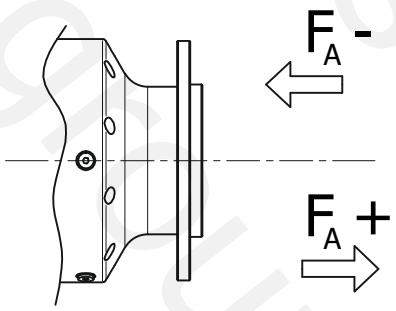
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



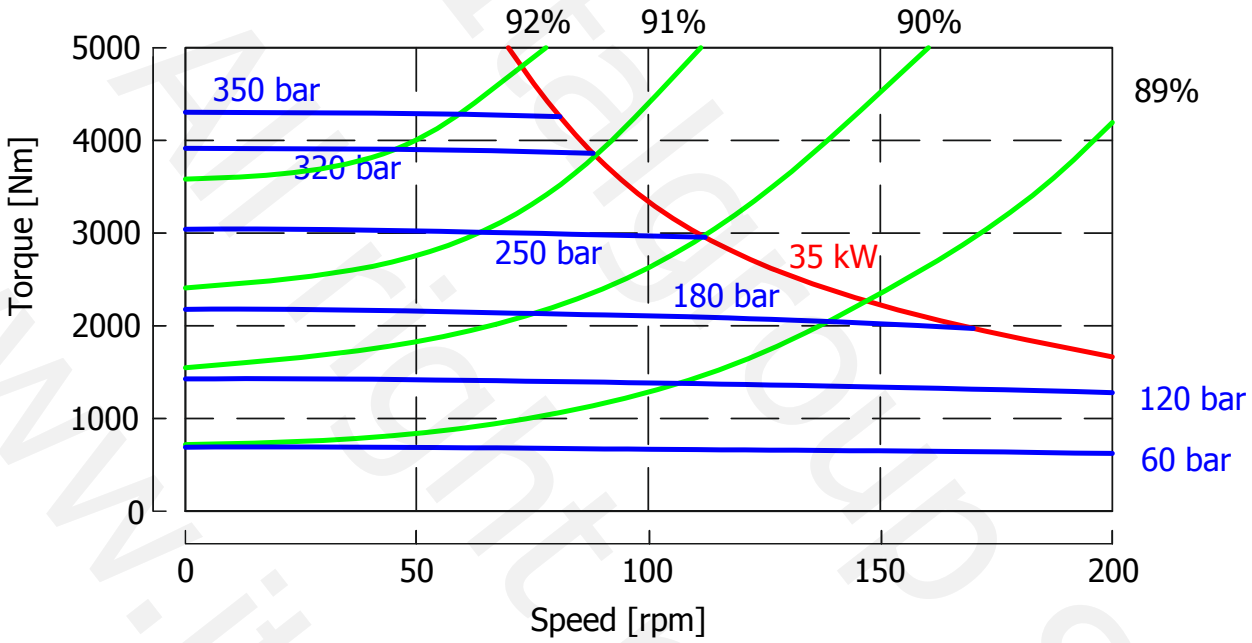
AXIAL LOAD



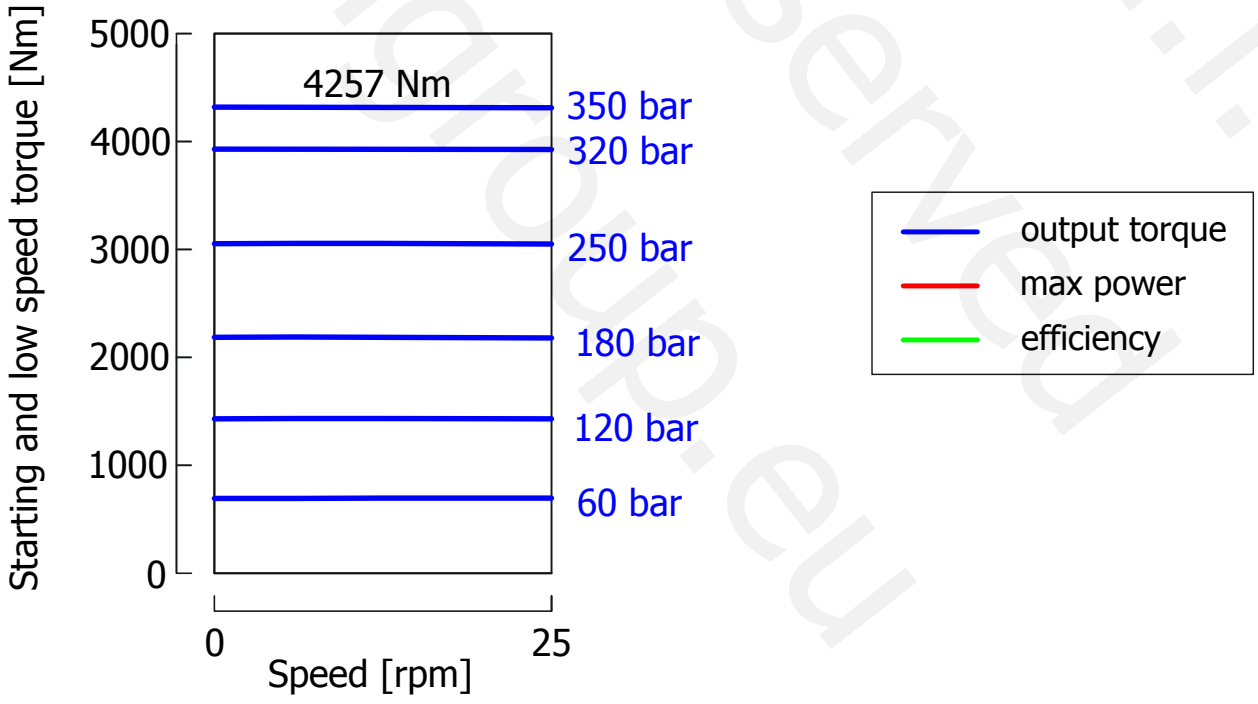
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC05 DB	45	40	32	32

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

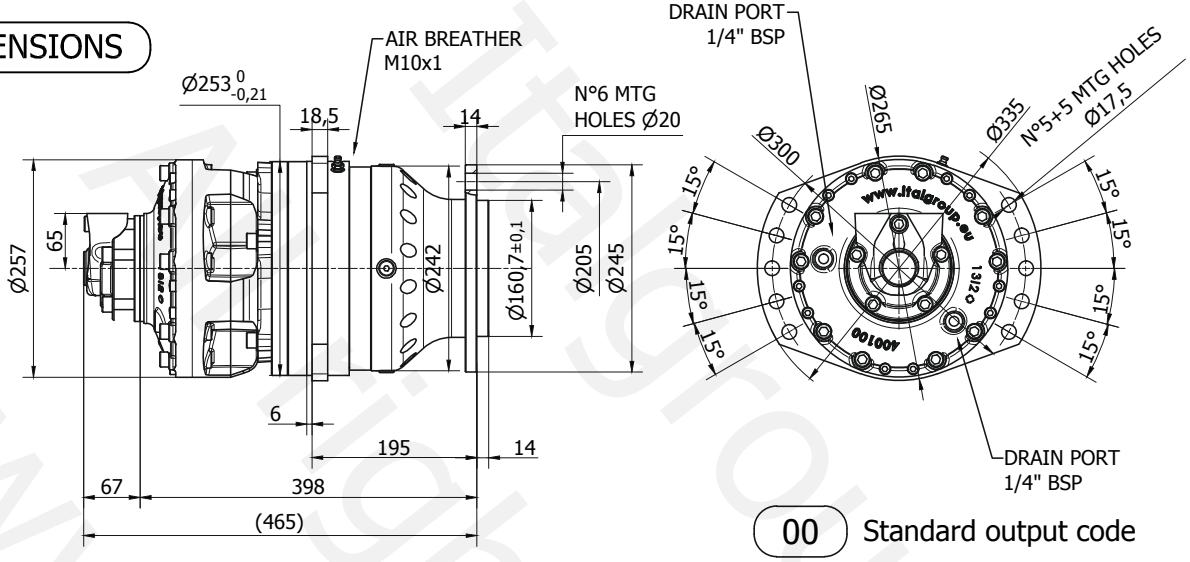
OPERATING DIAGRAM - W08 HC05 830 DB



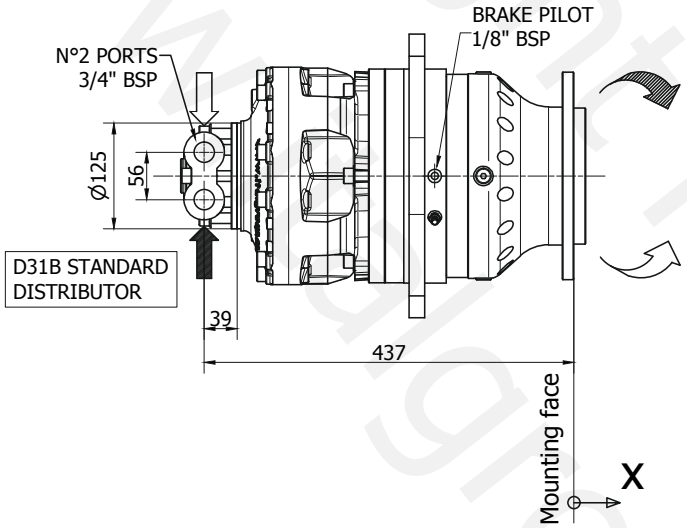
STARTING TORQUE DIAGRAM - W08 HC05 830 DB

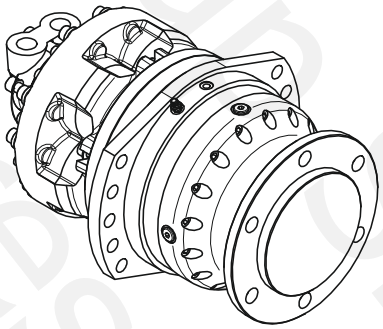


DIMENSIONS



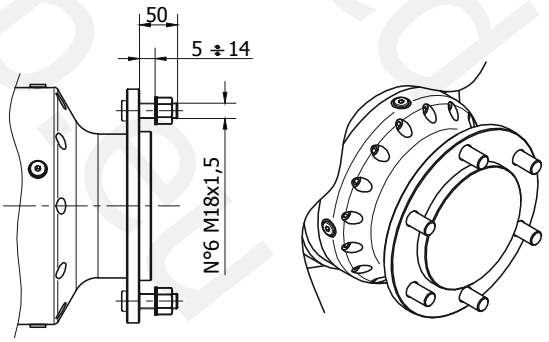
00 Standard output code





OPTIONAL: STUD BOLTS

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560



(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		900	1000	1150	1250
Motor displ.	[cc]	220	200	220	243
Gear ratio	[]	4,12	5,16	5,16	5,16
Total displ.	[cc]	906	1032	1135	1254
Specific torque	[Nm/bar]	14,4	16,4	18	20
Continuous pressure	[bar]	250	250	250	250
Peak pressure	[bar]	350	350	350	350
Max speed	[rpm]	195	175	155	155
Max cont. torque	[Nm]	3250	3700	4080	4500
Peak torque (*)	[Nm]	4550	5200	5700	6300
Max power	[kW]	45	45	45	45
Negative brake torque	[Nm]	5900	7300	7300	7300
Brake release pressure (min)	[bar]	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	90	90	90	90

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

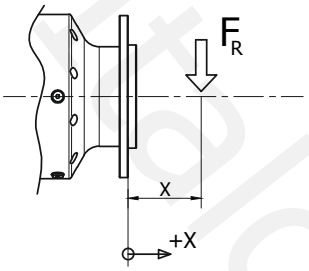
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

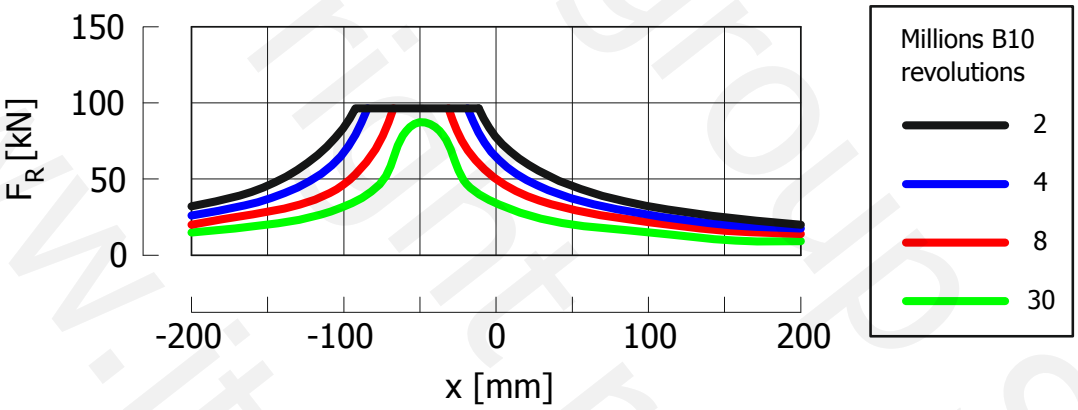
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

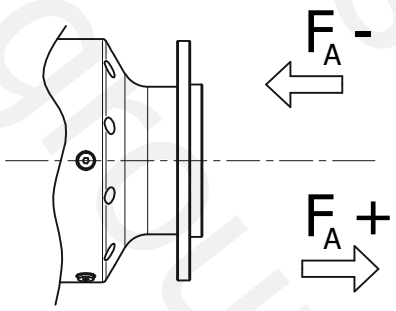
For more information please contact Italgroup technical department.

RADIAL LOAD





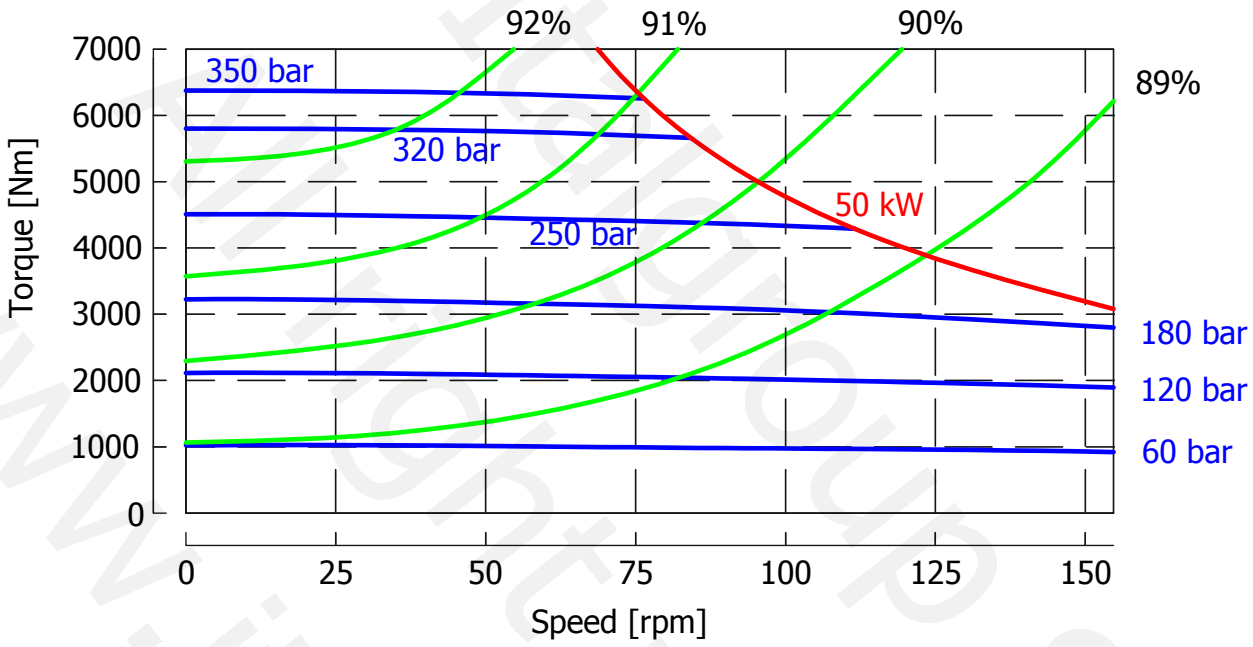
AXIAL LOAD



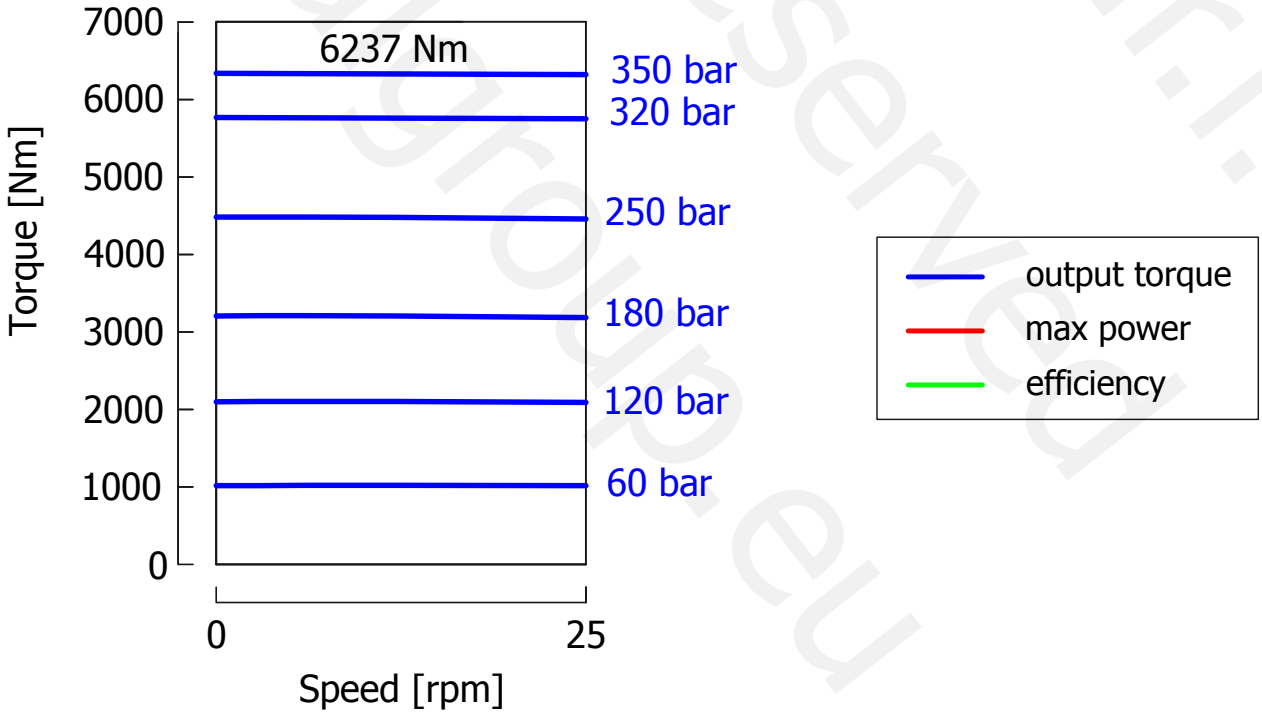
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC1 AF	45	40	50	40

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W08 HC1 1250 AF



STARTING TORQUE DIAGRAM - W08 HC1 1250 AF



W08 HC1 AF - OUTPUT CONFIGURATIONS

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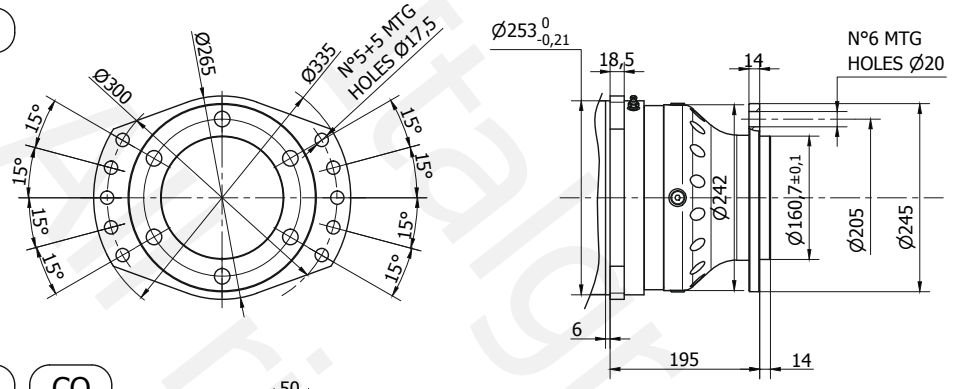
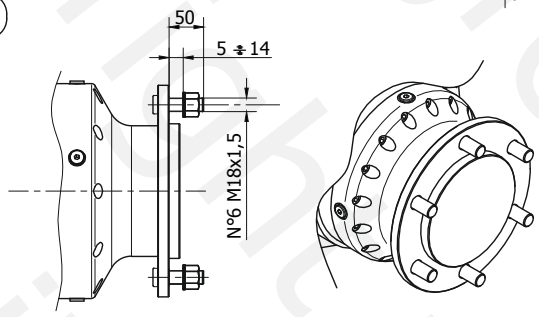


00 CO



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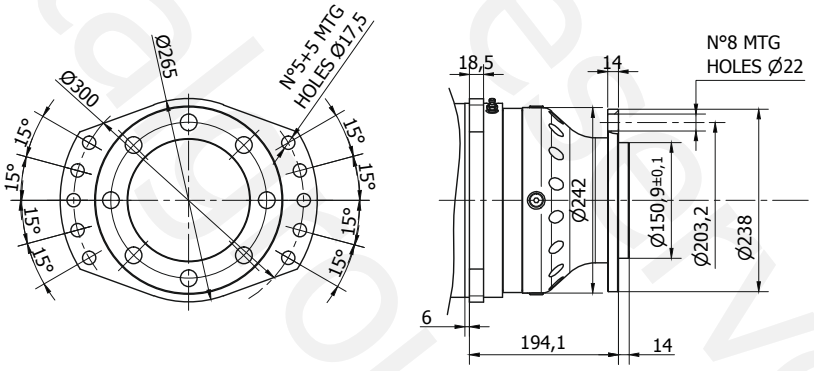
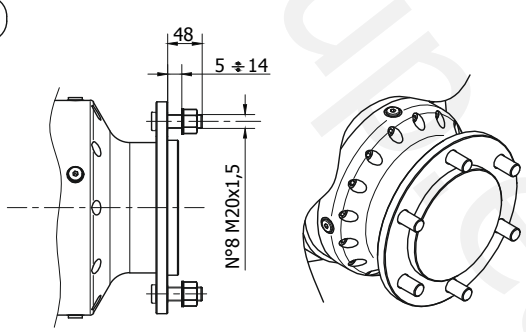
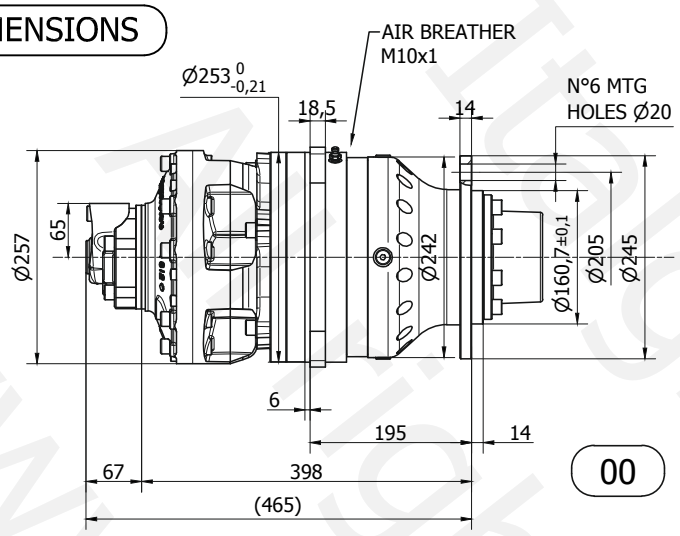
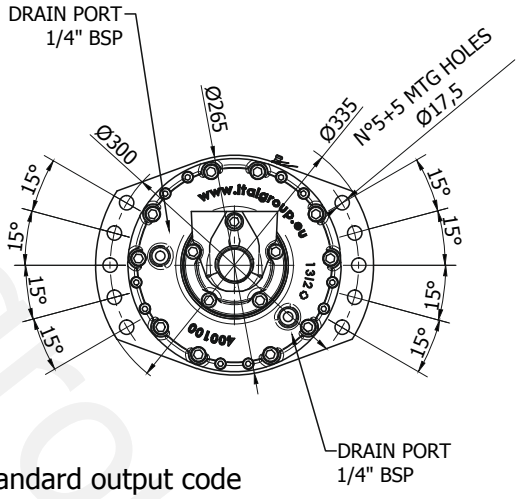


01 CO

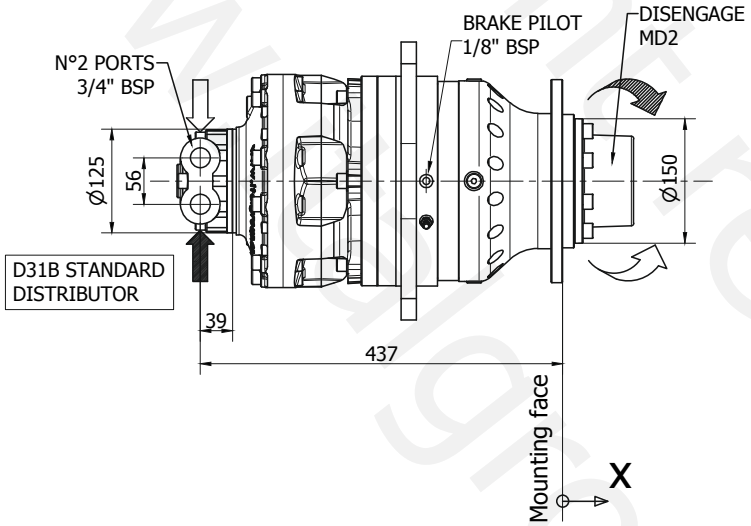


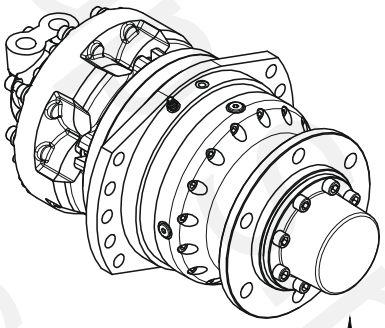
DIMENSIONS





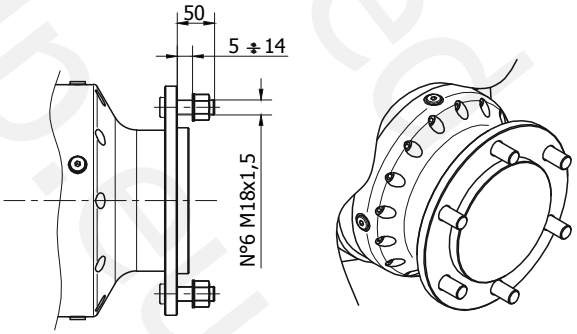
00 Standard output code





MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		900	1000	1150	1250
Motor displ.	[cc]	220	200	220	243
Gear ratio	[]	4,12	5,16	5,16	5,16
Total displ.	[cc]	906	1032	1135	1254
Specific torque	[Nm/bar]	14,4	16,4	18	20
Continuous pressure	[bar]	250	250	250	220
Peak pressure	[bar]	350	300	275	250
Max speed	[rpm]	195	175	155	155
Max cont. torque	[Nm]	3250	3700	4000	4000
Peak torque (*)	[Nm]	4500	4500	4500	4500
Max power	[kW]	45	45	45	45
Negative brake torque	[Nm]	5900	7300	7300	7300
Brake release pressure (min)	[bar]	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	95	95	95	95

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

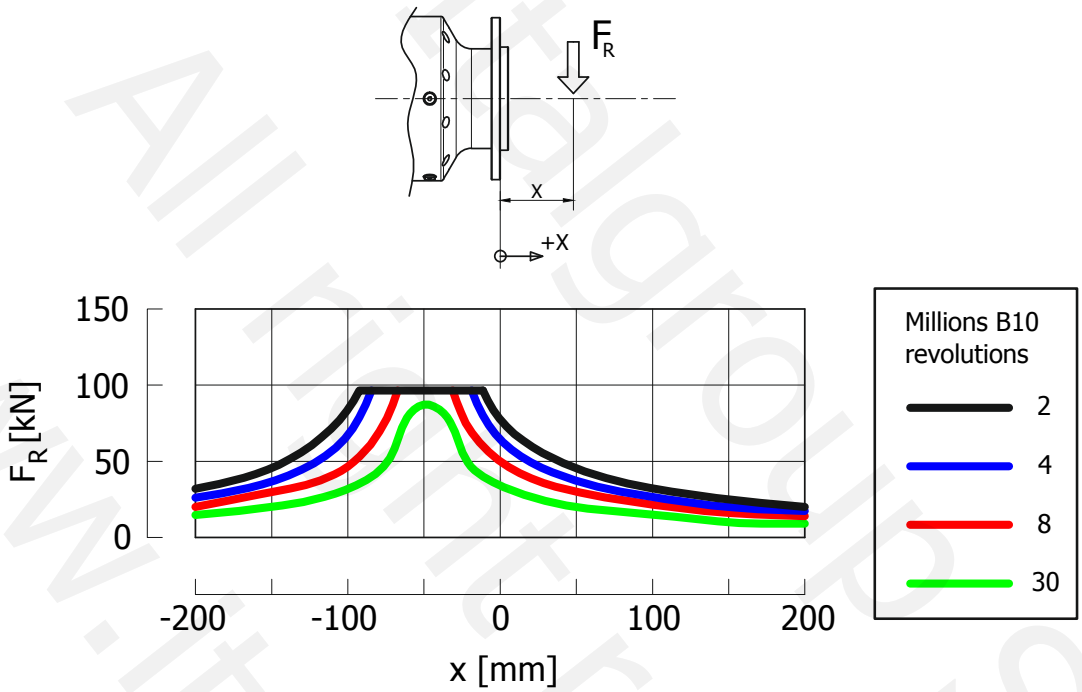
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

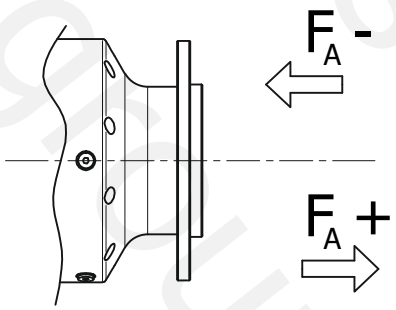
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



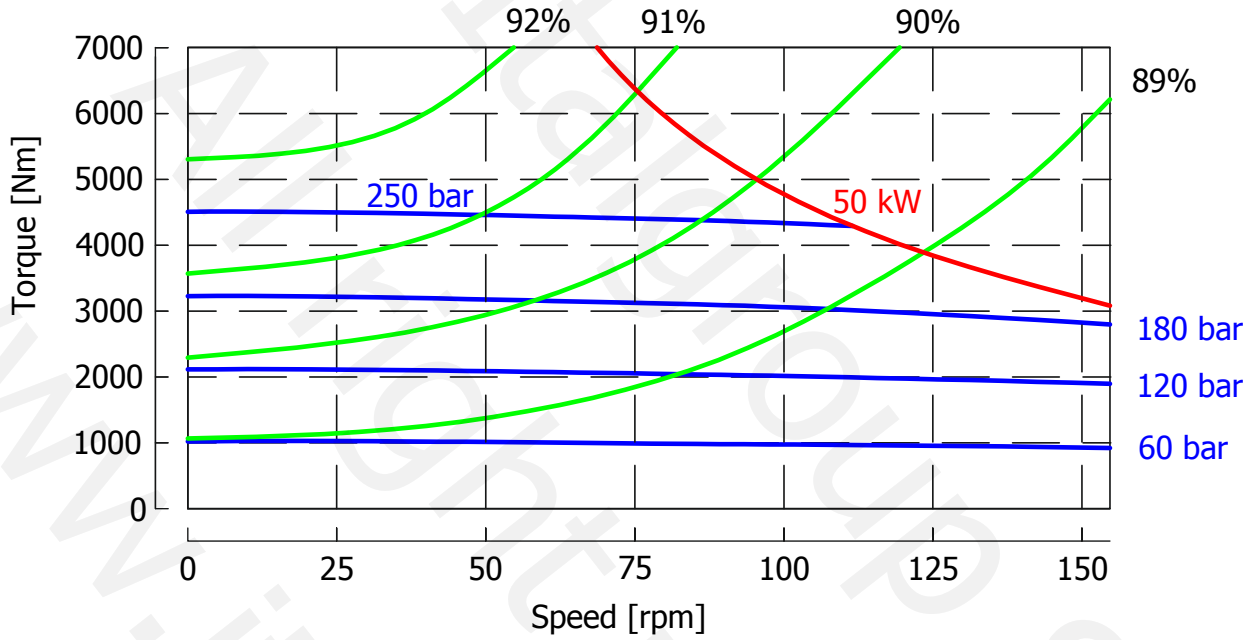
AXIAL LOAD



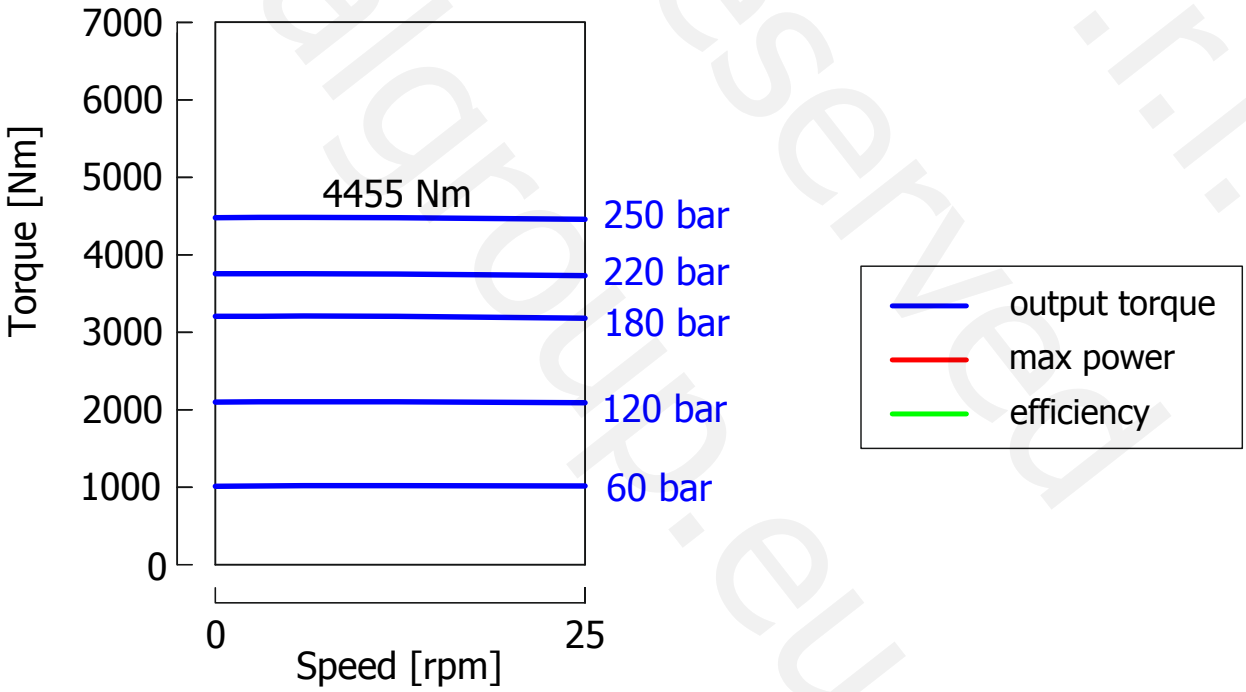
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC1 MD2	45	40	50	40

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W08 HC1 1250 MD2

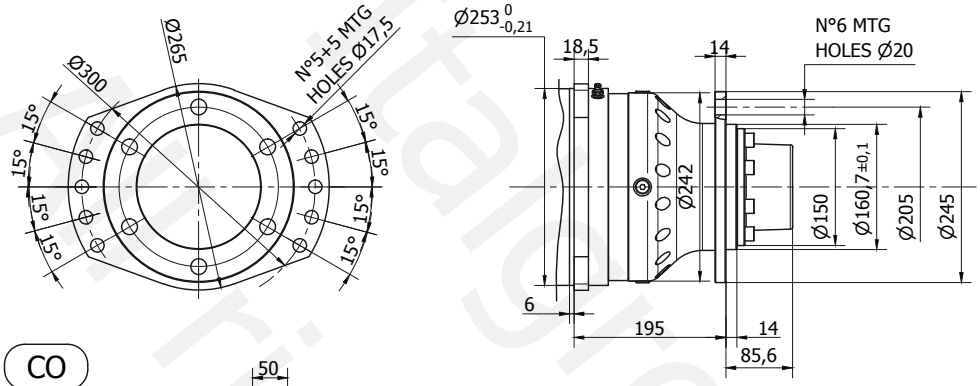


STARTING TORQUE DIAGRAM - W08 HC1 1250 MD2

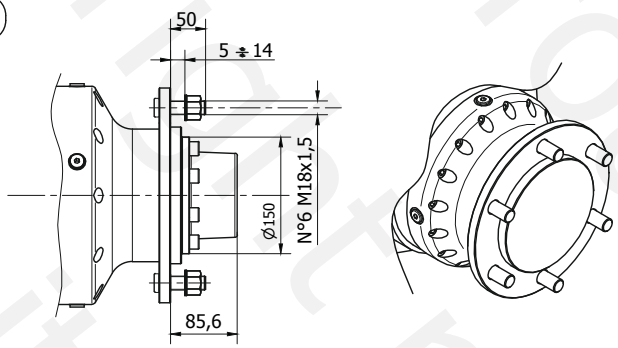


W08 HC1 MD2 - OUTPUT CONFIGURATIONS

00



00 CO



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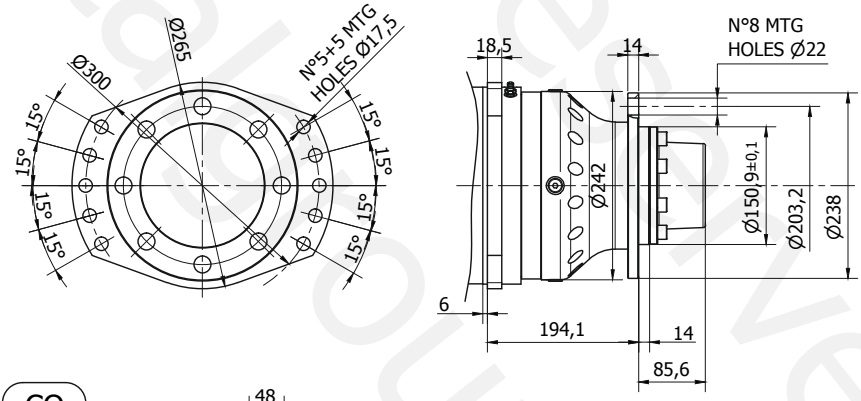
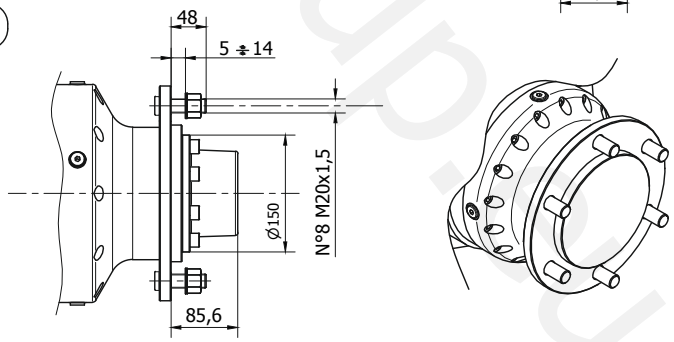
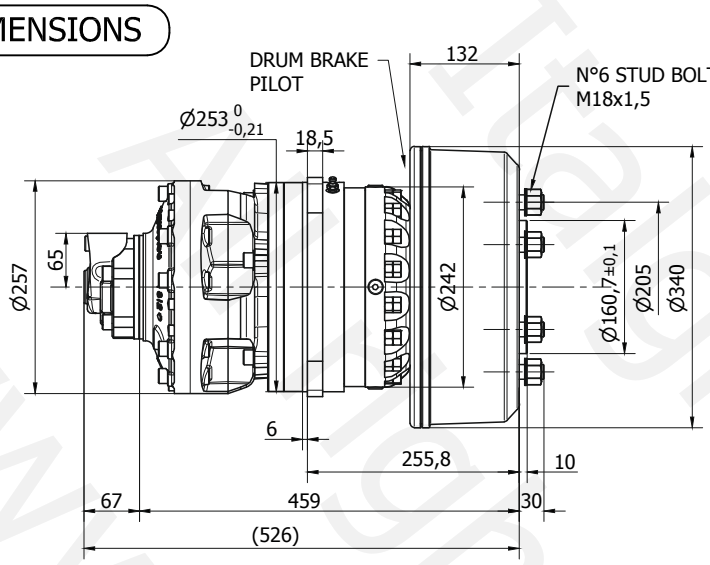
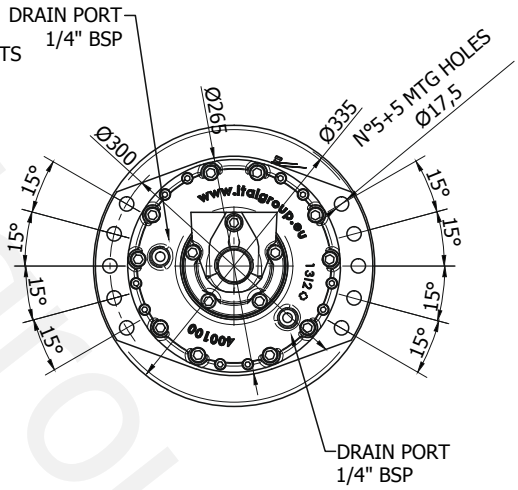


01 CO

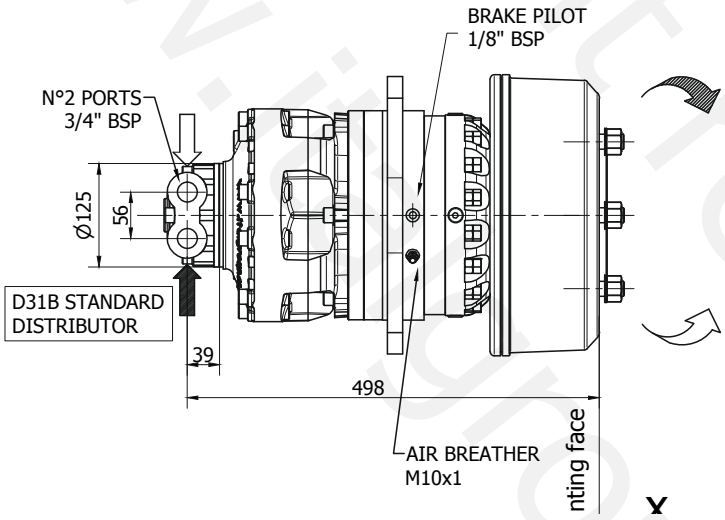


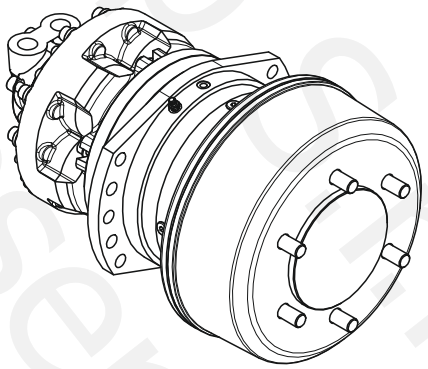
DIMENSIONS





00 Standard output code





Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M18x1,5	430	560

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		900	1000	1150	1250
Motor displ.	[cc]	220	200	220	243
Gear ratio	[]	4,12	5,16	5,16	5,16
Total displ.	[cc]	906	1032	1135	1254
Specific torque	[Nm/bar]	14,4	16,4	18	20
Continuous pressure	[bar]	250	250	250	250
Peak pressure	[bar]	350	350	350	350
Max speed	[rpm]	195	175	155	155
Max cont. torque	[Nm]	3250	3700	4080	4500
Peak torque (*)	[Nm]	4550	5200	5700	6300
Max power	[kW]	45	45	45	45
Negative brake torque	[Nm]	5900	7300	7300	7300
Brake release pressure (min)	[bar]	13	13	13	13
Drum brake torque	[Nm]	6000	6000	6000	6000
Drum brake max pressure	[bar]	110	110	110	110
Drum brake pilot	[]	3/8" UNF	3/8" UNF	3/8" UNF	3/8" UNF
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	110	110	110	110

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

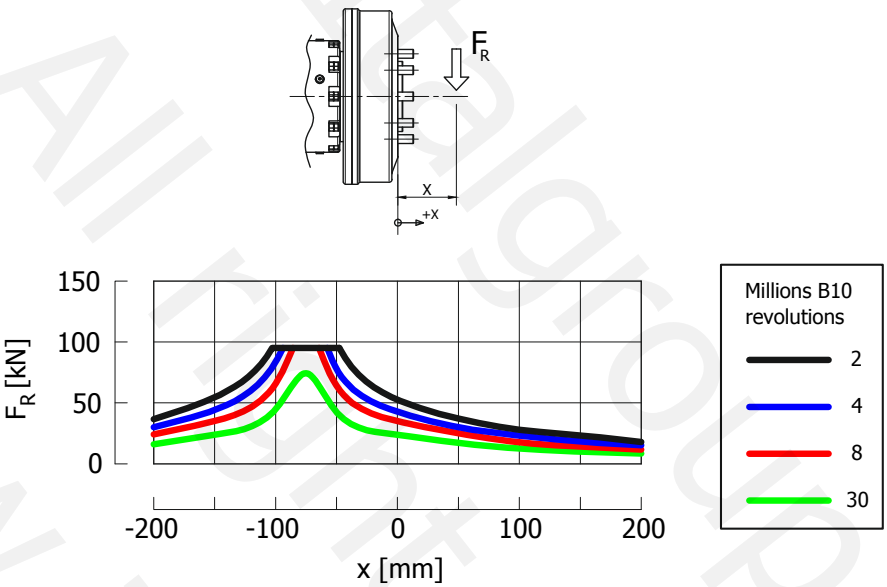
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

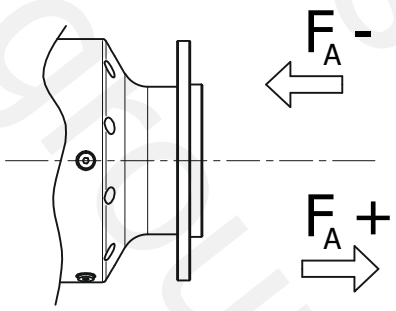
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



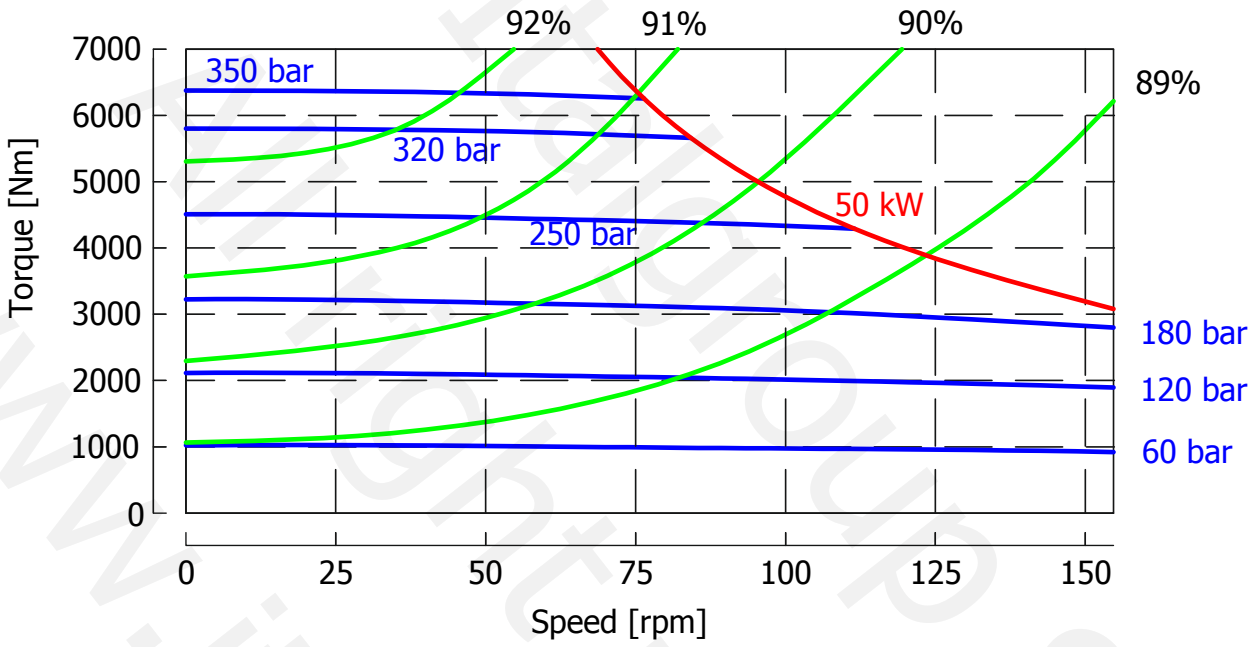
AXIAL LOAD



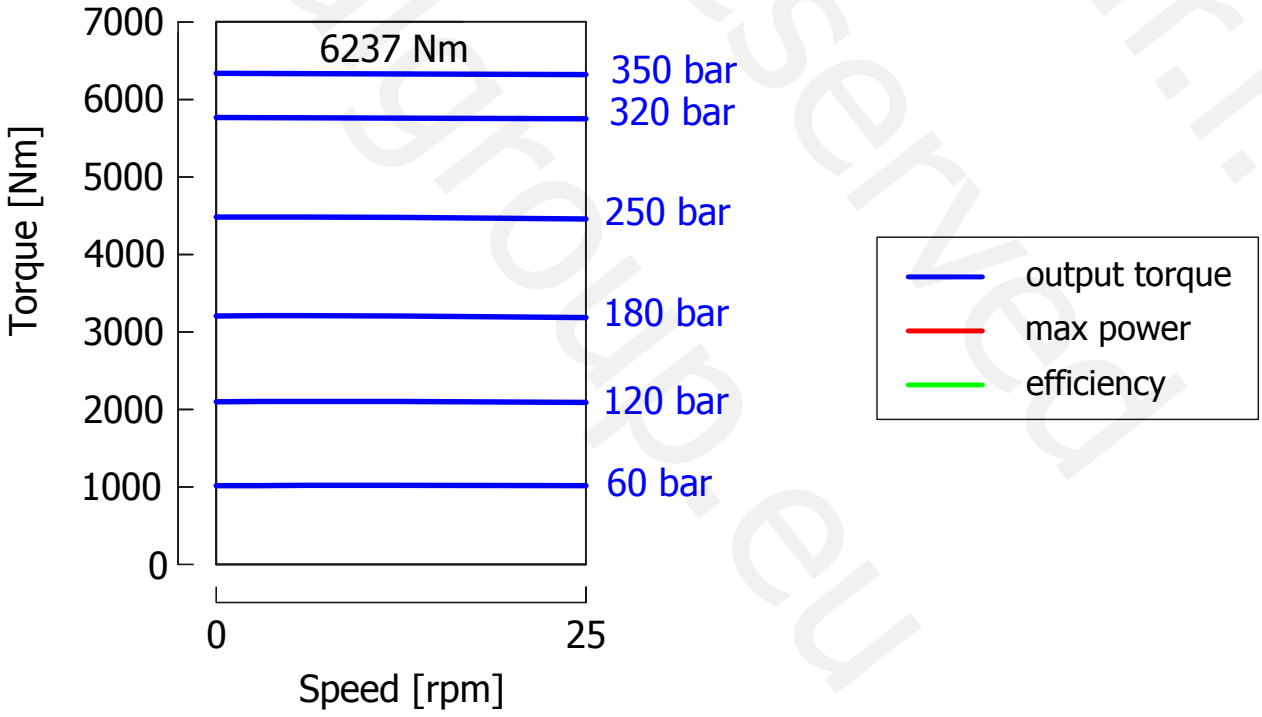
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W08 HC1 DB	45	40	32	32

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W08 HC1 1250 DB

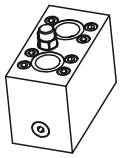


STARTING TORQUE DIAGRAM - W08 HC1 1250 DB



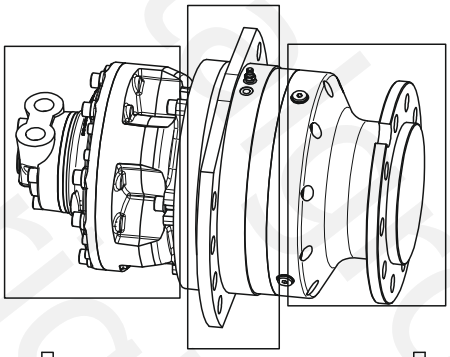
W11 WHEEL MOTOR MAIN FEATURES

W11

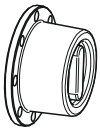


Valve block
See pag. 142-145

Tachometer
See pag. 138-140

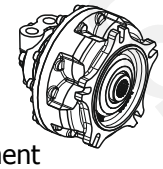


Wheel stud
See pag. 147



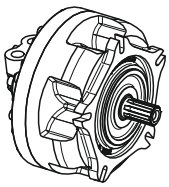
Mechanical disengage
See pag. 146

HYDRAULIC MOTOR



HC1

Single displacement motor, freewheeling mode: 173-250 cc



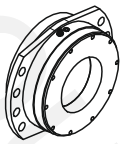
HC2

Single displacement motor, freewheeling mode: 306-348 cc

GEAR & BRAKE UNIT

Available ratio

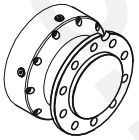
3,66 | 4,42 | 5,00 | 5,80 | 7,00



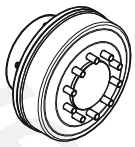
WB
Without brake

NB
With negative brake

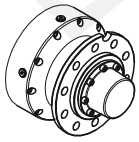
OUTPUT CONFIGURATION



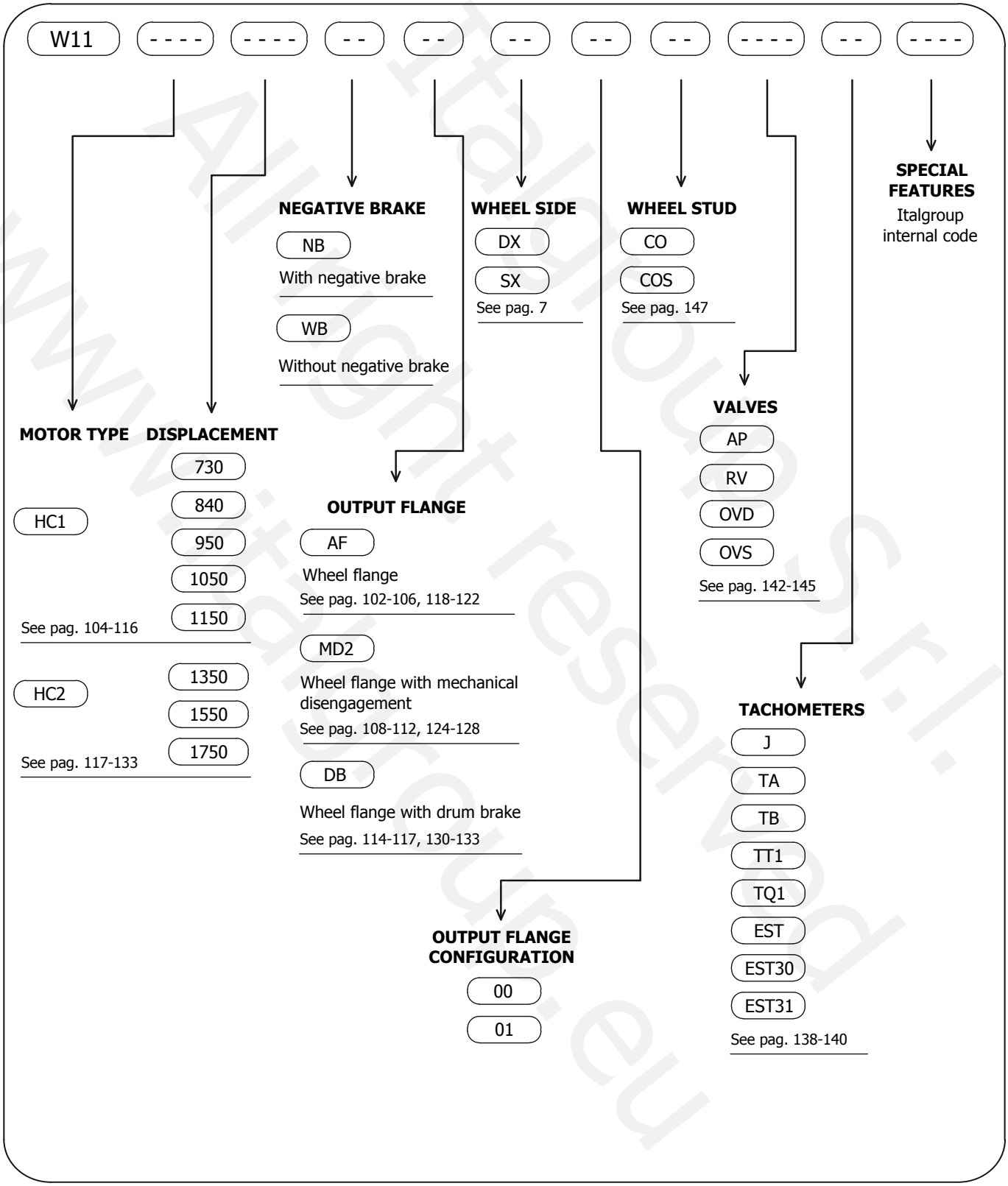
AF
Wheel flange



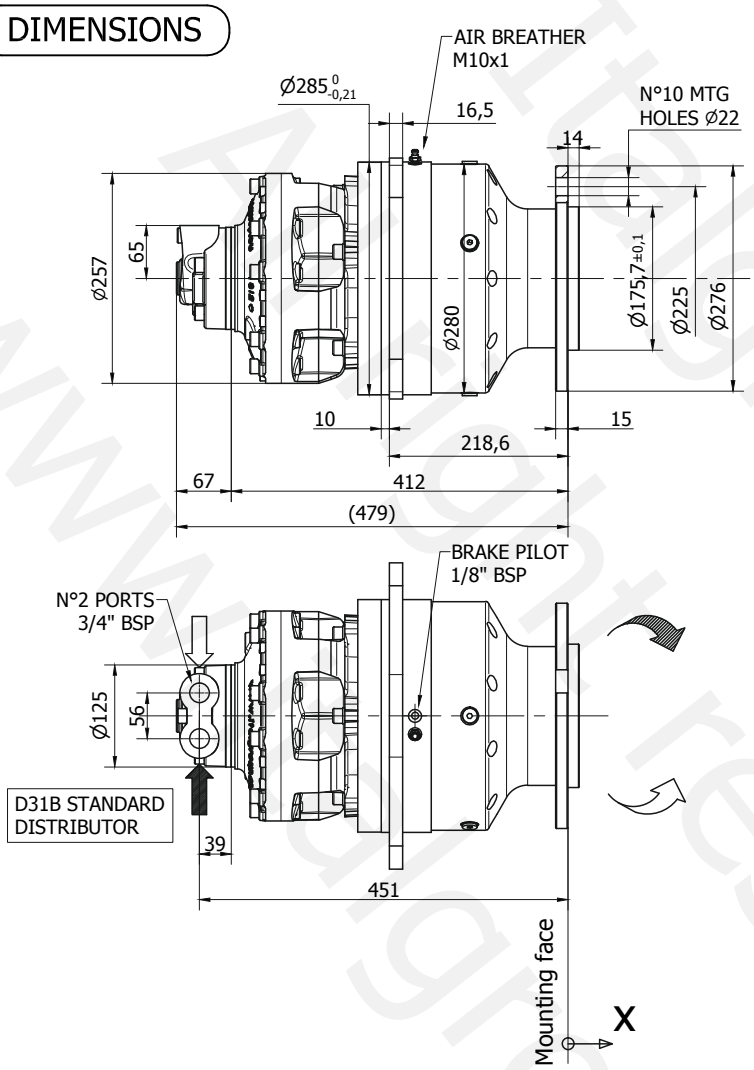
DB
Wheel flange with drum brake

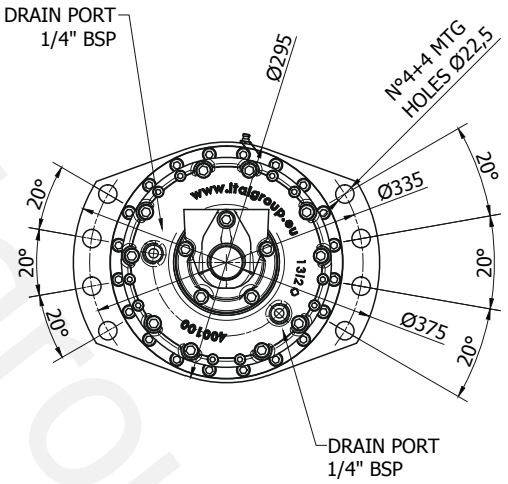


MD2
Wheel flange with mechanichal disengage

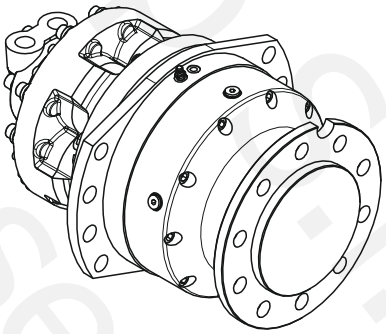


DIMENSIONS

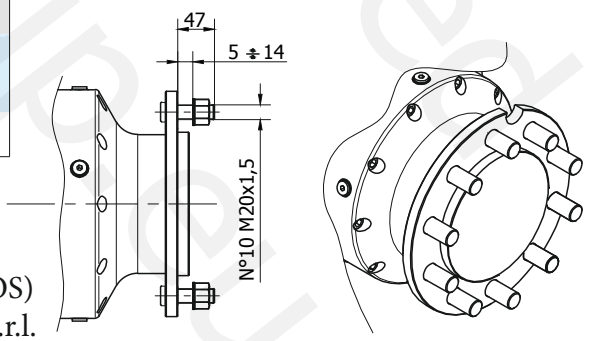




00 Standard output code



OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		730	840	950	1050	1150
Motor displ.	[cc]	173	173	200	250	250
Gear ratio	[]	4,42	5	5	4,42	5
Total displ.	[cc]	765	865	1000	1105	1250
Specific torque	[Nm/bar]	12,2	13,8	15,9	17,6	19,9
Continuous pressure	[bar]	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350
Max speed	[rpm]	205	200	195	190	180
Max cont. torque	[Nm]	2750	3100	3600	4000	4500
Peak torque (*)	[Nm]	3850	4350	5000	5500	6300
Max power	[kW]	45	45	45	50	50
Braking torque (optional)	[Nm]	5300	6000	6000	6500	7500
Brake release pressure (min)	[bar]	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	105	105	105	105	105

- - Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

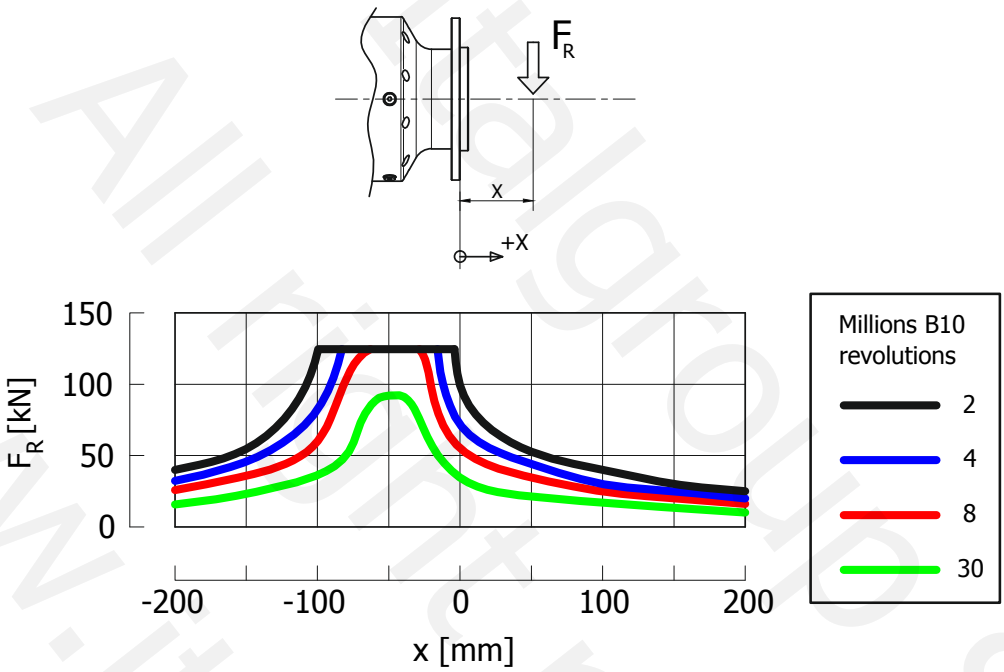
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

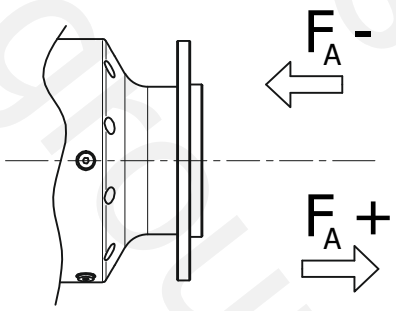
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



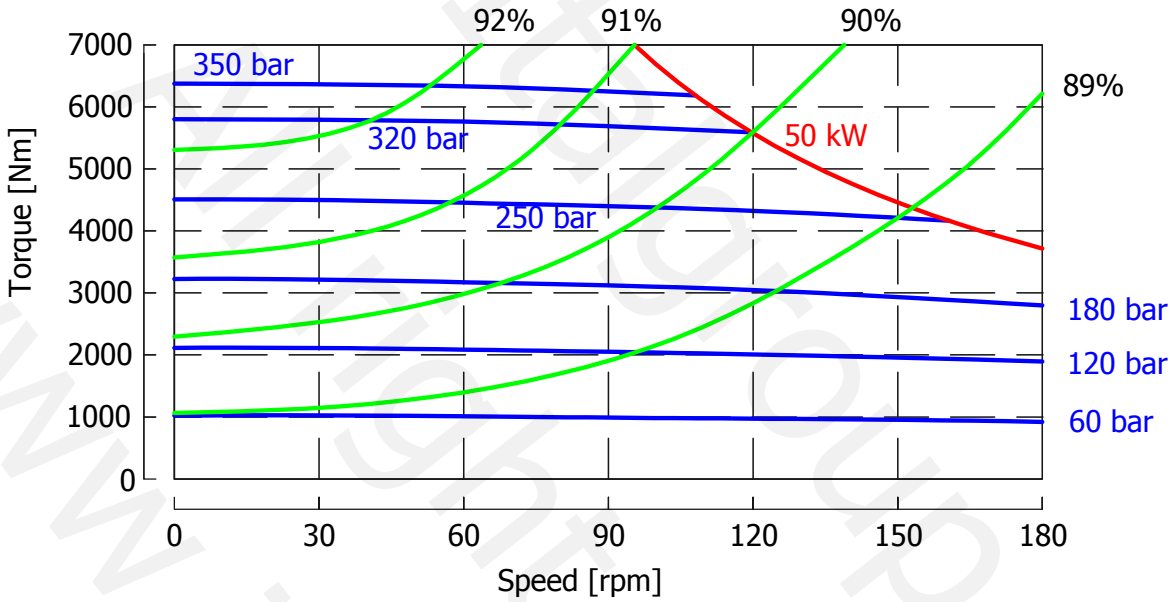
AXIAL LOAD



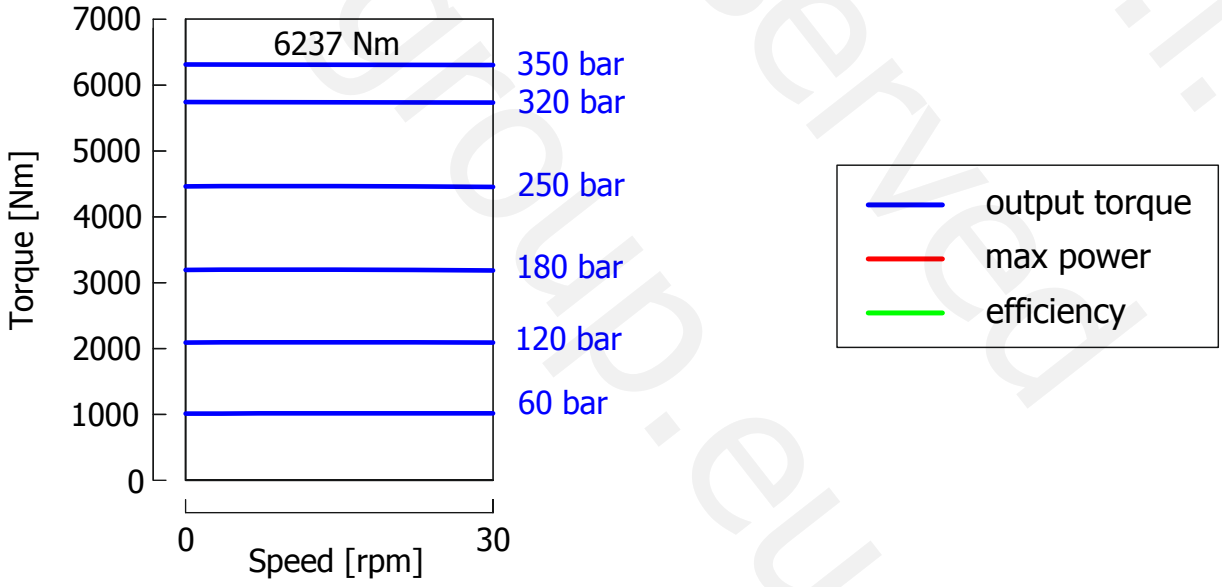
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	58	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W11 HC1 1150 AF



STARTING TORQUE DIAGRAM - W11 HC1 1150 AF



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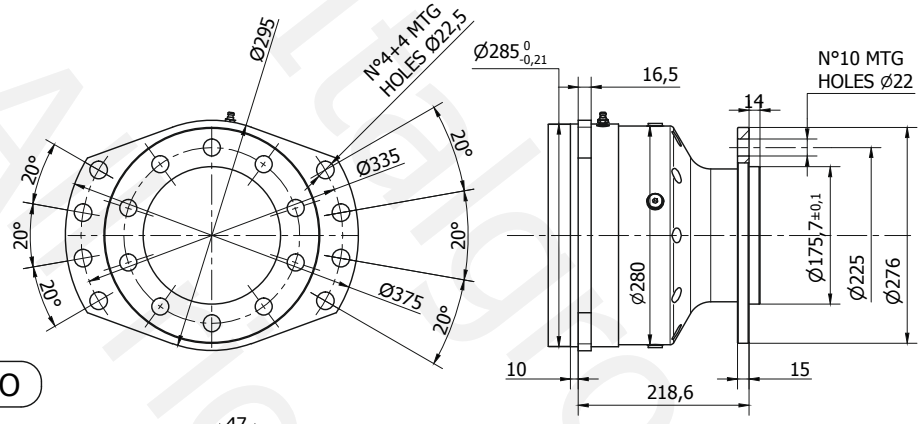
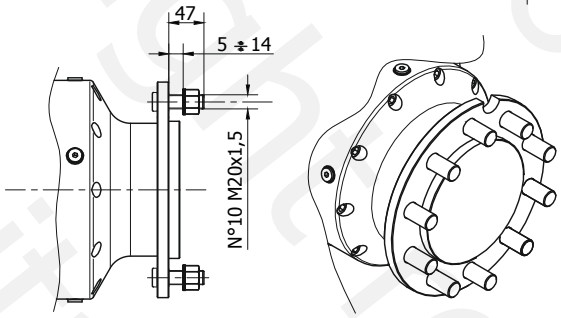


00 CO



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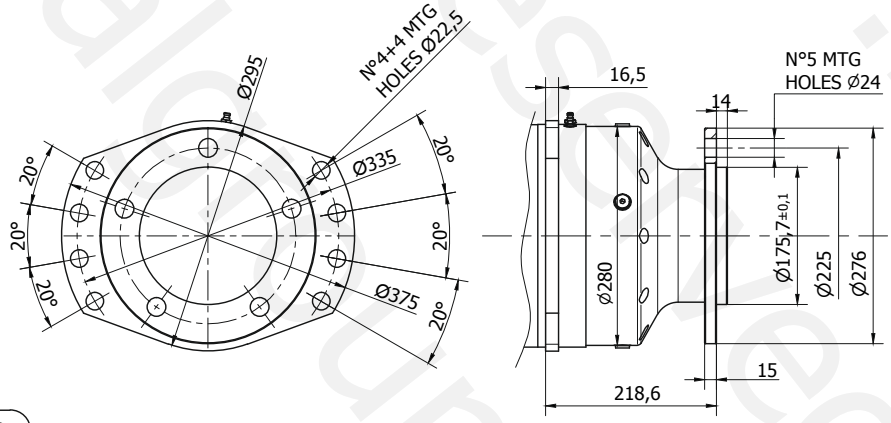
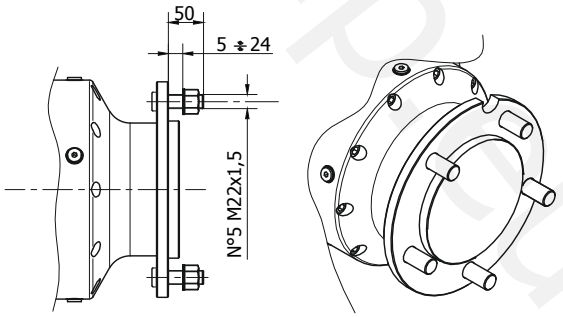
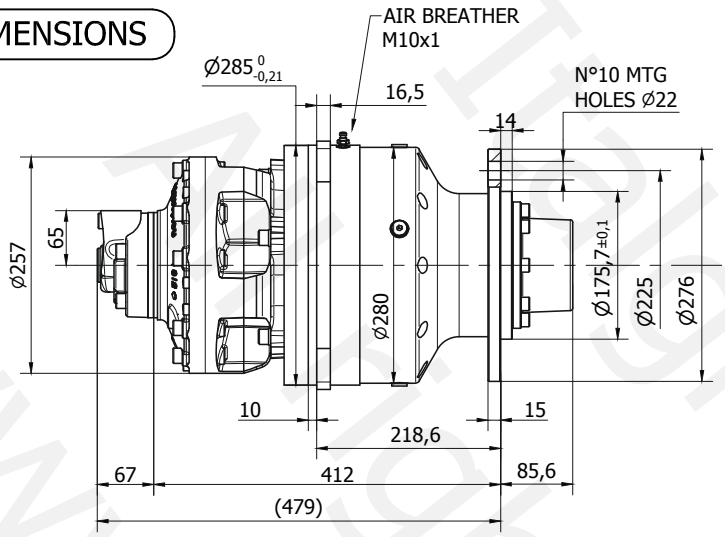
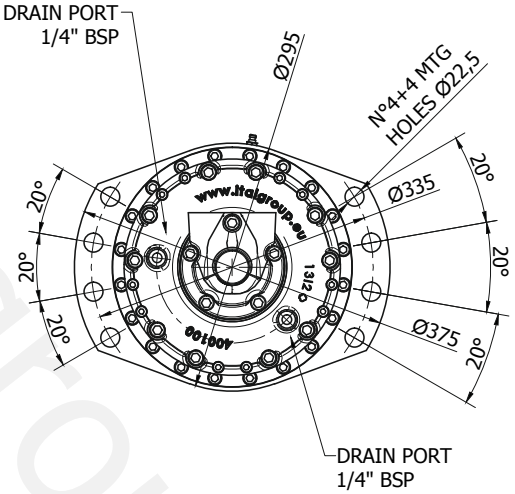


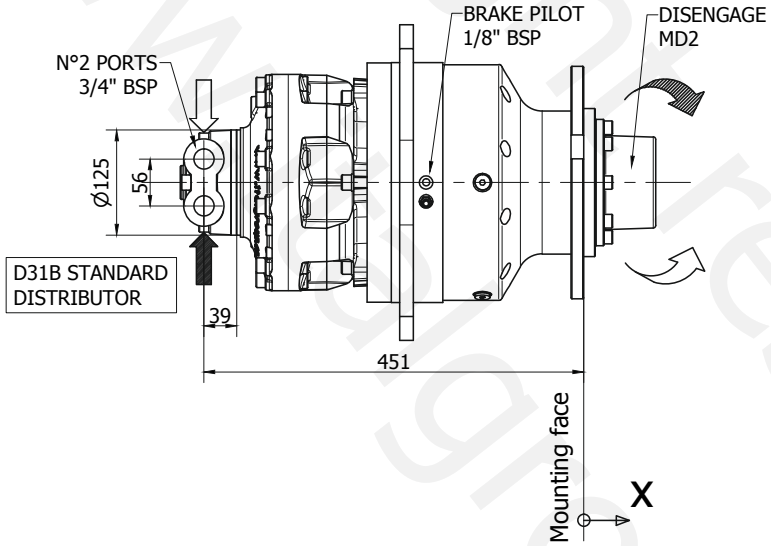
01 CO



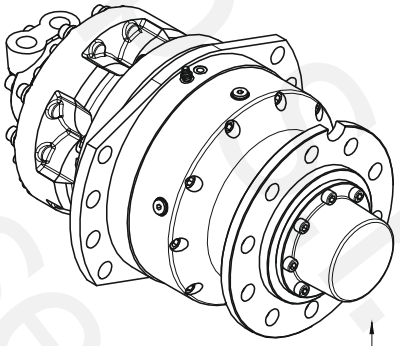
DIMENSIONS







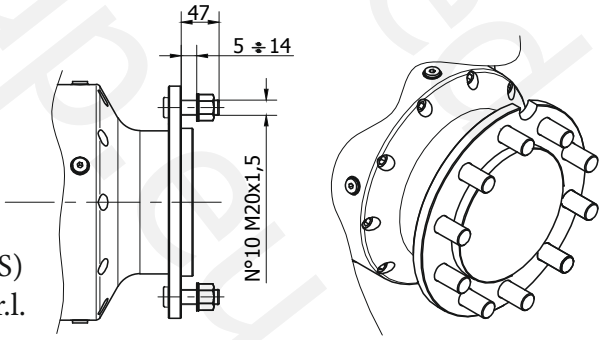
00 Standard output code



MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780



(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		730	840	950	1050	1150
Motor displ.	[cc]	173	173	200	250	250
Gear ratio	[]	4,42	5	5	4,42	5
Total displ.	[cc]	765	865	1000	1105	1250
Specific torque	[Nm/bar]	12,2	13,8	15,9	17,6	19,9
Continuous pressure	[bar]	250	250	250	250	220
Peak pressure	[bar]	350	350	315	285	250
Max speed	[rpm]	205	200	195	190	180
Max cont. torque	[Nm]	2750	3100	3600	4000	4000
Peak torque (*)	[Nm]	3850	4350	4500	4500	4500
Max power	[kW]	45	45	45	50	50
Braking torque (optional)	[Nm]	5300	6000	6000	6500	7500
Brake release pressure (min)	[bar]	13	13	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	110	110	110	110	110

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

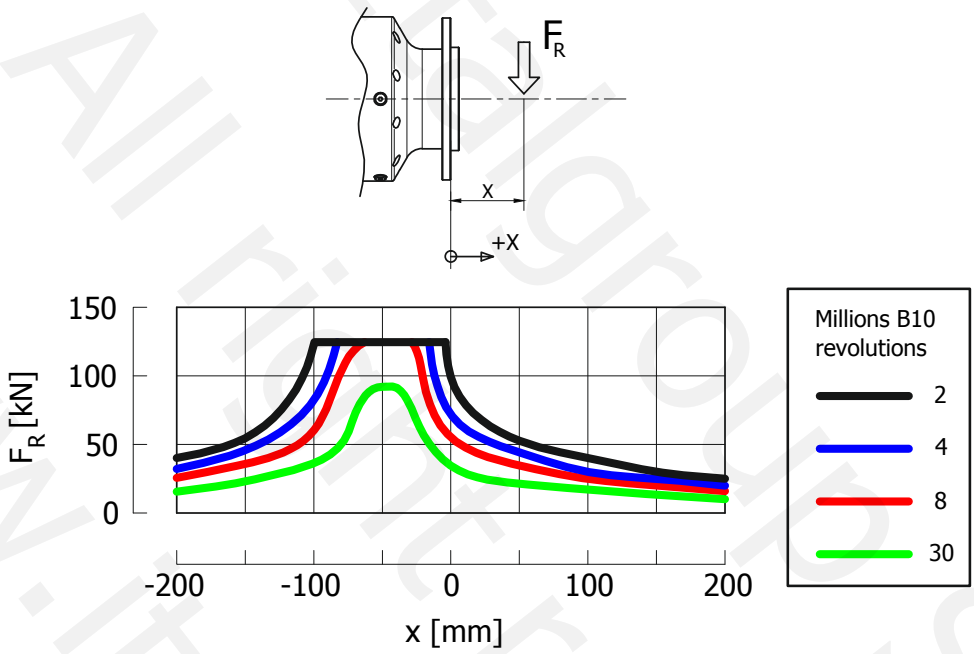
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

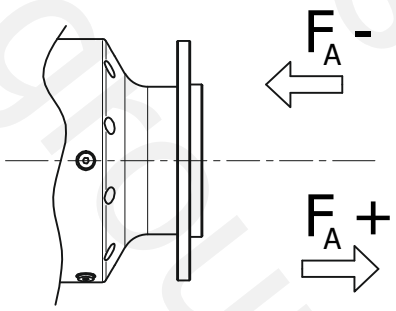
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



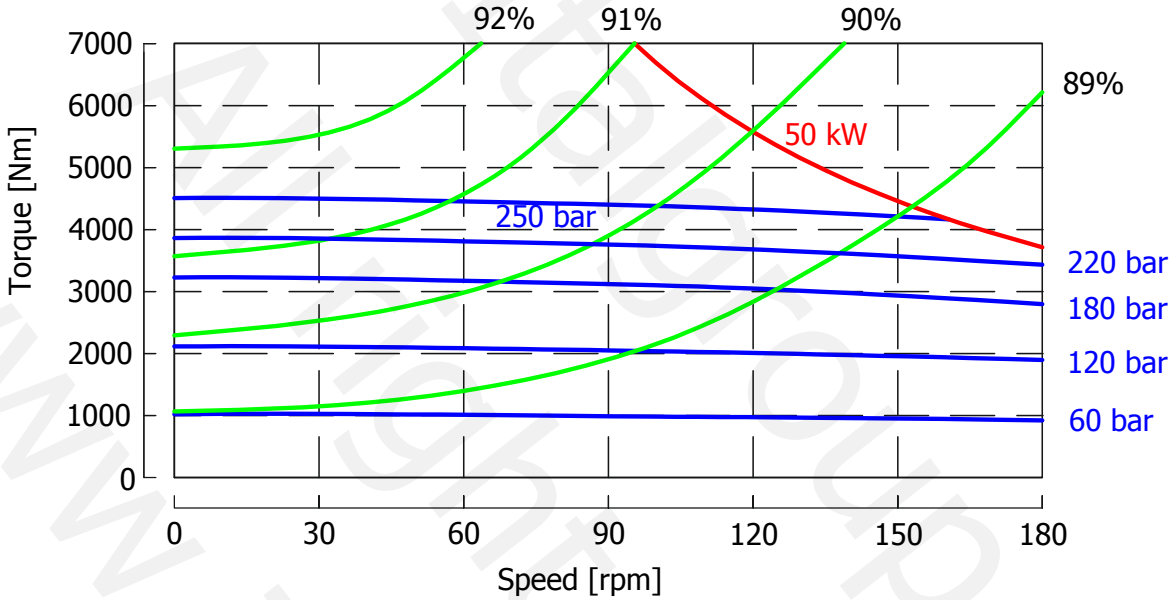
AXIAL LOAD



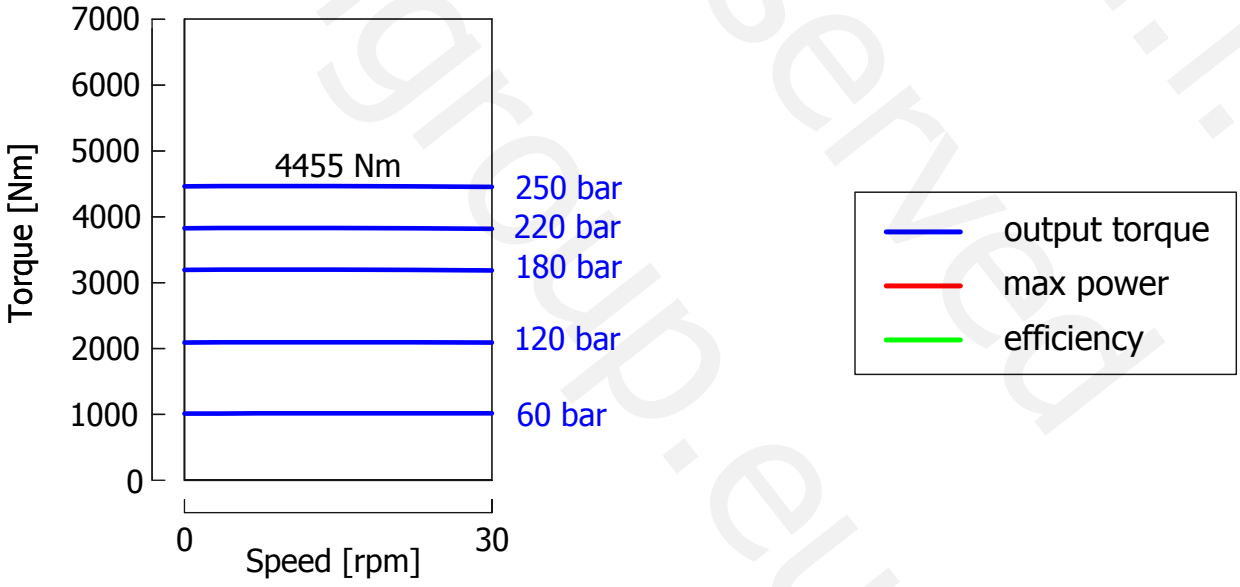
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	58	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W11 HC1 1150 MD2



STARTING TORQUE DIAGRAM - W11 HC1 1150 MD2



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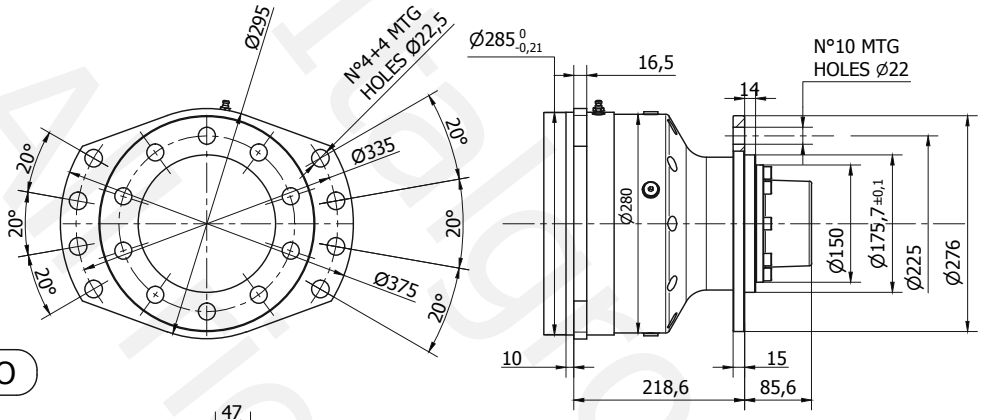
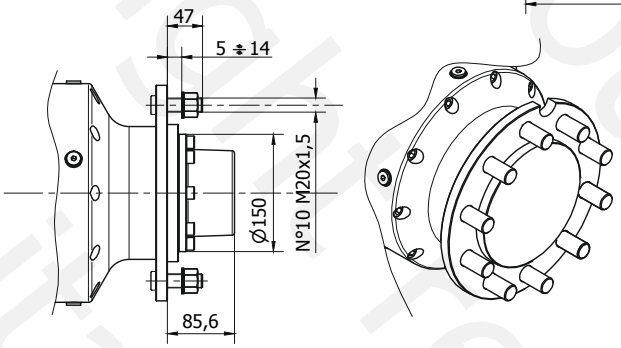


00 CO



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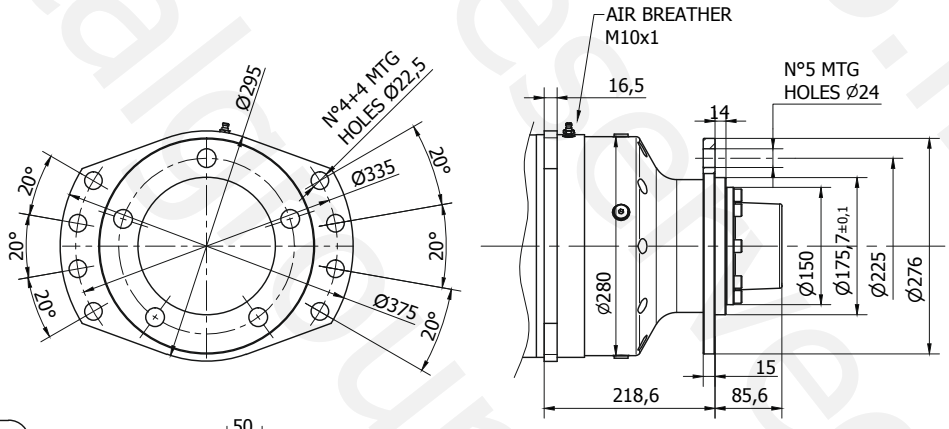
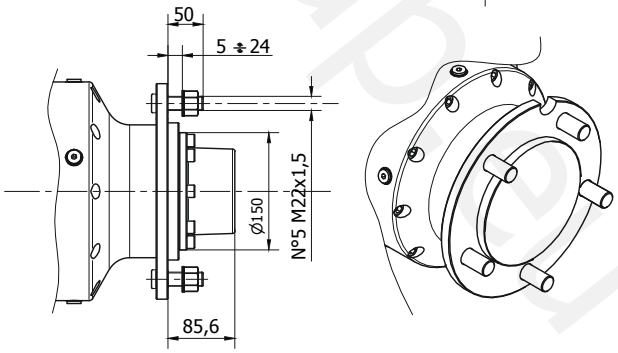
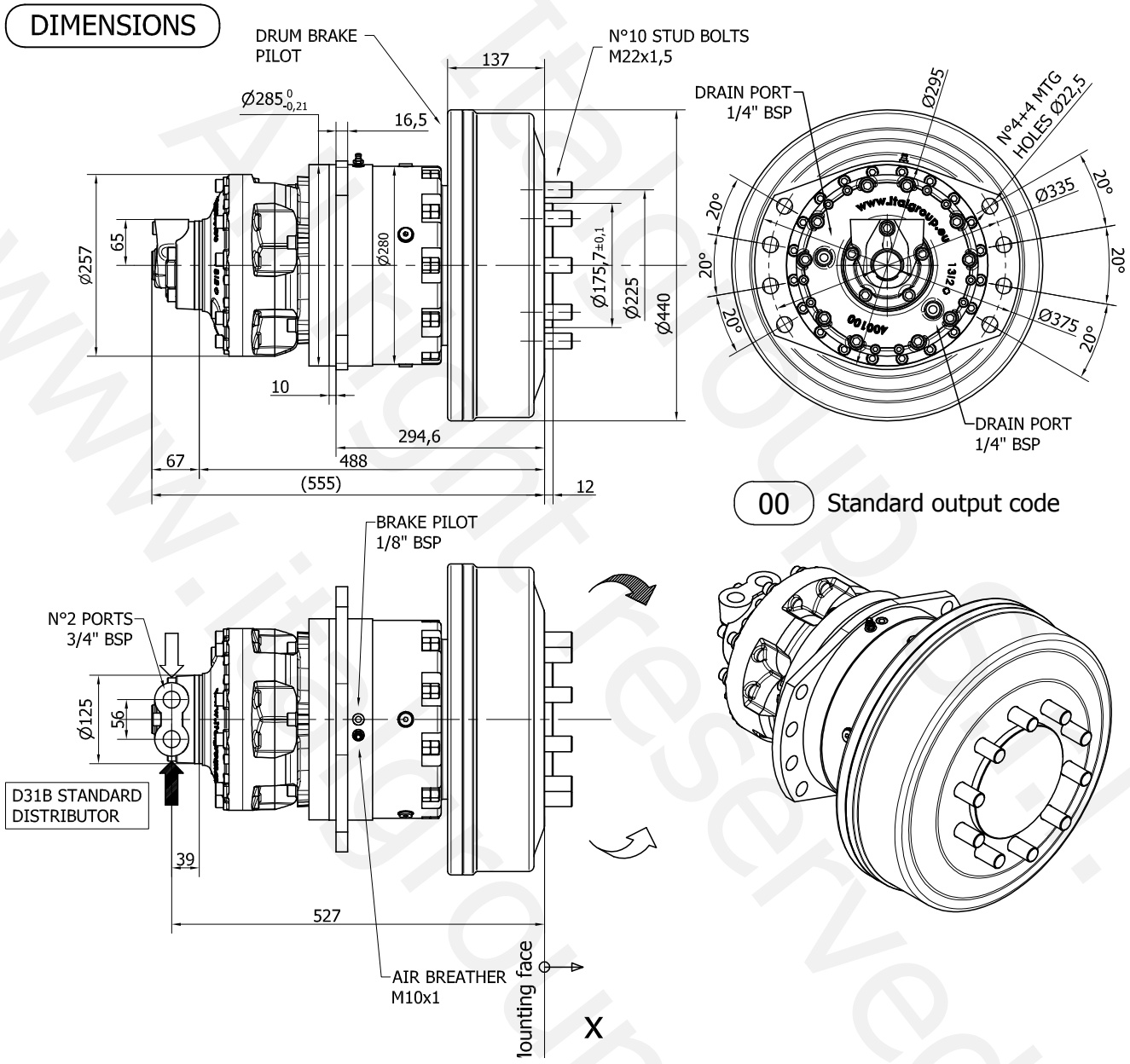


01 CO



DIMENSIONS



00 Standard output code

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		730	840	950	1050	1150
Motor displ.	[cc]	173	173	200	250	250
Gear ratio	[]	4,42	5	5	4,42	5
Total displ.	[cc]	765	865	1000	1105	1250
Specific torque	[Nm/bar]	12,2	13,8	15,9	17,6	19,9
Continuous pressure	[bar]	250	250	250	250	250
Peak pressure	[bar]	350	350	350	350	350
Max speed	[rpm]	205	200	195	190	180
Max cont. torque	[Nm]	2750	3100	3600	4000	4500
Peak torque (*)	[Nm]	3850	4350	5000	5500	6300
Max power	[kW]	45	45	45	50	50
Braking torque (optional)	[Nm]	5300	6000	6000	6500	7500
Brake release pressure (min)	[bar]	13	13	13	13	13
Drum brake torque	[Nm]	16000	16000	16000	16000	16000
Drum brake max pressure	[bar]	115	115	115	115	115
Drum brake pilot	[]	M14x1,5	M14x1,5	M14x1,5	M14x1,5	M14x1,5
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	120	120	120	120	120

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

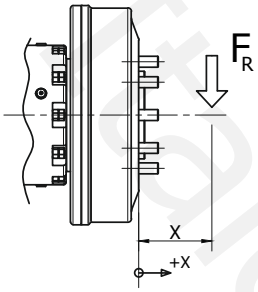
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

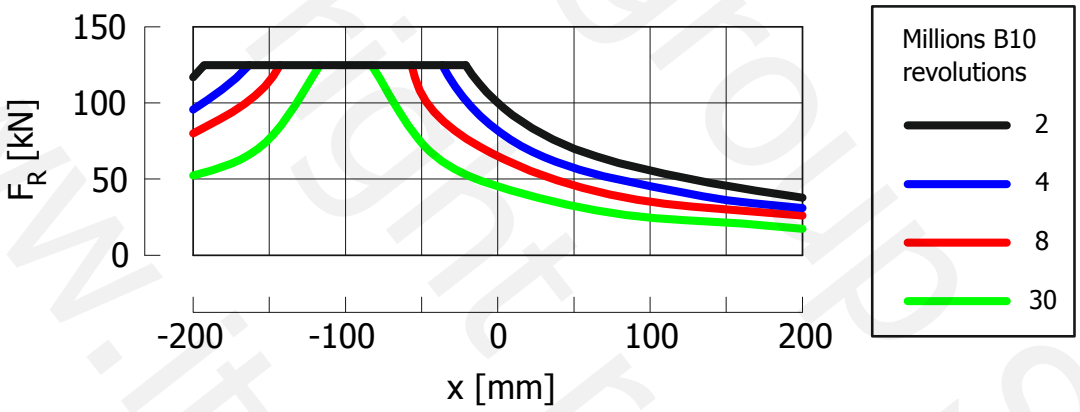
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

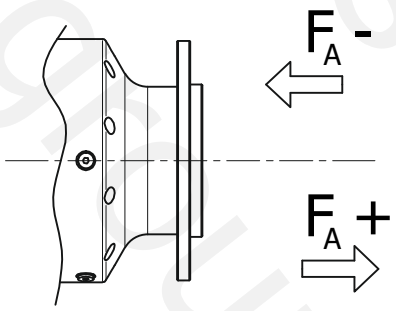
For more information please contact Italgroup technical department.

RADIAL LOAD





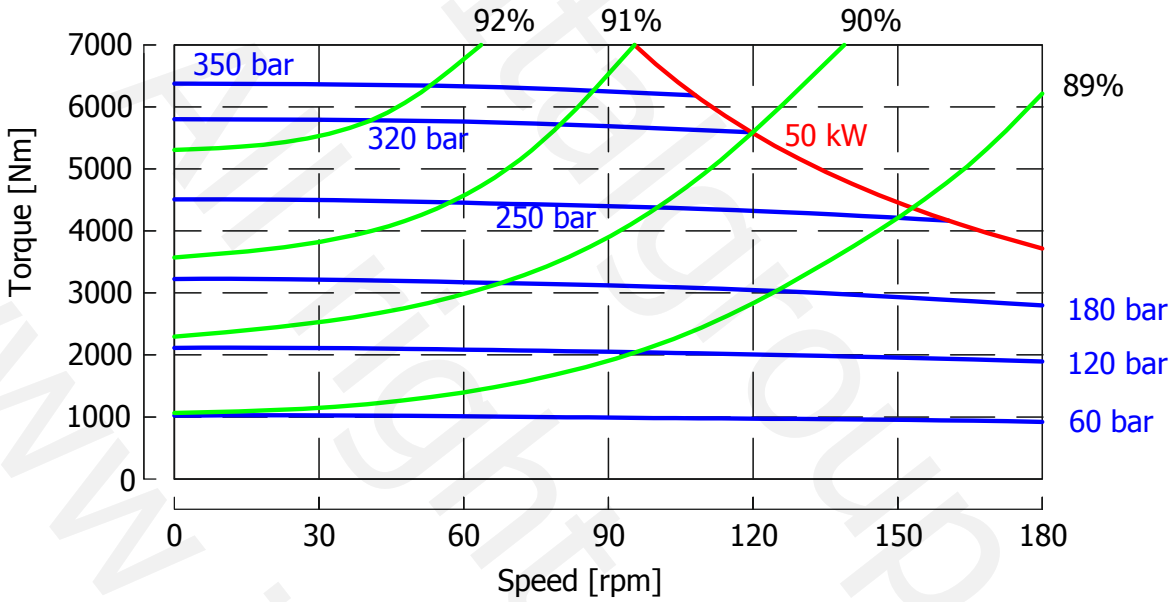
AXIAL LOAD



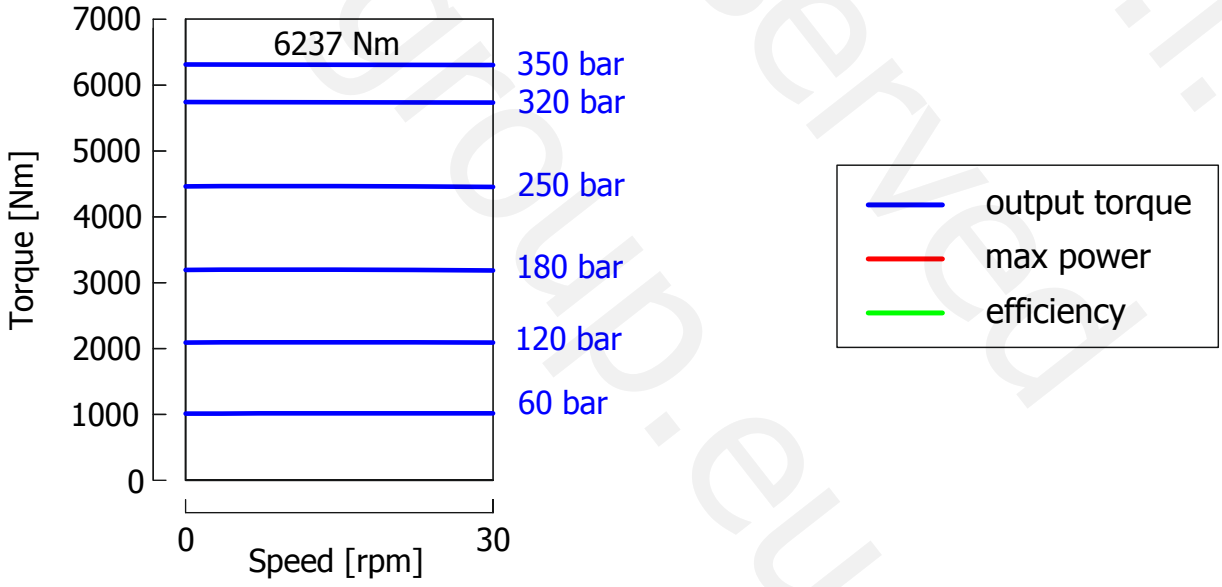
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	50	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

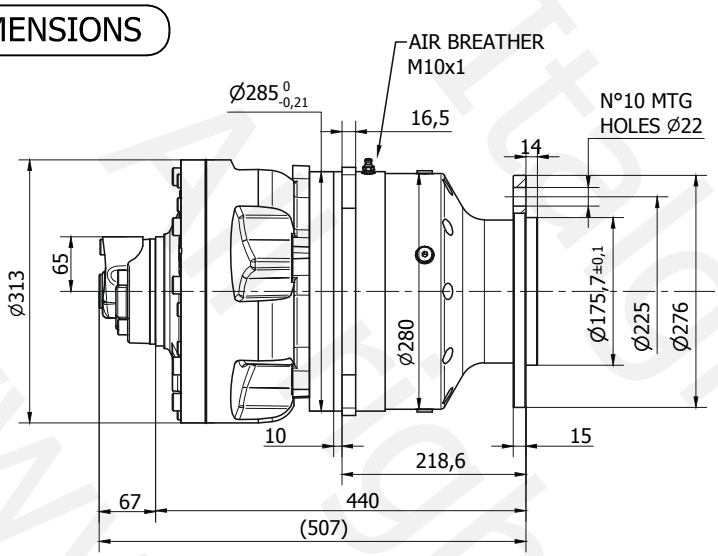
OPERATING DIAGRAM - W11 HC2 1150 DB

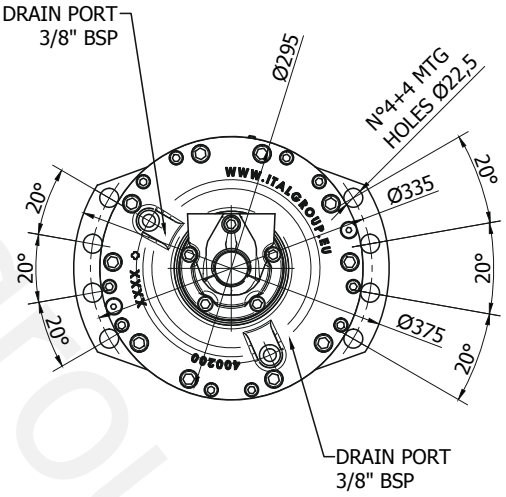


STARTING TORQUE DIAGRAM - W11 HC2 1150 DB

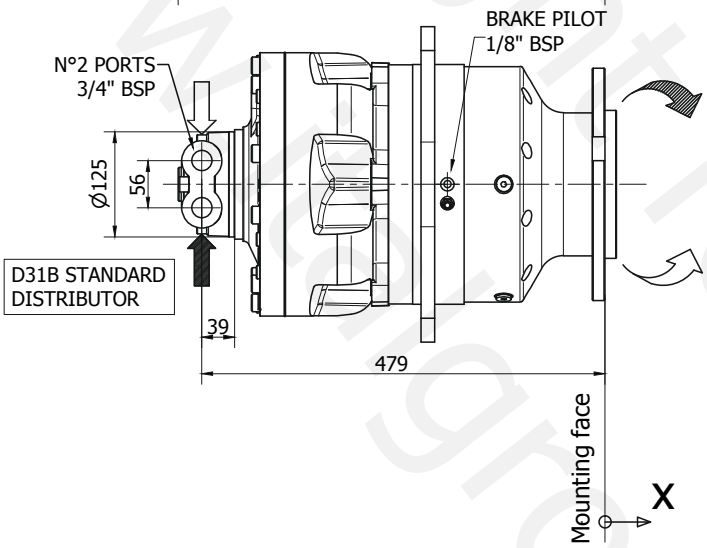


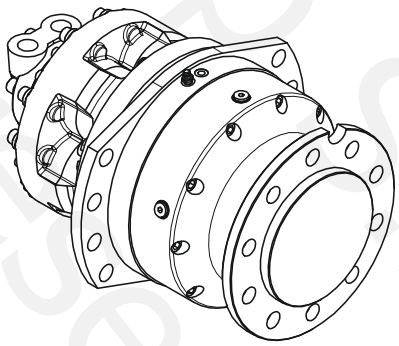
DIMENSIONS





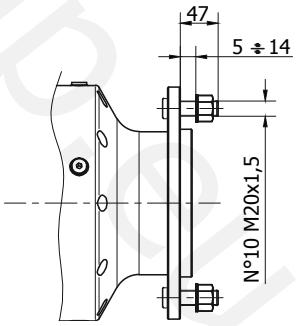
00 Standard output code

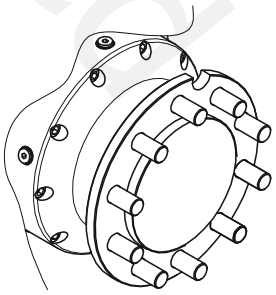




OPTIONAL: STUD BOLTS

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780





(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		1350	1550	1750
Motor displ.	[cc]	306	348	348
Gear ratio	[]	4,42	4,42	5
Total displ.	[cc]	1352	1538	1740
Specific torque	[Nm/bar]	21.5	24,5	27,7
Continuous pressure	[bar]	250	250	250
Peak pressure	[bar]	350	350	350
Max speed	[rpm]	190	185	170
Max cont. torque	[Nm]	4850	5520	6250
Peak torque (*)	[Nm]	6800	7730	8740
Max power	[kW]	75	75	75
Braking torque (optional)	[Nm]	7900	7900	8900
Brake release pressure (min)	[bar]	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	123	123	123

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

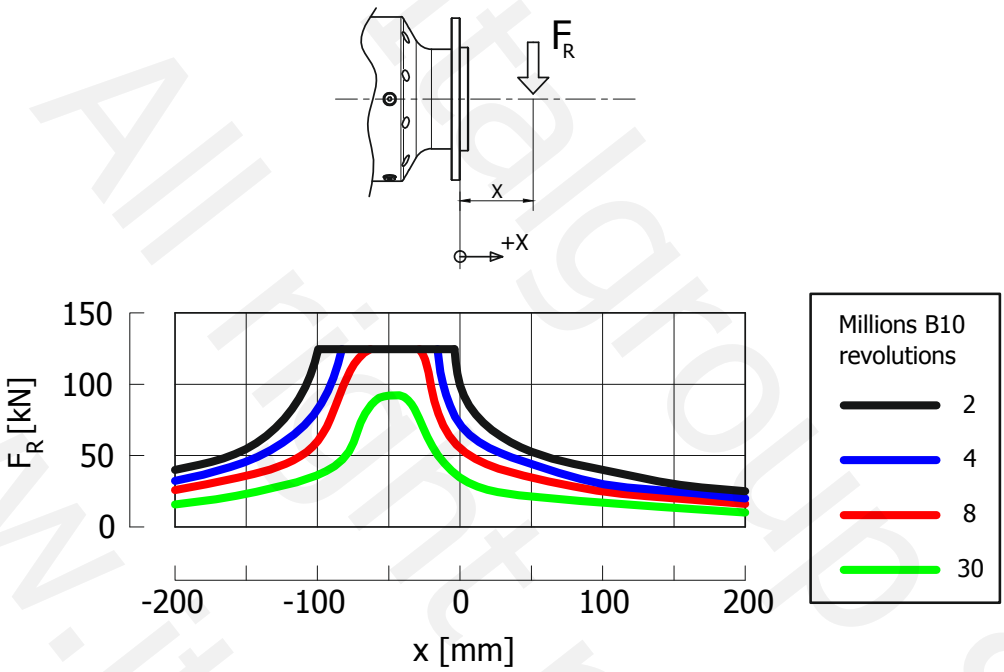
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

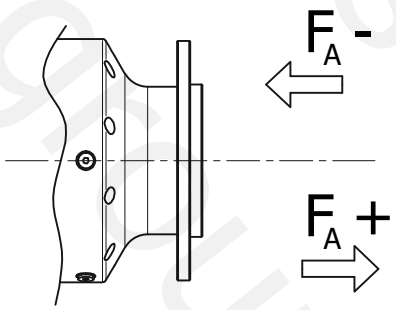
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



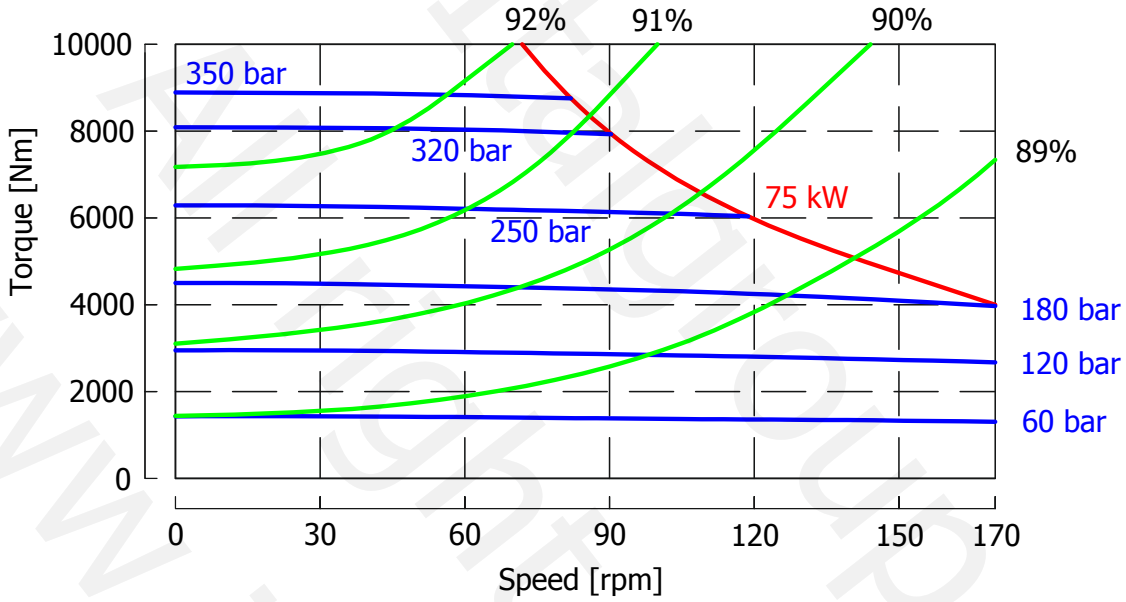
AXIAL LOAD



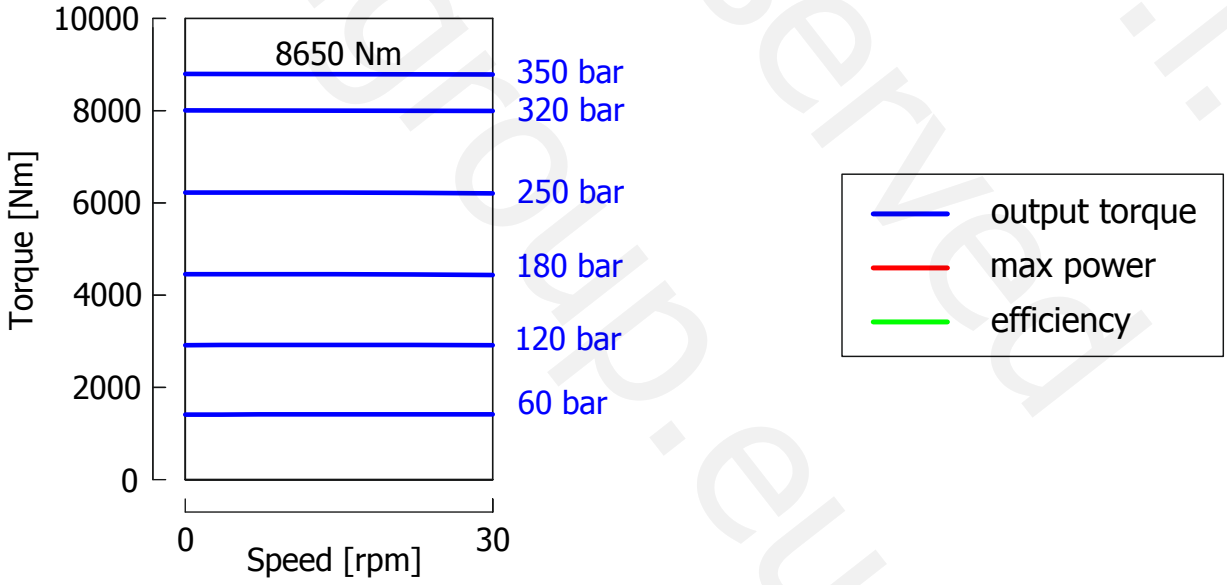
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	58	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W11 HC2 1750 AF



STARTING TORQUE DIAGRAM - W11 HC2 1750 AF



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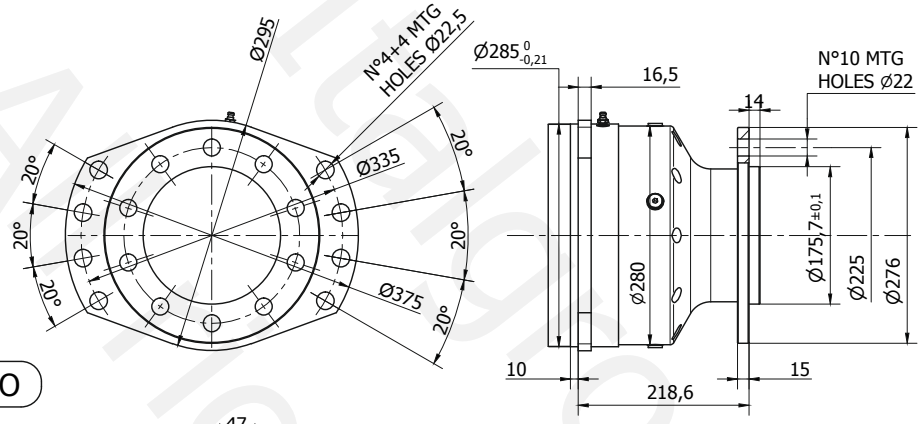
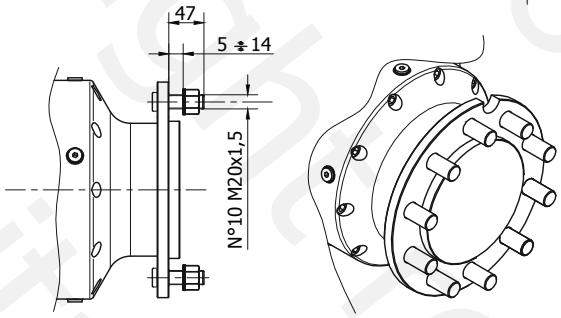


00 CO



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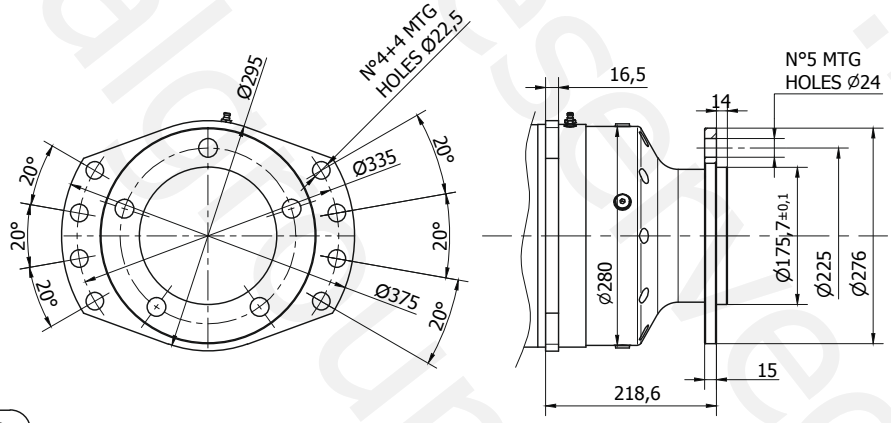
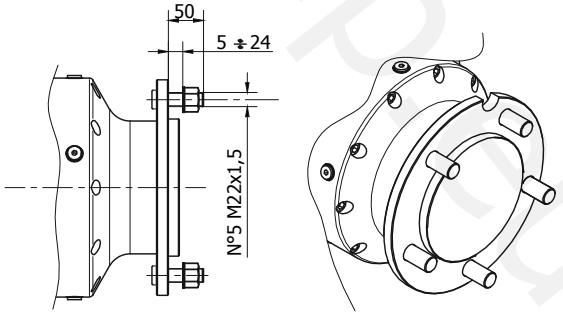
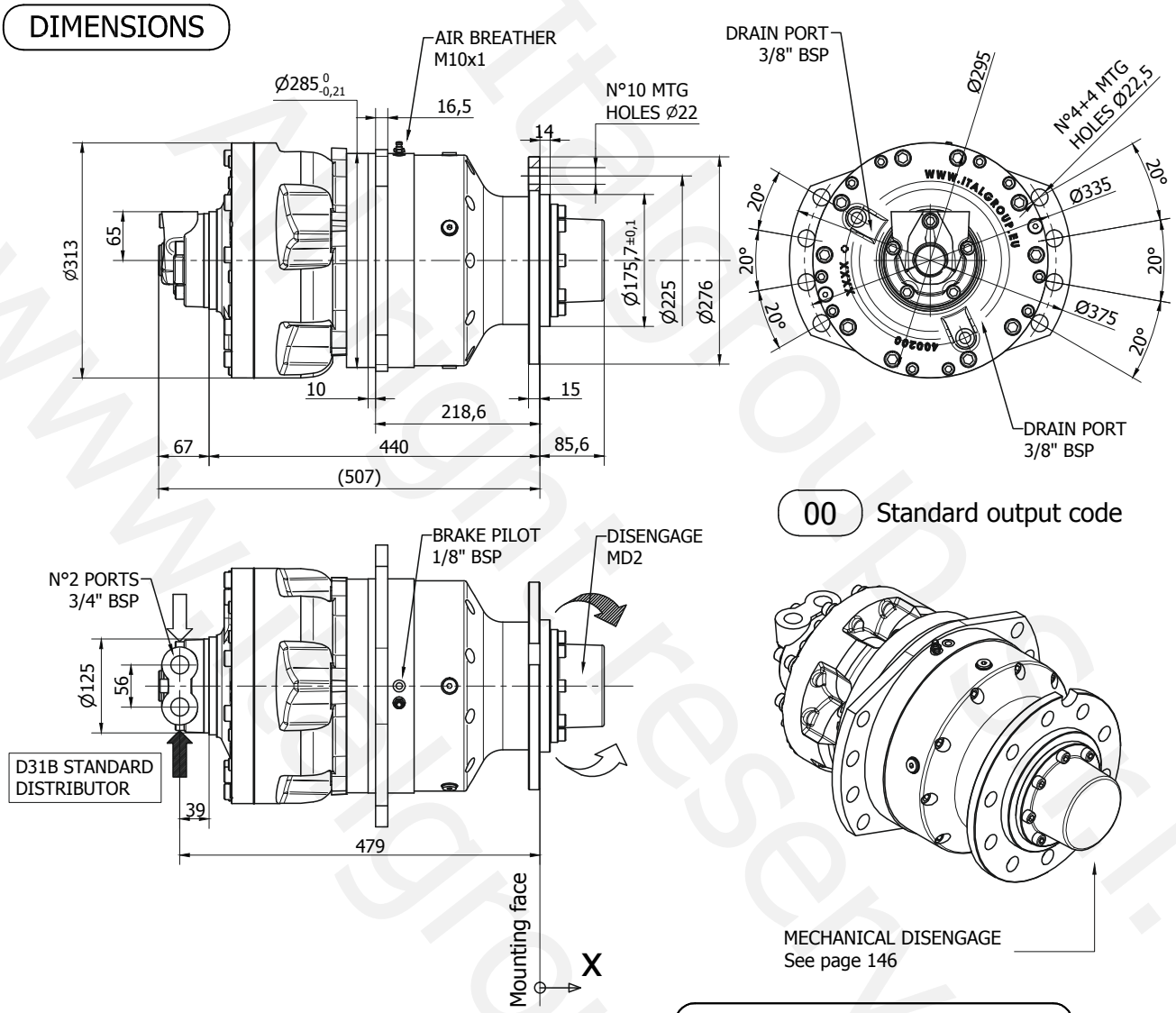


01 CO



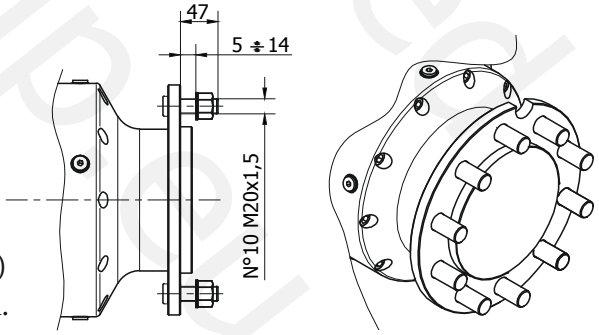
DIMENSIONS



00 Standard output code

MECHANICAL DISENGAGE
See page 146

OPTIONAL: STUD BOLTS



Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		1350	1550	1750
Motor displ.	[cc]	306	348	348
Gear ratio	[]	4,42	4,42	5
Total displ.	[cc]	1352	1538	1740
Specific torque	[Nm/bar]	21.5	24,5	27,7
Continuous pressure	[bar]	200	180	160
Peak pressure	[bar]	230	200	180
Max speed	[rpm]	190	185	170
Max cont. torque	[Nm]	4000	4000	4000
Peak torque (*)	[Nm]	4500	4500	4500
Max power	[kW]	75	75	75
Braking torque (optional)	[Nm]	5300	5300	6000
Brake release pressure (min)	[bar]	13	13	13
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	128	128	128

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

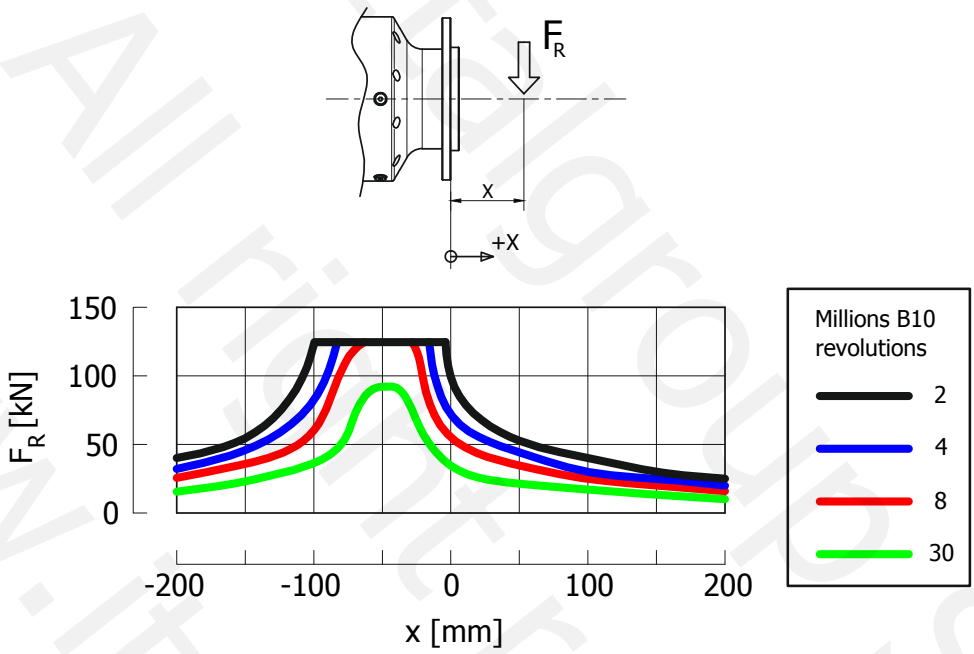
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

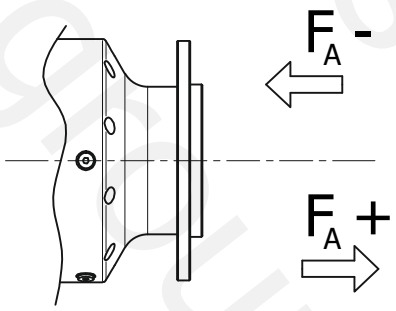
(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

For more information please contact Italgroup technical department.

RADIAL LOAD



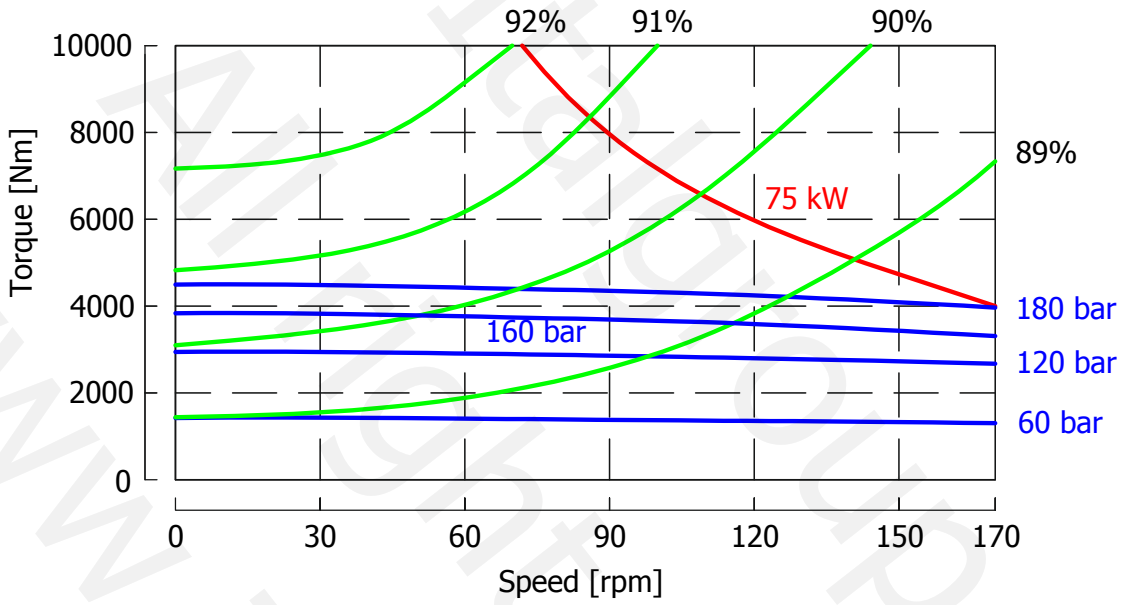
AXIAL LOAD



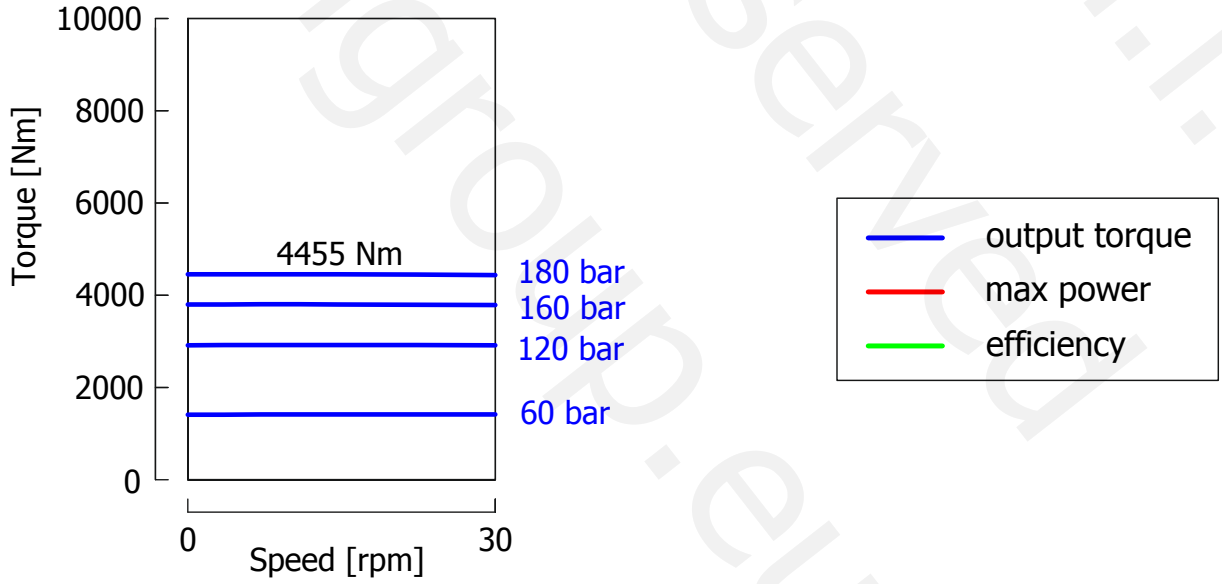
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	58	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W11 HC2 1750 MD2



STARTING TORQUE DIAGRAM - W11 HC2 1750 MD2



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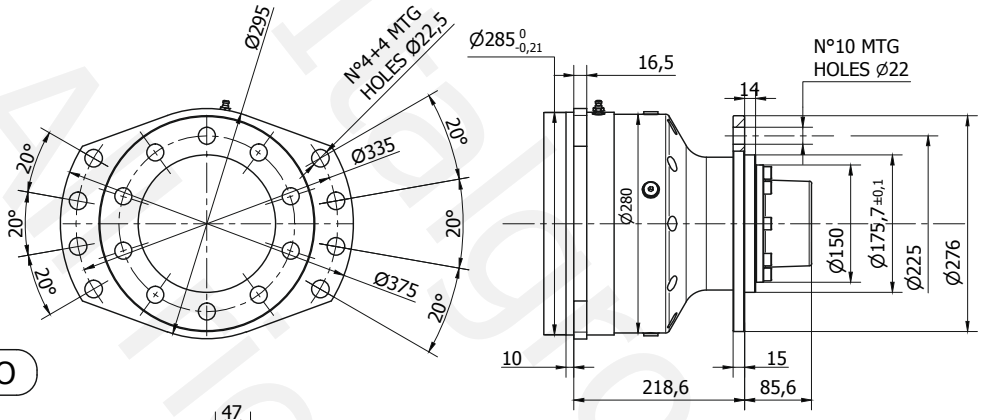
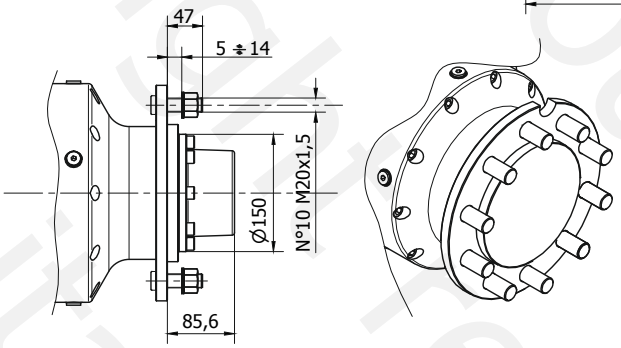


00 CO



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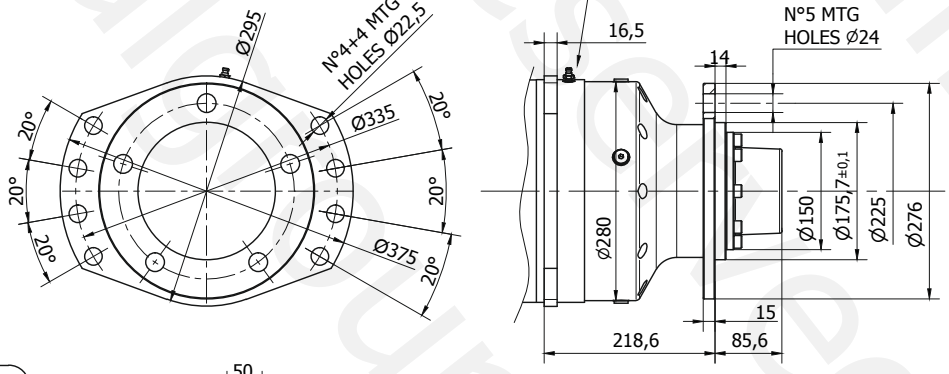
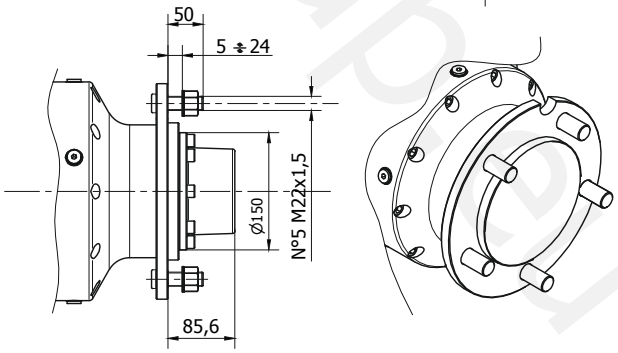
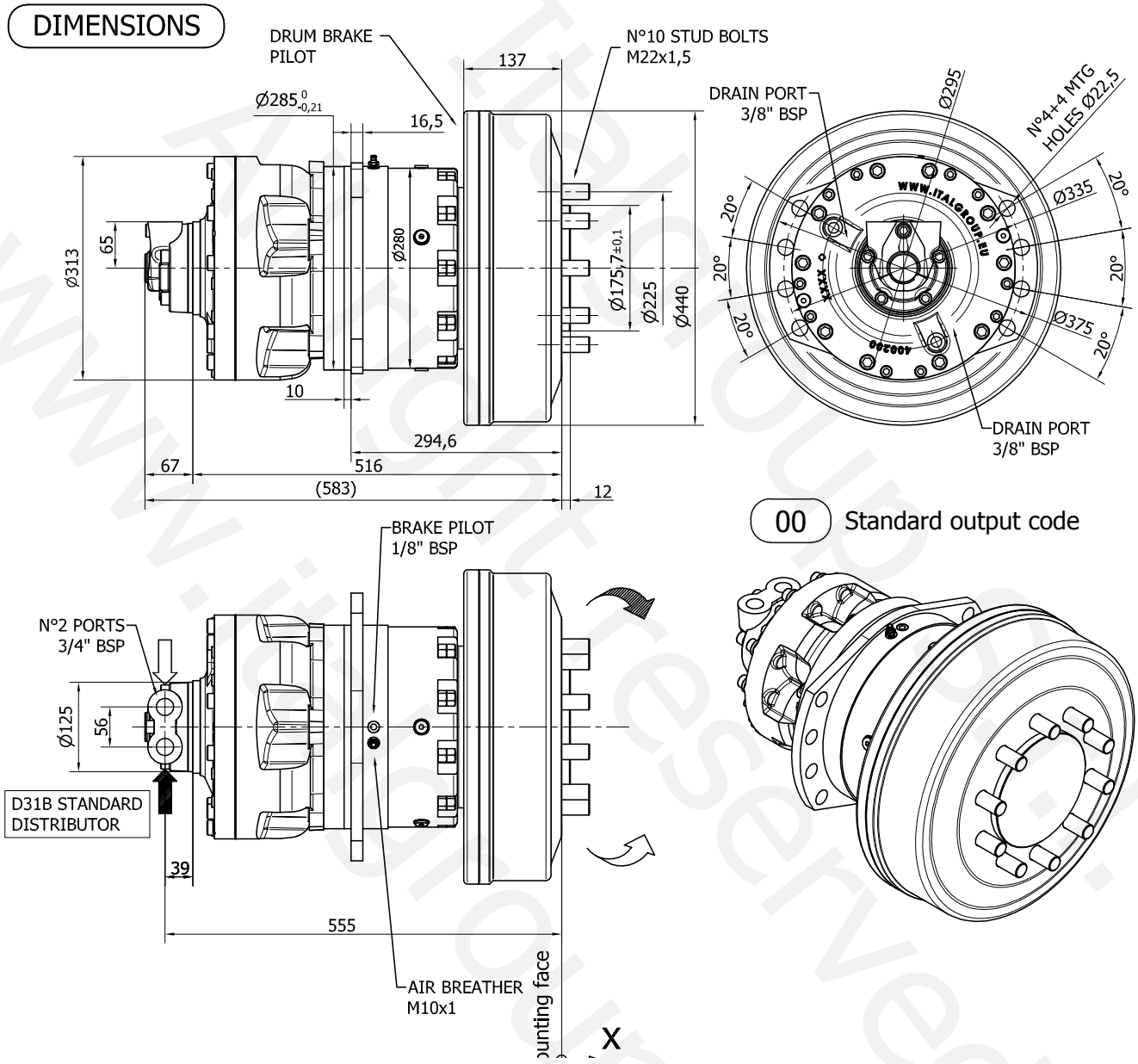


01 CO



DIMENSIONS



00 Standard output code

Recommended stud bolt fixing torque [Nm]			
Bolt grade	Bolt size	Torque (*)	Torque (**)
12.9	M20x1,5	620	780

(*) Torque for wheel rim.
(**) Torque for standard applications.
See page 147 for ordering code detail (CO or COS)
For more information please contact Italgroup S.r.l.

		1350	1550	1750
Motor displ.	[cc]	306	348	348
Gear ratio	[]	4,42	4,42	5
Total displ.	[cc]	1352	1538	1740
Specific torque	[Nm/bar]	21.5	24,5	27,7
Continuous pressure	[bar]	250	250	250
Peak pressure	[bar]	350	350	350
Max speed	[rpm]	190	185	170
Max cont. torque	[Nm]	4850	5520	6250
Peak torque (*)	[Nm]	6800	7730	8740
Max power	[kW]	75	75	75
Braking torque (optional)	[Nm]	7900	7900	8900
Brake release pressure (min)	[bar]	13	13	13
Drum brake torque	[Nm]	16000	16000	16000
Drum brake max pressure	[bar]	115	115	115
Drum brake pilot	[]	M14x1,5	M14x1,5	M14x1,5
Operating temp.	[°C]	-30 / 70	-30 / 70	-30 / 70
Dry weight	[kg]	138	138	138

- Maximum motor drain line pressure: 6 bar;

- The motor must always be filled with hydraulic oil before start-up. Please refer to the drain recommendation section;

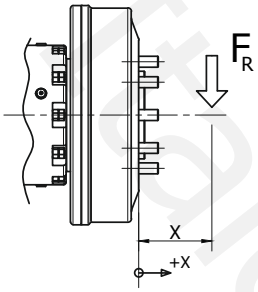
- HC motors have excellent freewheeling capacity. Refer to the freewheeling section for more information;

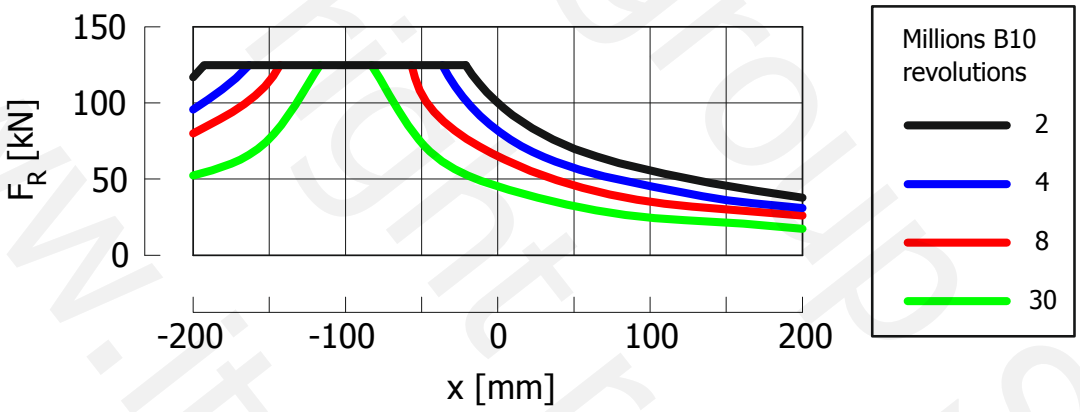
- For motor operation at maximum power flushing is required. Refer to flushing section for more information;

(*) The starting and low speed torque at peak pressure can be estimated as 99% of the peak torque. See the performance curve for more information.

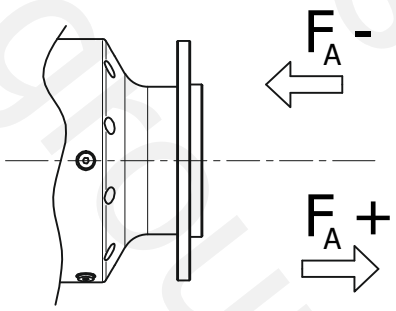
For more information please contact Italgroup technical department.

RADIAL LOAD





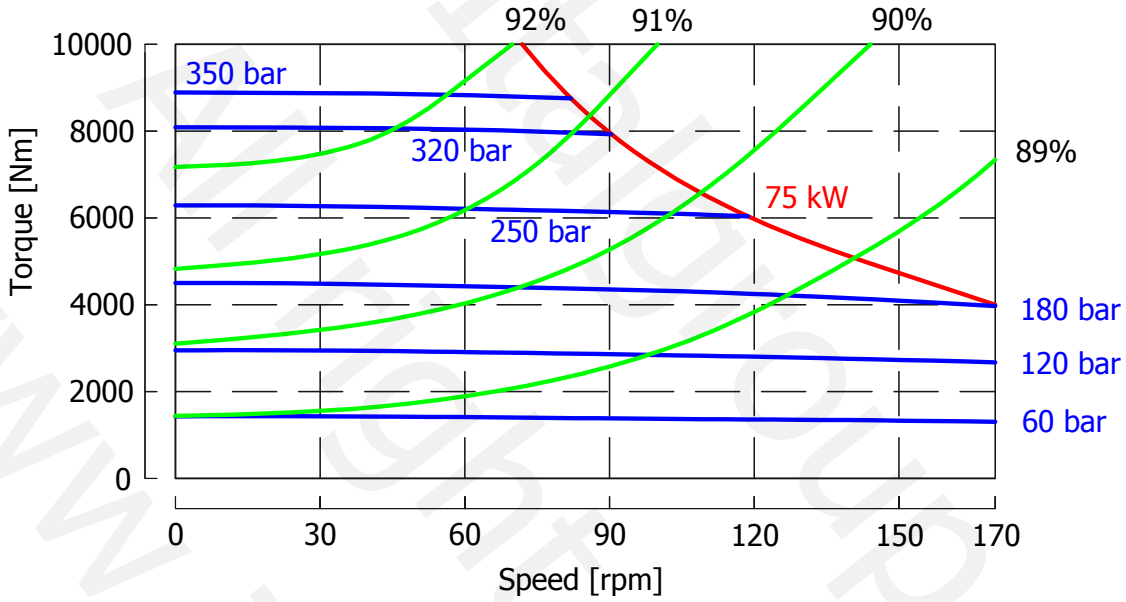
AXIAL LOAD



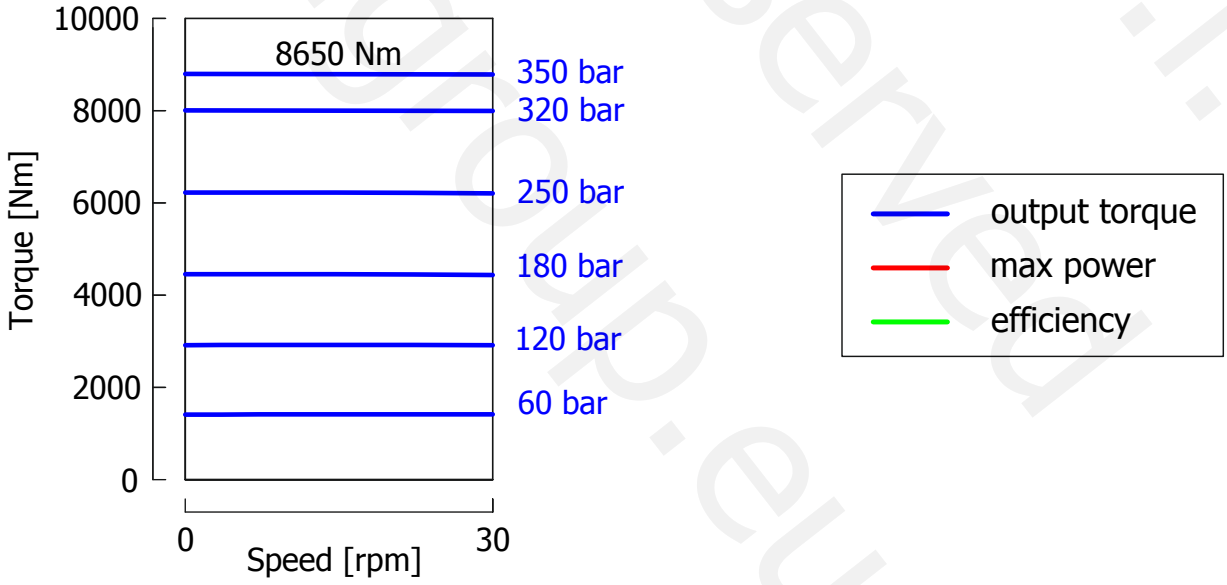
	FA + [kN]		FA - [kN]	
B10 revolutions (millions of cycles)	4	8	4	8
W11 HC1 AF	50	47	50	47

The radial load is calculated imposing axial load equal to zero.
The axial load is calculated imposing radial load equal to zero.
For differents load conditions please contact Italgroup S.r.l.

OPERATING DIAGRAM - W11 HC2 1750 DB



STARTING TORQUE DIAGRAM - W11 HC2 1750 DB



Italgroup W series motors are crankshaft radial piston motors combined with single stage planetary gearbox, rear case mounting and wheel flange. Regarding hydraulic motor pipe fitting, different flow distributors are available.

Please refer to below table for further information. For G100 and GD100 motors the flow distributor available is D20. For HC05, HC1, and HC2 standard distributor is D31B, but also other flow distributors are available. Regarding the selection see the following notes:

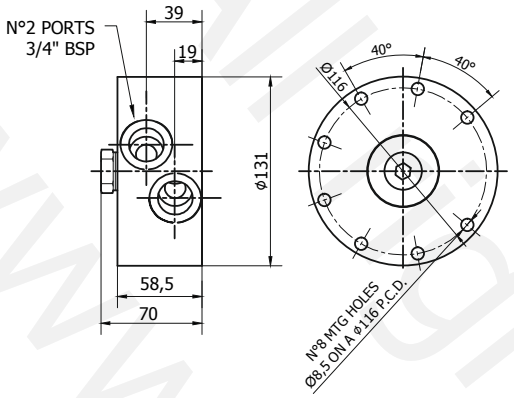
- when RV, AP, OVS or OVD valve is selected, the HC motor is highly recommended;

- when RV, AP, OVS or OVD valve is selected, the HC motors are fitted with D47 distributor;

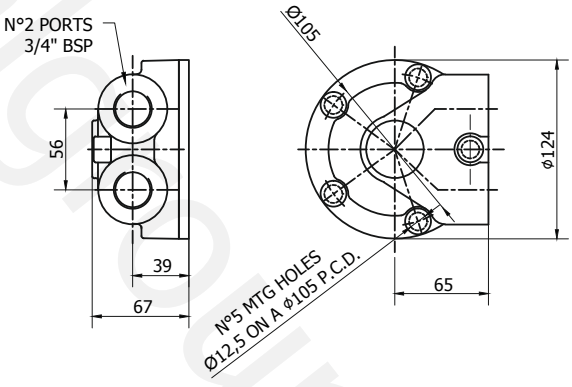
		D20	D31B	D310B	D36B	D316B	D40	D416	D47
MAX. CONT. FLOW	[l/min]	200	250	250	250	250	250	250	250
MAX. FLOW	[l/min]	300	400	400	400	400	400	400	400
MAX. CONT. PRESSURE	[bar]	250	250	250	250	250	250	250	250
PEAK PRESSURE	[bar]	500	500	500	500	500	500	500	500
W05 G100		●							
W05 GD100		●							
W05 HC05			●	●	●	●	●	●	●
W08 HC05			●	●	●	●	●	●	●
W08 HC1			●	●	●	●	●	●	●
W11 HC1			●	●	●	●	●	●	●
W11 HC2			●	●	●	●	●	●	●

Contact Italgroup technical department for further information/requests.

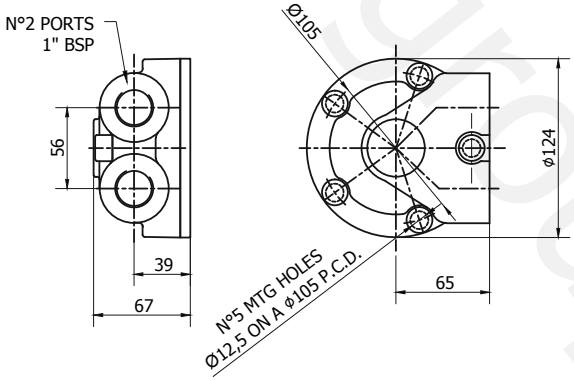
D20



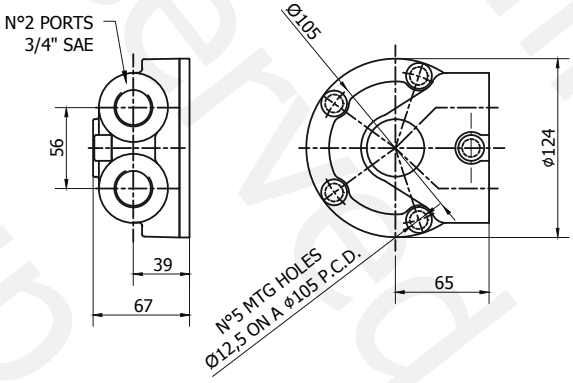
D31B



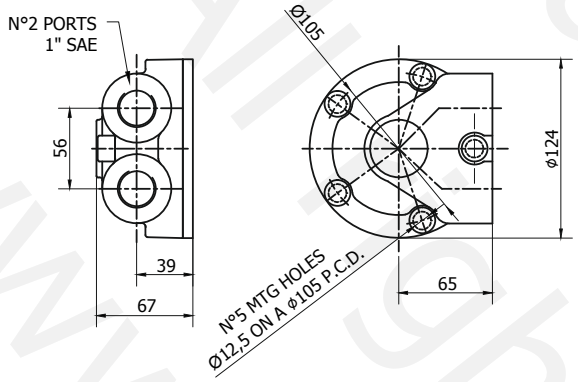
D310B



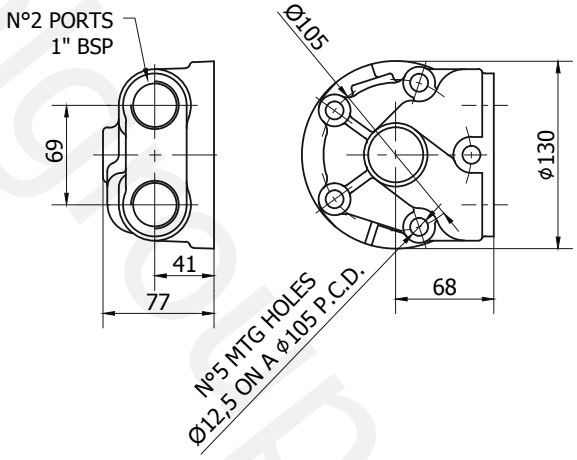
D36B



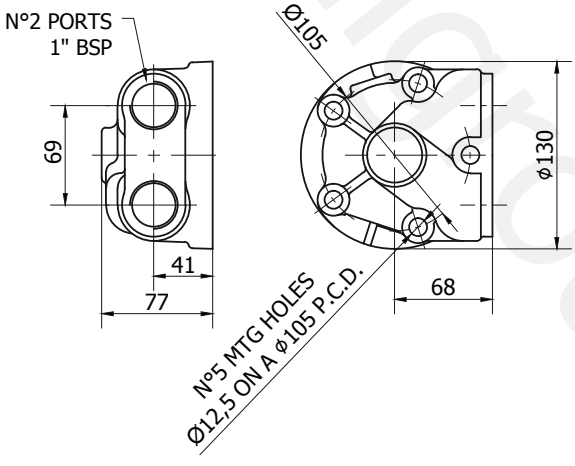
D316B



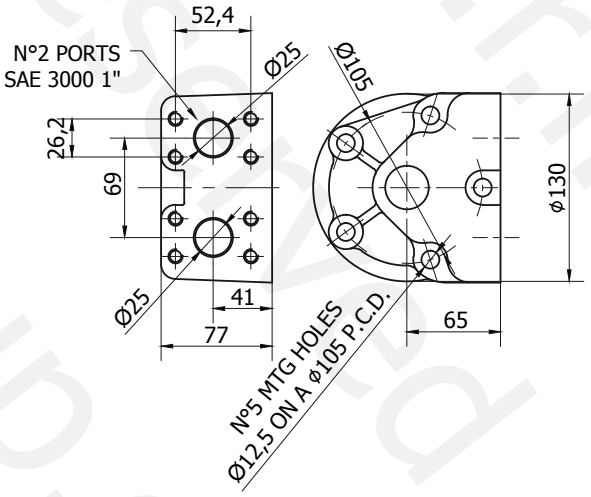
D40



D416



D47



Italgroup W series motors can be equipped with tachometers (different types are available, refer to the following pages for selection) and with hydraulic valves.

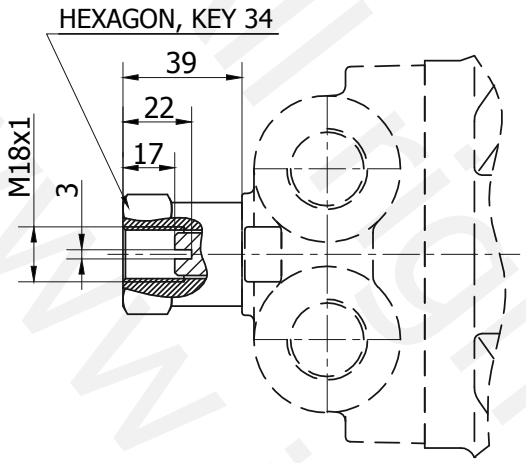
Regarding valves, if a group with HC motor is selected, the valve can be easily fitted directly to the motor distributor D47. For this reason, when customer needs a valve fitted on the wheel motor, we highly recommend the selection of a W wheel motor realized with HC05, HC1 or HC2 hydraulic motor.

If the selected W assembly is realized with a G100 or GD100 motor, in case an hydraulic valve is needed, please contact Italgroup for more information.

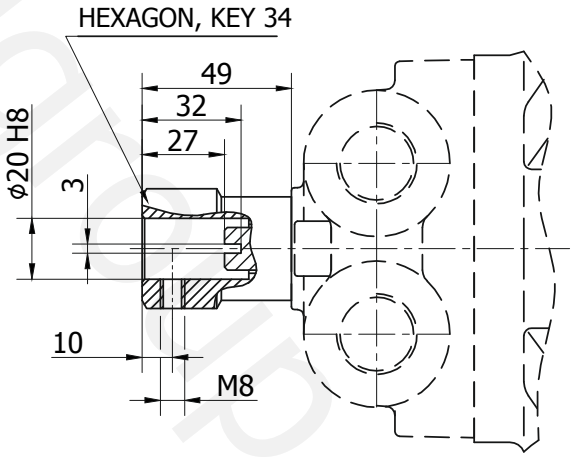
In special cases, personalized valve blocks are available upon request, please contact us for more information.

Contact Italgroup technical department for further information/requests.

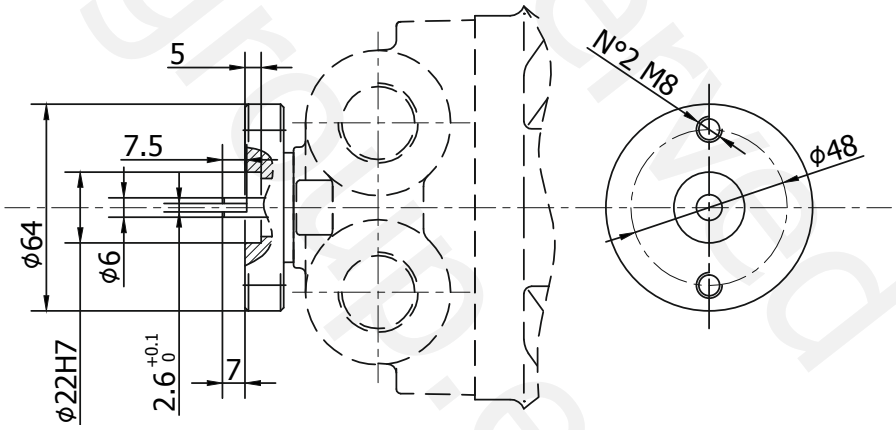
TA



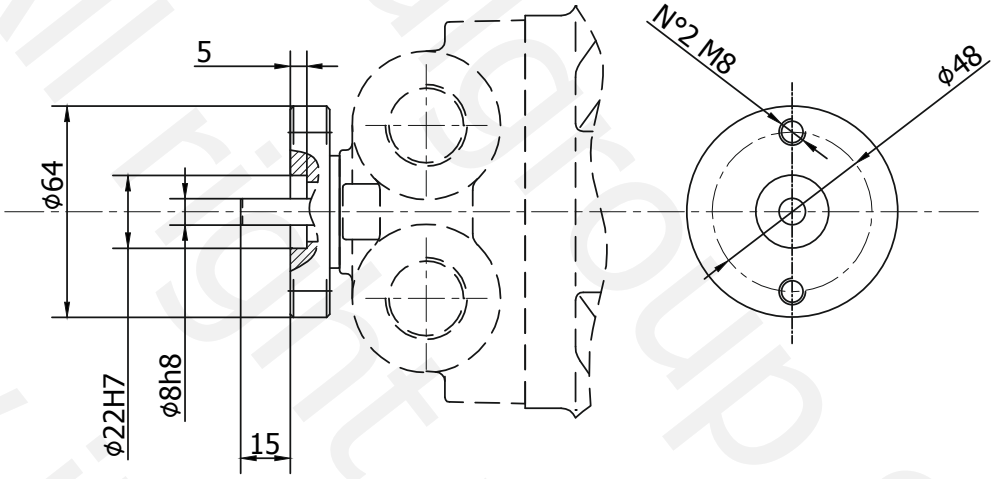
TB



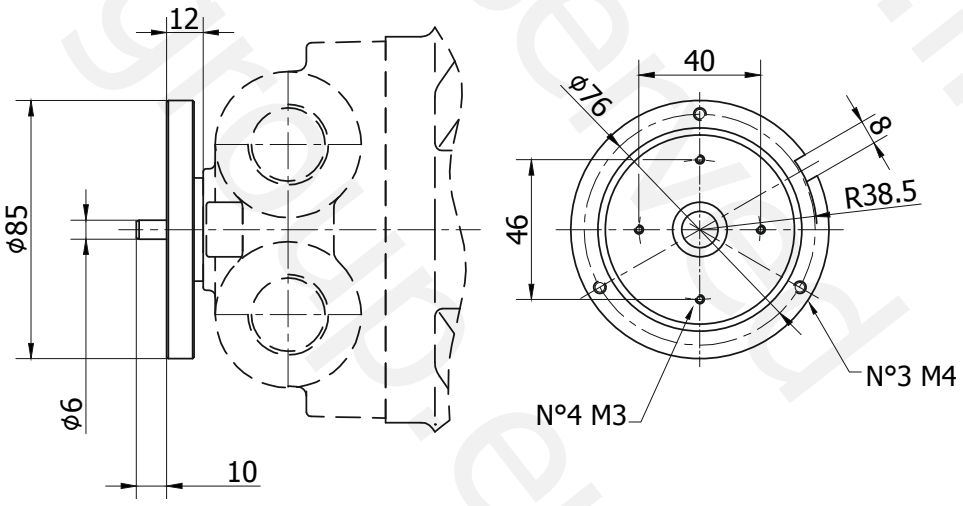
TT1



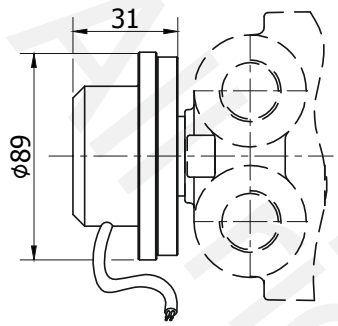
TQ1



EST



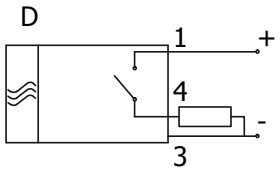
EST30



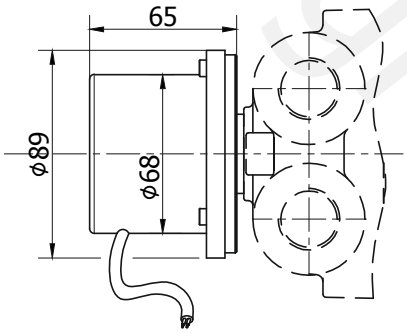
Operating parameters	E-...../3
Power supply (VDC)	10-30
Switching current (mA)	150
Frequency (Hz) 100rpm	50
Impulse/rpm	30
Operating temp. (°C)	-24/+70
Protection degree	IP67
Output	NPN
Motor type	All types

MODEL	ø6
Torque	1 Nm

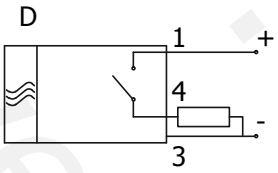
Model	Output	Fig.
E-..../.AP/....	PNP	D



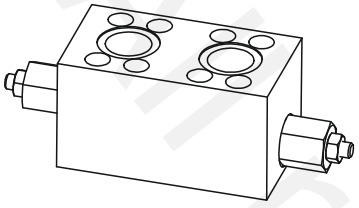
EST31

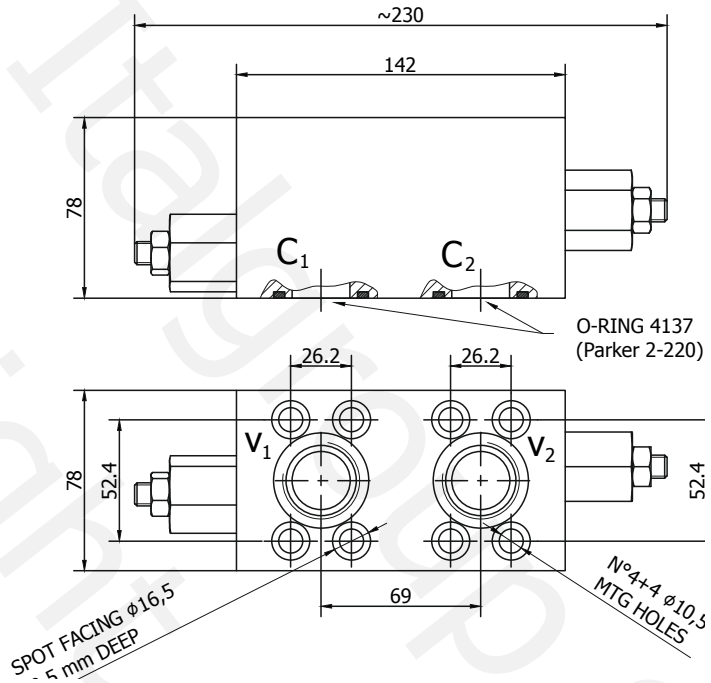


Power supply (VDC)	8-24
Impulse/rpm	500
Operating temp. (°C)	-0/+60
Protection degree	IP65
Output	Push-pull
Motor type	All types
MODEL	ø6
Torque	1 Nm



DIMENSIONS





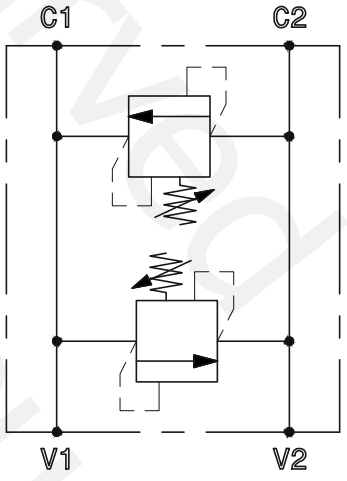
PORTS DIMENSION

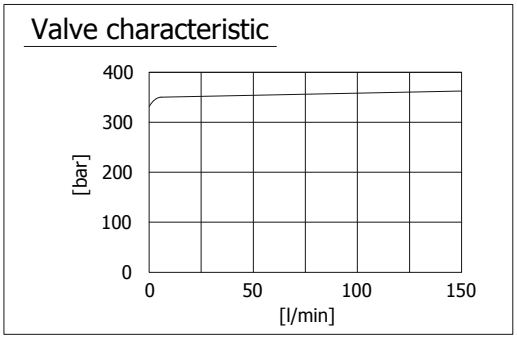
V1,V2	1" BSP
C1,C2	O-ring 4137 Parker code 2-220

TECHNICAL DATA - RVDA 80-200

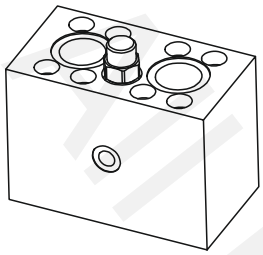
		RVDA.80.C.D47-200 (*)
NOMINAL FLOW	[l/min]	150
MAXIMUM FLOW	[l/min]	200
MAXIMUM PRESSURE	[bar]	350
RELIEF VALVE SETTING RANGE	[bar]	20-350
STANDARD RELIEF SETTING	[bar]	20
BLOCK MATERIAL	[]	steel
DISTRIBUTOR FITTING	[]	D47

- (*) Standard version. Usually ready on stock.



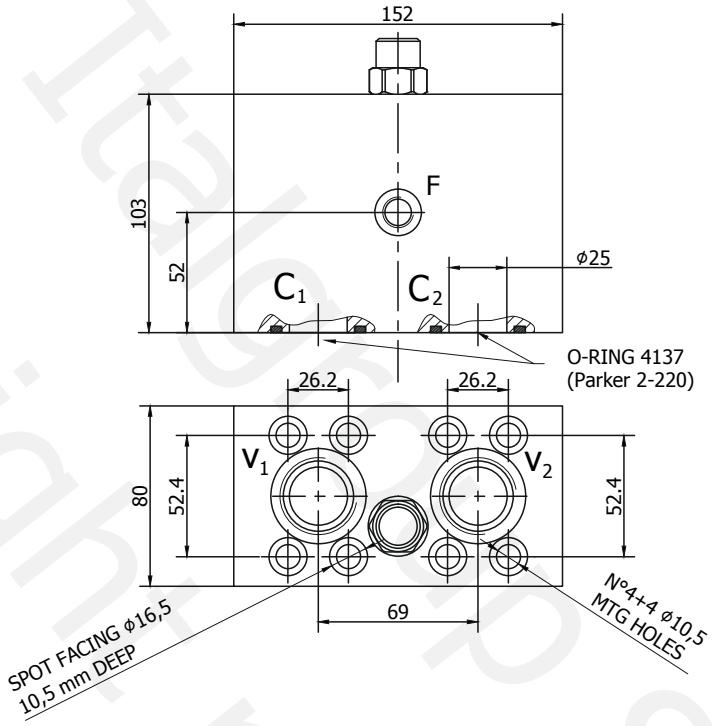


DIMENSIONS



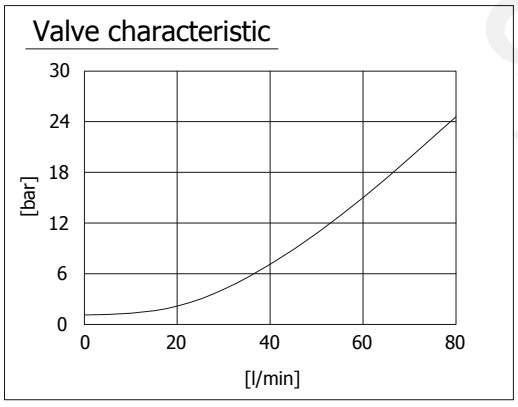
PORTS DIMENSION

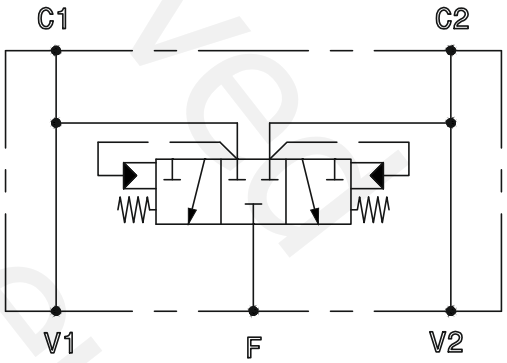
V1,V2	1" BSP
F	1/4" BSP
C1,C2	O-ring 4137 Parker code 2-220



TECHNICAL DATA - AP40

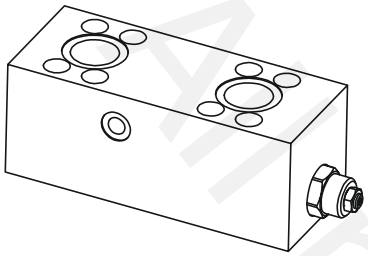
		AP40.D47
MAXIMUM FLUSHING FLOW	[l/min]	40
MAXIMUM PRESSURE	[bar]	350
BLOCK MATERIAL	[]	steel
DISTRIBUTOR FITTING	[]	D47

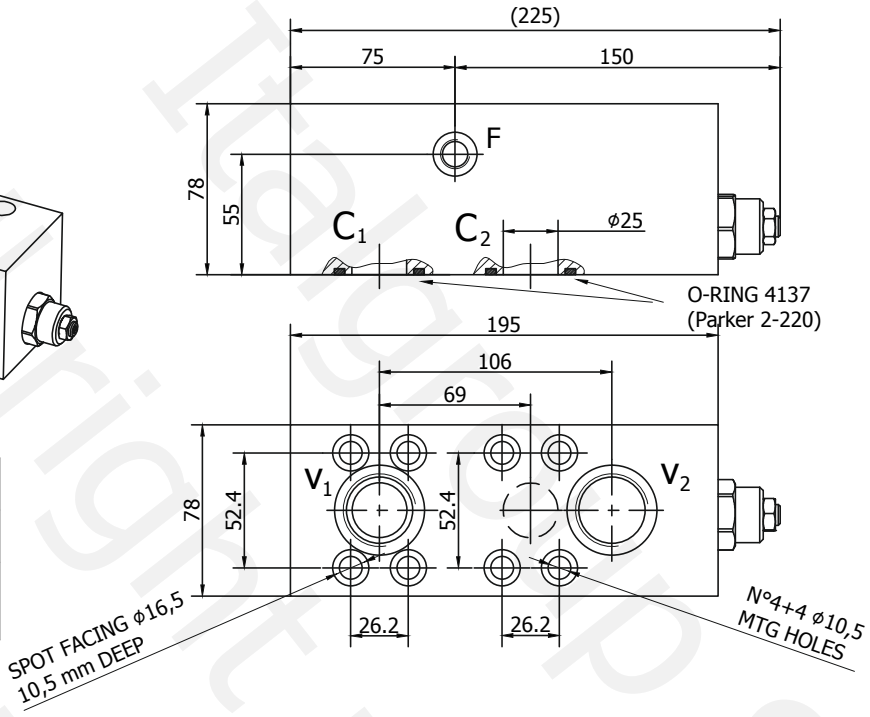




OVS - SINGLE OVERCENTER VALVE - OVSA 160

DIMENSIONS





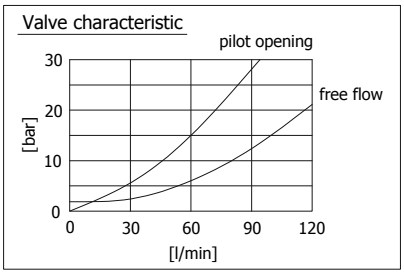
PORTS DIMENSION

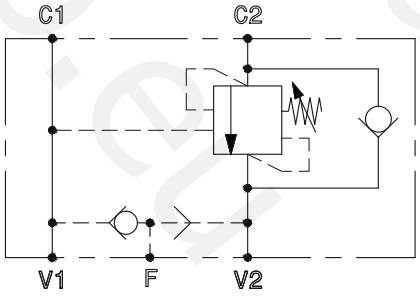
V1,V2	1" BSP
F	1/4" BSP
C1,C2	O-ring 4137 Parker code 2-220

TECHNICAL DATA - OVSA 160

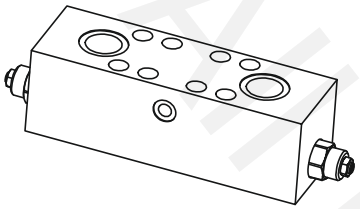
		OVSA.160.1.B.D47 (*)	OVSA.160.2.C.D47	OVSA.160.3.C.D47
NOMINAL FLOW	[l/min]	120	120	120
MAXIMUM FLOW	[l/min]	160	160	160
MAXIMUM PRESSURE	[bar]	350	350	350
PILOT RATIO	[]	3:1	4.5:1	10:1
RELIEF VALVE SETTING RANGE	[bar]	70-280	140-350	140-350
STANDARD RELIEF SETTING	[bar]	210	210	210
BLOCK MATERIAL	[]	steel	steel	steel
DISTRIBUTOR FITTING	[]	D47	D47	D47

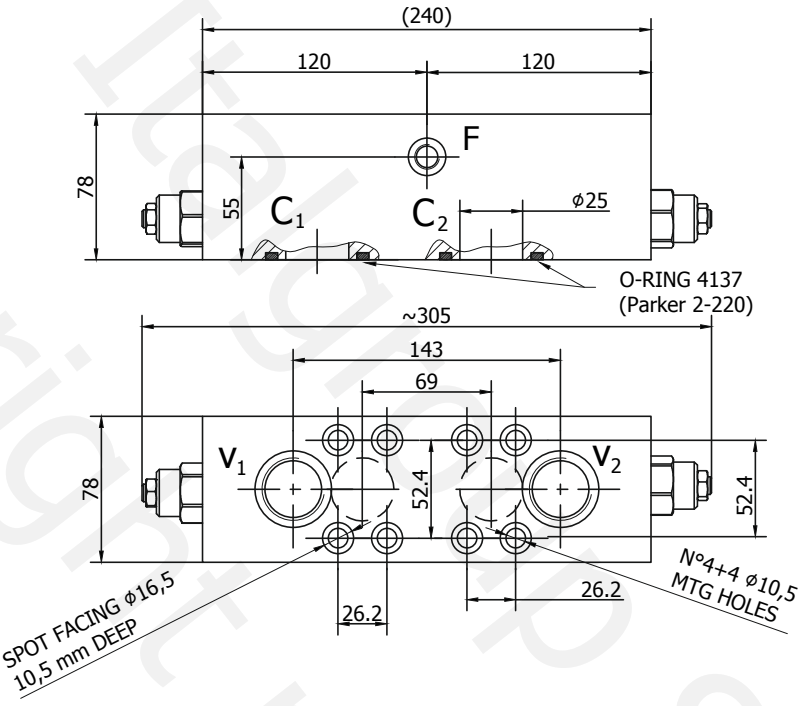
- (*) Standard version. Usually ready on stock.





DIMENSIONS





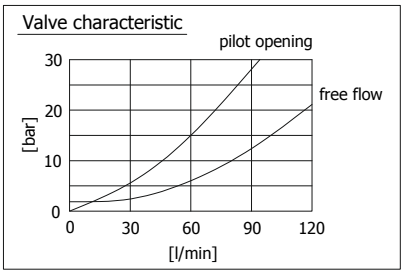
PORTS DIMENSION

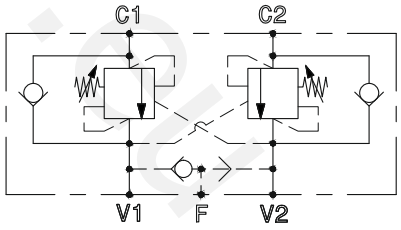
V1,V2	1" BSP
F	1/4" BSP
C1,C2	O-ring 4137 Parker code 2-220

TECHNICAL DATA - OVDA 160

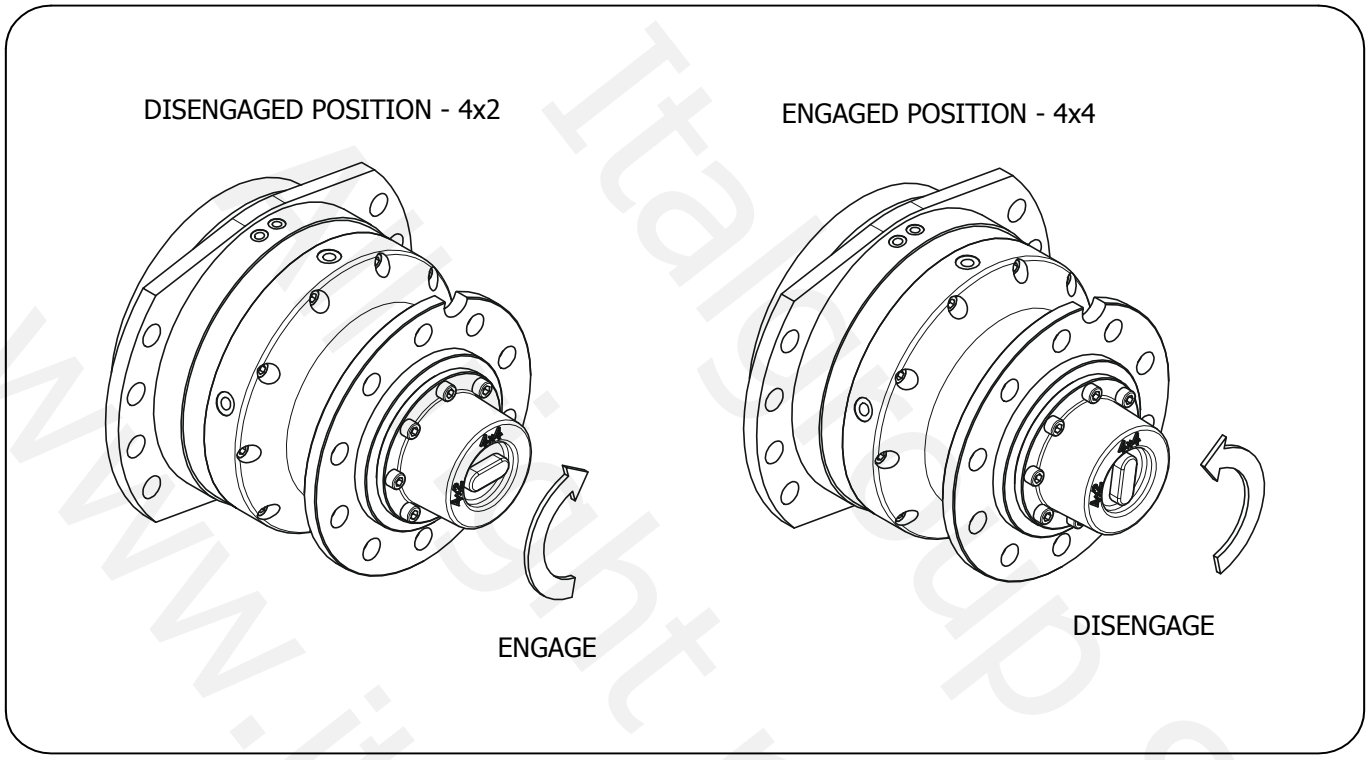
		OVDA.160.1.B.D47 (*)	OVDA.160.2.C.D47	OVDA.160.3.C.D47
NOMINAL FLOW	[l/min]	120	120	120
MAXIMUM FLOW	[l/min]	160	160	160
MAXIMUM PRESSURE	[bar]	350	350	350
PILOT RATIO	[]	3:1	4.5:1	10:1
RELIEF VALVE SETTING RANGE	[bar]	70-280	140-350	140-350
STANDARD RELIEF SETTING	[bar]	210	210	210
BLOCK MATERIAL	[]	steel	steel	steel
DISTRIBUTOR FITTING	[]	D47	D47	D47

- (*) Standard version. Usually ready on stock.





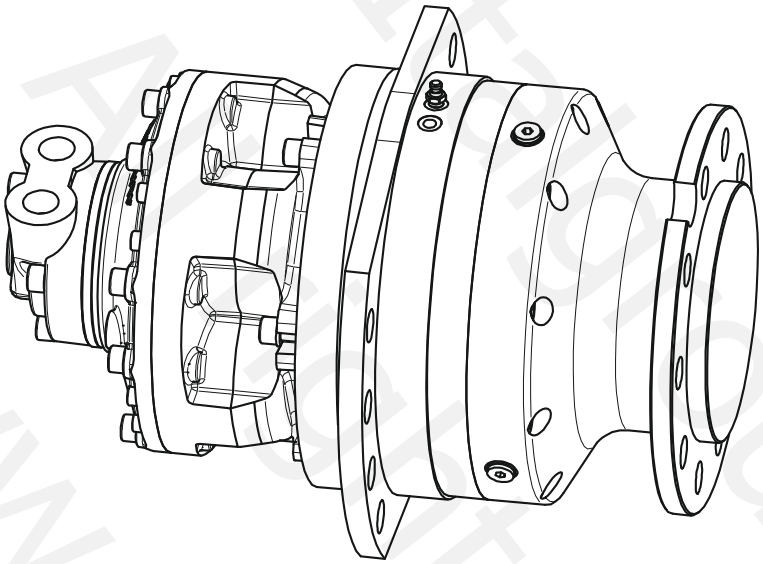
MECHANICAL DISENGAGE



TECHNICAL DATA - MD1 / MD2

		MD1	MD2
NOMINAL TORQUE	[Nm]	2500	4000
PEAK TORQUE	[Nm]	3000	4500
WHEEL MOTOR TYPE	[]	For W05	For W08 - W11

- The mechanical disengage mechanism must be activated only when machine is stopped and in a safe condition;
- Before to disengage the mechanism, if the vehicle is not on a horizontal surface, the vehicle must be secured through adequate brakes or other mechanism, to assure that the vehicle cannot move during disengage;
- The engage/disengage operation must always be performed by well instructed and responsible operators.

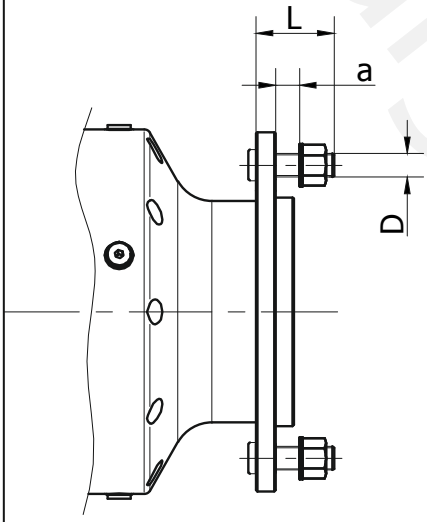


CO

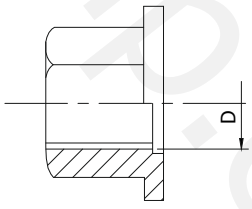
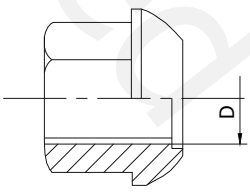
COS

STUD DIMENSIONS

Stud bolt type (D)	L	a
M18x1,5	64	5-14
M20x1,5	62	5-14
M22x1,5	65	5-27



NUT SELECTION

DIN 74361B flat nut (supplied togheter with washer DIN 74361C)	DIN 74361A spherical nut
	
Ordering code: **CO**	Ordering code: **COS**

Italgroup®
HYDRAULIC MOTORS
ITALY

APPLICATION DATA SHEET

To ensure that the most suitable motor is selected for your application please fill out and send us a copy of the data sheet below.

- **GENERAL INFORMATION**

Vehicle model/reference name: .....

Type of vehicle: ☐ Agricultural vehicle ☐ Road roller ☐ Skid steer loader ☐ Dumper

☐ Harvesting vehicle ☐ Fork lift ☐ Off-road vehicle ☐ Motorised trailer

Other: .....

Production Volume: .....

If the vehicle is already in production, please write down hydraulic motors used: .....
.....

- **VEHICLE SPECIFICATIONS**

N° of wheels ..... N° of motors ..... Max speed (km/h) .....

Ext. tyre diameter of drive-wheels front (m) ..... rear (m) .....

Vehiche weight: unloaded (kg) ..... loaded (kg) .....

Weight distribution on vehicle axes: ..... unloaded/front (kg) ..... unloaded/rear (kg) .....

loaded/front (kg) ..... loaded/read (kg) .....

Steering system: ☐ 1-wheel steering ☐ 2-wheel steering ☐ 4-wheel steering ☐ Skid steering ☐ Tracks ☐ Motorised trailer

- **PRIMARY ENGINE**

Max power (kW) ..... max speed (rpm) .....

- ..... **HYDRAULIC PUMP**

Type of pump ..... Quantity: .....
Displacement (cm^3) ..... max pressure (bar) .....

- ..... **VEHICLE OPERATING CONDITIONS**

Specify type of terrain

☐ Tarmac/concrete ☐ Off-road, dry ☐ Off-road, wet ☐ Rails Max angle slope: ……°

Working hours: Per day (h) ..... Per year (h) .....

- **OPTIONS REQUIRED**

Will the motor operate in free-wheeling (Y/N)? .....
If brakes are required, indicate: Quantity per vehicle ..... on which wheels .....

Brake actuation: ☐ mechanical ☐ hydraulic positive ☐ hydraulic negative

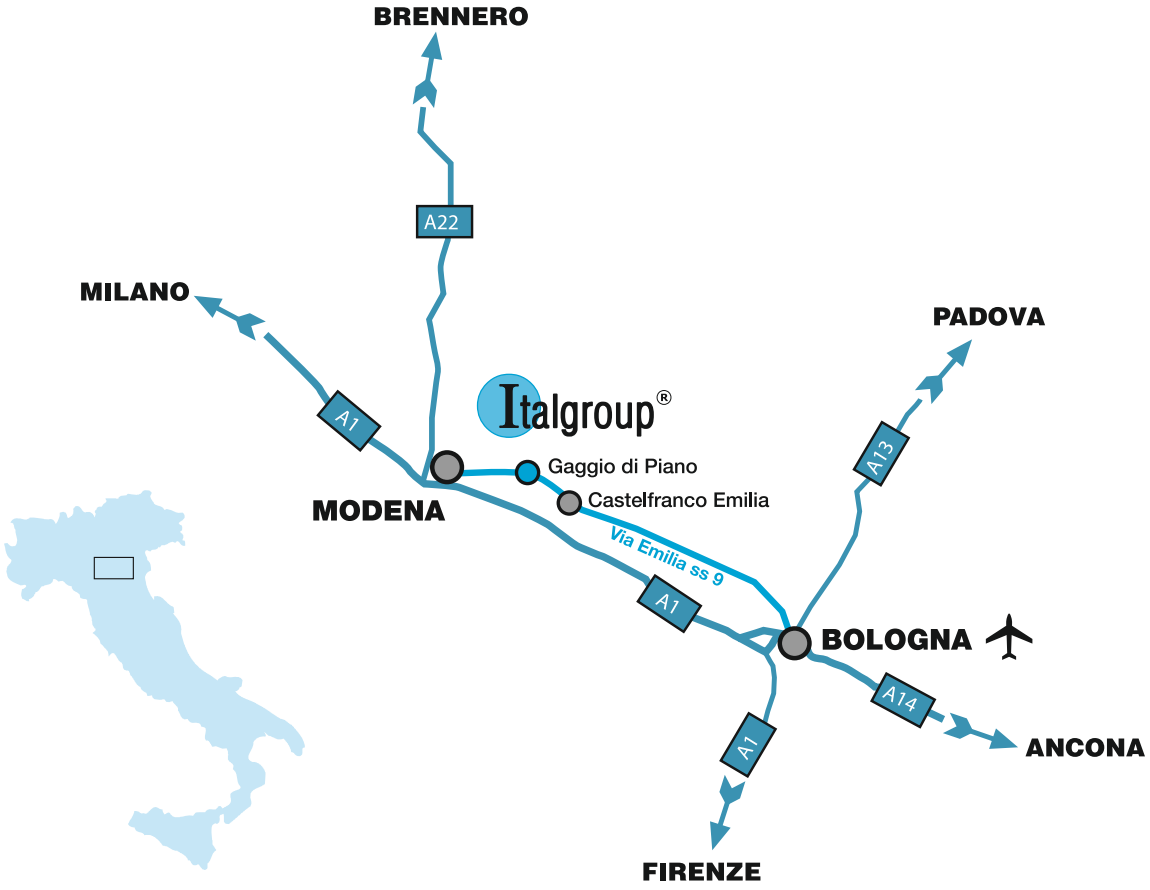
Italgroup®
HYDRAULIC MOTORS
ITALY

CONTACT US

Italgroup S.r.l.
Via Pacinotti 20/22
41010 - Gaggio di Piano (Modena) – Italy

Tel. +39 059 92 42 57
Fax +39 059 92 01 13
e-mail: italgroup@italgroup.eu
internet: http://www.italgroup.eu

REACH US



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Italgroup®

HYDRAULIC MOTORS

ITALY

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