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## **BAG OPENER**

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#### 4.4 – CONDUCTING THE MACHINE: MAINTENANCE

In this paragraph, are listed all the operations of ordinary and extraordinary maintenance, planned to ensure the optimal functioning of the bag opener.



**BEFORE CARRYING OUT ANY ELECTRICAL OR MECHANICAL MAINTENANCE, MAKE SURE THE MACHINE HAS BEEN DISCONNECTED FROM THE POWER SUPPLY AND DEVICES FOR STARTING AND SHUT DOWN HAS BEEN BLOCKED BY A PADLOCK.**



**WAIT UNTIL THE MACHINE IS COMPLETELY STOPPED BEFORE WORKING ON IT.**

It is a good rule to follow the following list before carrying out maintenance:

- Disconnect from electrical tension.
- Block starters by a padlock.
- Make sure there is no voltage in the circuits, including the auxiliaries and supplementary services.

**REVOKE THE MEASURES ONLY AFTER HAVING COMPLETED THE MAINTENANCE AND PUT IN PLACE AND LOCKED ELECTRICAL AND MECHANICAL PROTECTIVE DEVICES.**



The list above should be considered indicative and not mandatory for the purposes of security.

Additional safety measures can be taken, also in connection with the specific installation or with the specific rules adopted by the user.

In case of important and complex maintenance it must refer to the drawings, wiring diagrams and recommendations contained in this manual.



**NOTE**



**IF IN DOUBT, CONTACT THE MANUFACTURER TO ENSURE SAFETY IN ANY CASE.**

**CHECK THAT THE TOOLS AVAILABLE ARE SUITABLE FOR USE, DO NOT USE IMPROPER TOOLS.**

It is very important to prevent malfunctions that could directly or indirectly create serious injuries or damage to persons and property, observe all instructions given on the machine and in this document.

#### 4.4.1 – HYDRAULIC OIL CHANGE FROM THE POWER UNIT

Change the hydraulic oil whenever it is contaminated and every 3000 hours of operation; at least every two years.



**DO NOT DISPOSE OF USED OIL IN THE ENVIRONMENT.**

Unscrew manually the oil filler cap in the lid of the unit, provide for the filling of the reservoir of the prescribed amount: check the correct level through a special indicator.



**AVOID PROLONGED CONTACT OF THE HYDRAULIC OIL WITH SKIN: USE GLOVES.**

**USE APPROPRIATE TOOLS FOR THE WORK YOU MUST MAKE. BEFORE MAKING ANY WORK, DOWNLOAD ANY RESIDUAL PRESSURE COMMUTED CONTROL VALVE IN THE POSITION OF DISCHARGE.**

#### 4.4.2 – INSPECTION AND CLEANING OF THE OIL FILTERS

This operation have to be carried out every oil change.

Remove the tank cover of the unit by unscrew the bolts placed on the perimeter of the same, without removing any components mounted on it.

Pump suction filter: consists of a cylindrical metal mesh; is located under the pump, in the suction side of the same, after visual inspection, proceed with the removal and cleaning of the filters when they have traces of dirt.

Cleaning the filter elements with solvent if there are sludge, then dry with compressed air.

If the bottom tank is dirty, clean it with degreasing not aggressive and compressed air to accelerate the evaporation of the same.

Replace the cover of the tank, making sure that it is placed in the same initial configuration: not rotate it.



**ACTIONS OF MAINTENANCE, WHICH INVOLVE THE REMOVAL OF PARTS OF THE POWER UNIT MUST BE DONE BY A PROFESSIONAL OR PREFERABLY IN OUR WORKSHOP.**

The internal parts of the control unit do not retain residual pressure, unless the outlet pipes that can maintain a residual pressure in the presence of piloted check valves mounted on the directional valve.

In case of that, wrap a rag on the hose fitting.



#### **4.4.3 – HYDRAULIC OIL CHANGE**

After the working period indicated in the maintenance table (Table N. 2), it must provide for the replacement of the hydraulic oil.

#### **4.4.4 – RETURN OIL FILTER CHANGE**

After the working period indicated in the maintenance table (Table N. 2), it must provide for the replacement of the return oil filter.

### **4.5 – MANAGING OF THE MACHINE: MAINTENANCE**

#### **4.5.1 - EXTRAORDINARY MAINTENANCE**

For extraordinary maintenance means the replacement of the components indicated in Table 2, after they have worked for already several thousand hours, as well as the actions due to unforeseen reasons, such as treatment of materials not provided for, defects, accidents, maneuvering errors, etc.

The construction company is committed to providing its cooperation for the reactivation of the functionality of the bag opener, stopped for the reasons above, as soon as possible in accordance with the contractual agreements.

#### **4.5.2 – VIBRATION AND ANOMALOUS NOISES**

Vibration may occur when some materials can stick to the drum or some bolts are unscrewed. In such a case it is necessary to identify the cause, stop the rotation of the drum, clean it from wrapped material and/or retighten the bolts. Restart the bag opener.

### **4.6 – IDENTIFICATION PLATES ON THE MACHINE**

The machine has labels that identify the manufacturer and the conformity with EC regulations product.

The labels must be legible in all the elements they contain.

Using the identification data indicated for relations with the manufacturer, such as: request spare parts, information and assistance.

If the plate deteriorates with use and is no longer readable, even in one of its elements, it is advisable to request a new one from the manufacturer quoting the data contained in this manual or in the original plate.

## MANUFACTURER

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**Figure 10**

## 4.6 – SPARE PARTS

The machine is marked with a serial number and a model shown on the nameplate.



**IN ORDER TO HAVE AN URGE DELIVERY OF THE SPARE PARTS IT IS NECESSARY TO COMMUNICATE THE FOLLOWING DATA:**

- **MODEL OF THE MACHINE**
- **IDENTIFICATION NUMBER**
- **DESCRIPTION OF THE COMPONENT**

## 5 – SAFETY DEVICES ON THE MACHINE

It is very important to read the content of this chapter, before starting up and use the bag opener, as will be provided information about the safety of operators and possible risks to which they may be exposed, due to operations not provided or incorrect use.

Then it will list the safety devices installed and the residual risks, with its operating procedures to eliminate potentially hazardous situations.

The safety devices on the machine can be classified into:

- ✓ PASSIVE PROTECTIONS
- ✓ ACTIVE PROTECTIONS

The passive protections are essentially constituted by a case made of sheet metal of steel, they shelters the moving parts of the line (drum, shafts, etc.) and the transmissions; all these guards are removable with simple hexagonal wrenches.



**NEVER REMOVE THE GUARDS AND THE PROTECTIONS INSTALLED. PERIODICALLY CHECK THE INTEGRITY AND THE FUNCTIONALITY.**

In the main electrical panel there are the emergency button which stops the bag opener when pressed, the protective devices from an overload and the devices of indirect contact, consisting of breakers and thermal magnetic-Automatic differential. Such devices are to be considered, to all effects, active protection of the machine.

**SUBSTITUTION OF COMPONENTS OF SECURITY AND EMERGENCY IN CASE OF FAILURE OR MALFUNCTION, WILL BE MADE USING THE SAME TYPE OF PARTS ARE USED IN THE DESIGN AND CONSTRUCTION OF MACHINE.**



**THE MANUFACTURER IS NOT RESPONSIBLE FOR DAMAGE TO PERSONS AS A RESULT OF AN ARBITRARY CHOICE OF SAFETY COMPONENTS.**

## 5.2 – ACTIVE PROTECTIONS



**Figure 11**

On the machine are mounted active protection devices, in particular on the doors for the inspection.

When the operator open the inspection door, the safety switch immediately stops the moving parts, placing the machine in emergency conditions.

To restore normal operation, then it will be necessary to remove the causes that have generated the emergency and then restore the operation from the electrical cabinet.



**IT IS ABSOLUTELY FORBIDDEN TO RESTORE THE NORMAL OPERATION OF THE BAG OPENER UNLESS YOU HAVE IDENTIFIED THE CAUSES THAT CREATED THE STATE OF EMERGENCY.**



**NEVER BYPASS OR DEACTIVATE THE SAFETY DEVICES. THEIR ABSENCE OR THEIR MALFUNCTION MAY CAUSE HIGH HAZARDOUS SITUATIONS.**

## 5.1 – PASSIVE PROTECTIONS

In addition to the safety devices in the control panel, the machine has fixed guards, which fully prevent access to the moving parts from the staff responsible for conducting. They can have access to the moving parts only after having stopped the machine and put in conditions of safety.

## Annex 1 Instructions for proper maintenance and regular checks

**TABLE 1: BULLETIN CHECKING FOR NORMAL CONDUCTING BAG OPENER AND CHAIN CONVEYOR**

BULLETIN OF REGULAR CHECK					
Bag opener type	Identification number	Description			
Year		Week			
CHECKLIST					
Control Description	scheduled frequency	check	Date of check	Signature of the operator	Note:
absence of material in the hopper	Continuous				
General status of the bag opener	6 hours				
Cleanliness	24 hours				
Status safety devices	24 hours				
Absence of occlusions	24 hours				
Bearing lubrication	14 days				
Wear	3 months				
Pressure check unladen max 40 bar	6 hours				
Pressure check laden max 200 bar	6 hours				
Oil temperature check Max 70 °C	6 hours				
Heat exchanger cleaning	24 hours				
Oil level check	24 hours				
Check of tightening torque motor screws	7 days				
Check of tightening torque bearing housing screws	7 days				
Visual check of Hydraulic motor	7 days				
Visual check of hydraulic hoses and fittings	7 days				
Chain tension	14 days				

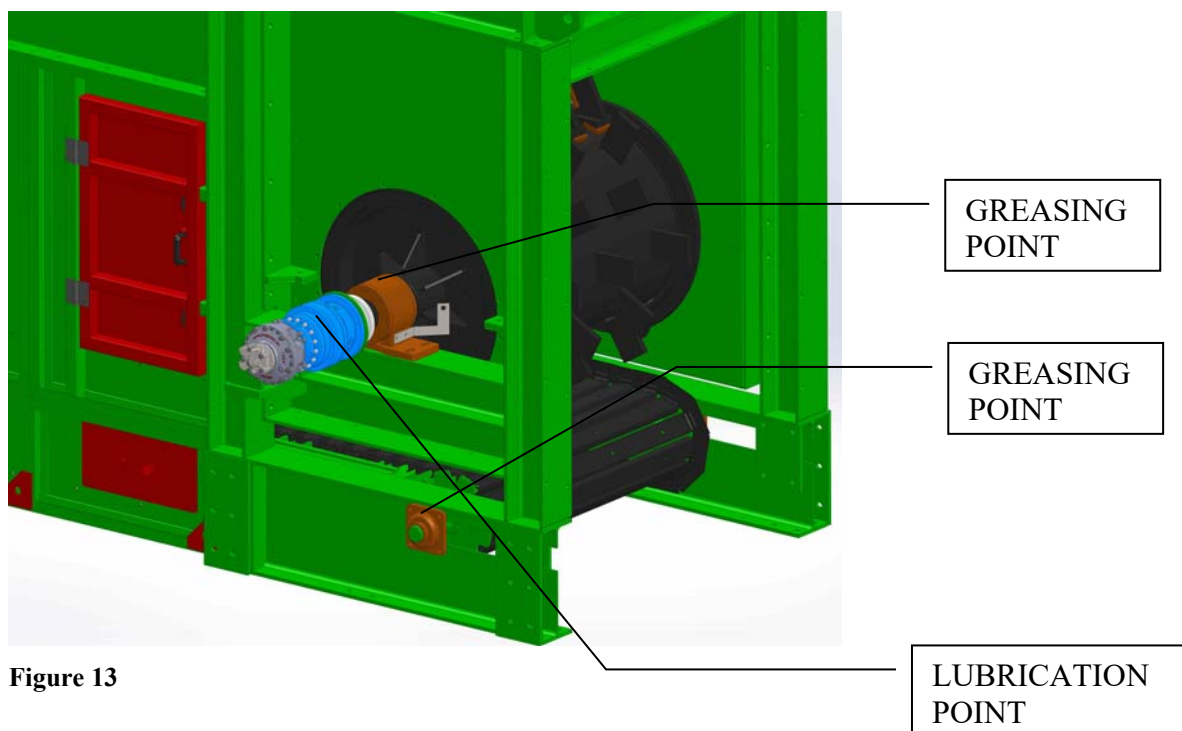


**TABLE 2: BULLETIN CHECKING FOR NORMAL CONDUCTION OF THE BAG OPENER**

SCHEDULE OF CHECKS, MAINTENANCE AND REPLACEMENT PARTS				
COMPONENT	INTERVAL OF ASSISTANCE IN HOURS			
	Type control	Check	Maintenance	Replacement
Bearings	abnormal noise	300 hours		8.000 hours
Supports	abnormal noise	300 hours		8.000 hours
Hydraulic motor	Abnormal noise	300 hours		8.000 hours
Electric motor	abnormal noise	300 hours		20.000 hours
Hydraulic oil	Check level	300 hours		3.000 hours
Return oil filter	Visual	300 hours		1.000 hours
Hydraulic hoses	Visual	300 hours		5000 hours
Suction oil filter	Visual	1000 hours	3000 hours	
Chain of transport	Abnormal noise	80 hours	150 hours	8.000 hours
Gearbox (*)	abnormal noise	40 hours	300/3.000 hours	8.000 hours
Shutters and porters	Visual	40 hours		
Bolts fastening	Tightening	300 hours		
Gearbox oil (*)	Visual	300 hours		

**TABLE 3: POINT OF GREASING AND LUBRICATION**

POINT OF GREASING AND LUBRICATION				
MACHINE	GREASING POINTS	Nr	LUBRICATION POINTS	Nr
Bag opener	Bearings of drum	2		
Hydraulic central unit	Bearings of electrical motor	2		
Bag opener			Gear box	1
Feed conveyor	Bearings of drive and idle axles	4		
Feed conveyor			Chain	2
Feed conveyor			Gear box	1



**Figure 13**

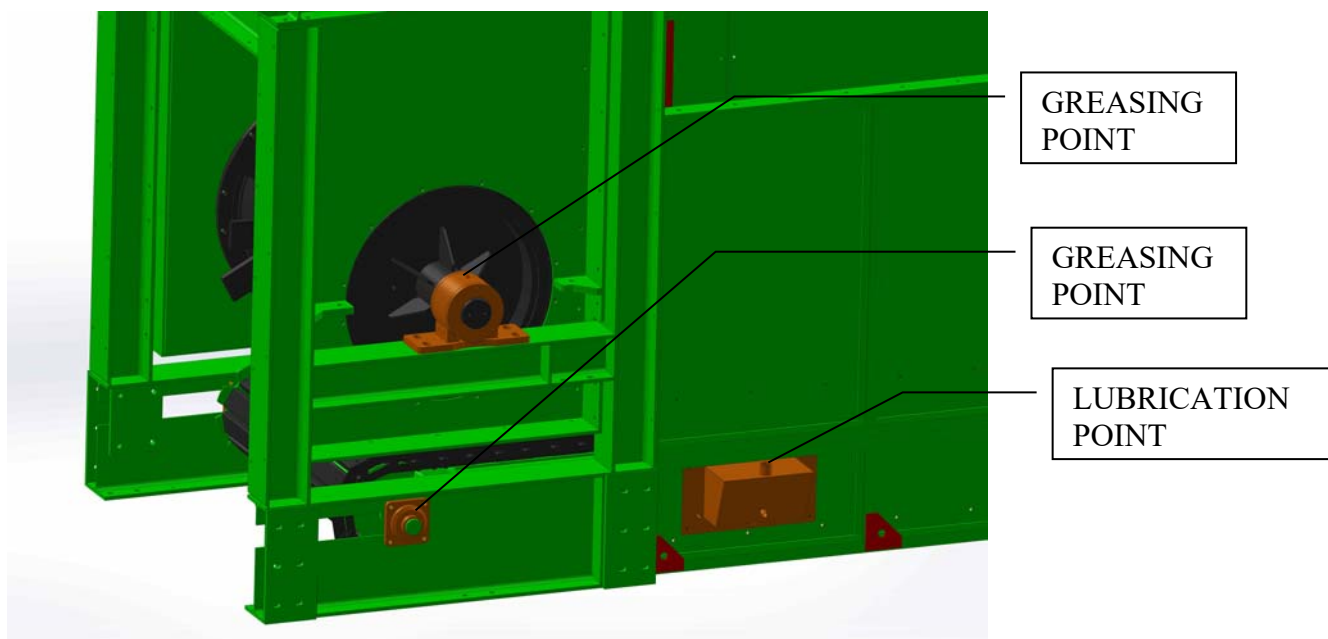


Figure 14

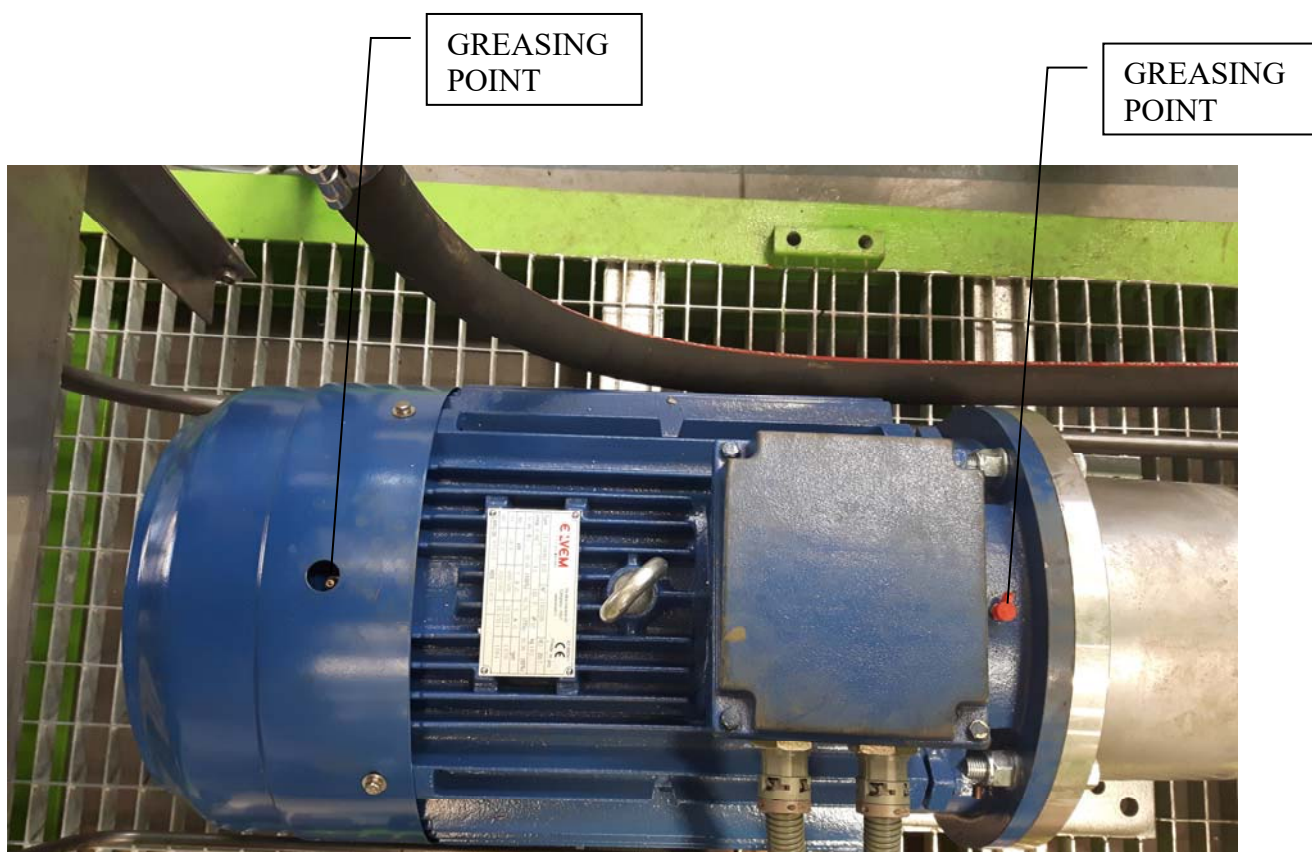
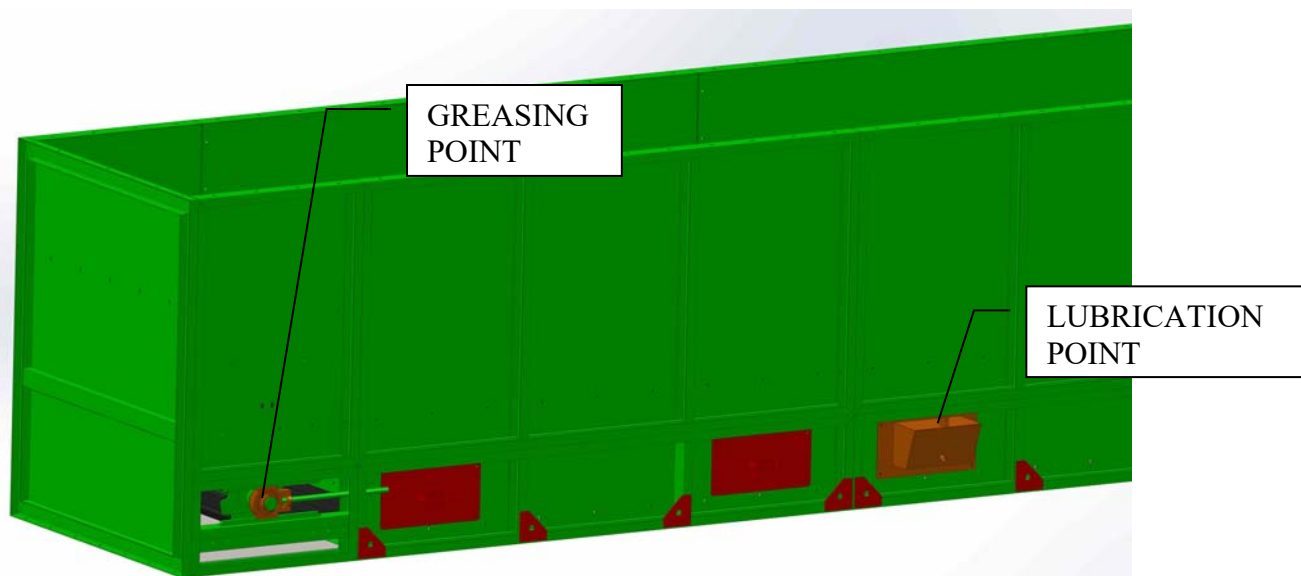
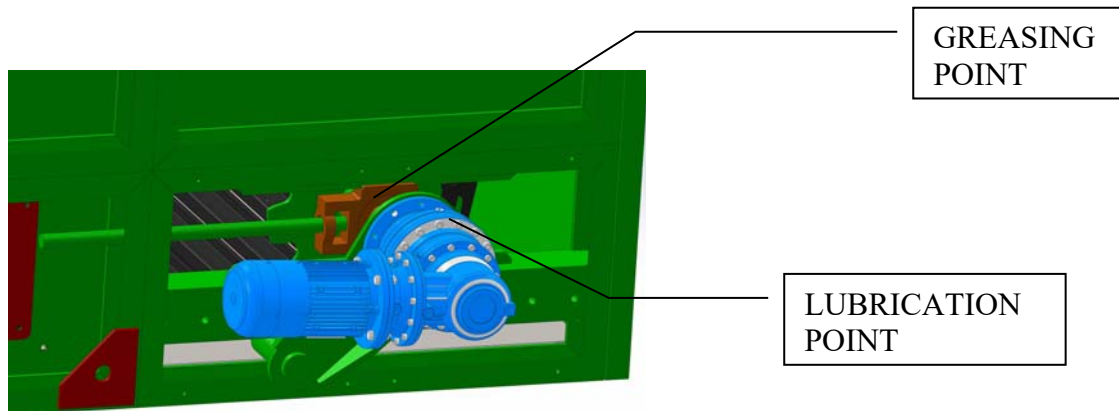


Figure 15



**Figure 16**



**Figure 17**

## LUBRICANTS TO BE USED

We recommend the following lubricants:

- Oil: IDRAN 46 or equivalent.
- Grease for bearings: Marson EPL (Fina) or equivalent.

- Gear oil: refer to the producer
- - Lubricant for chains: Mobil Vactra 4 or equivalent.

\*FOR MAINTENANCE OF GEARBOXES, REFER TO THE REQUIREMENTS OF MANUFACTURER.

TABLE 4: TIGHTENING TORQUE

**Tightening Torques - Electrically Zinc Plated - Friction Coefficient 0.125**

PROPERTY CLASS	TORQUE Ma	NOMINAL DIAMETER - COARSE THREAD																		
		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
5.6	Nm	0.56	1.28	2.50	4.3	7.1	10.5	21	36	58	88	121	171	230	295	435	590	800	1030	1340
	ft/lb	0.41	0.94	1.84	3.1	5.2	7.7	15	26	42	64	89	126	169	217	320	435	590	759	988
8.8	Nm	1.26	2.90	5.75	9.9	16.5	24	48	83	132	200	275	390	530	675	995	1350	1830	2360	3050
	ft/lb	0.94	2.14	4.24	7.3	12.1	17.7	35	61	97	147	202	287	390	497	733	995	1349	1740	2249
10.9	Nm	1.80	4.10	8.1	14	23	34	67	117	185	285	390	550	745	960	1400	1900	2580	3310	4290
	ft/lb	1.33	3.02	5.97	10.3	16.9	25	49	86.2	138	210	287	405	549	708	1032	1401	1902	2441	3163
12.9	Nm	2.15	4.95	9.70	16.5	27	40	81	140	220	340	470	660	890	1140	1680	2280	3090	3980	5150
	ft/lb	1.59	3.65	7.15	12.1	19.9	29	59	103	162	250	346	486	656	840	1239	1681	2278	2935	3798

## Annex 2 – Hydraulic diagram

