

RAMHit/Fit

Mounting, Setup and Maintenance Instructions



Summary: English version

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1 INTRODUCTION.

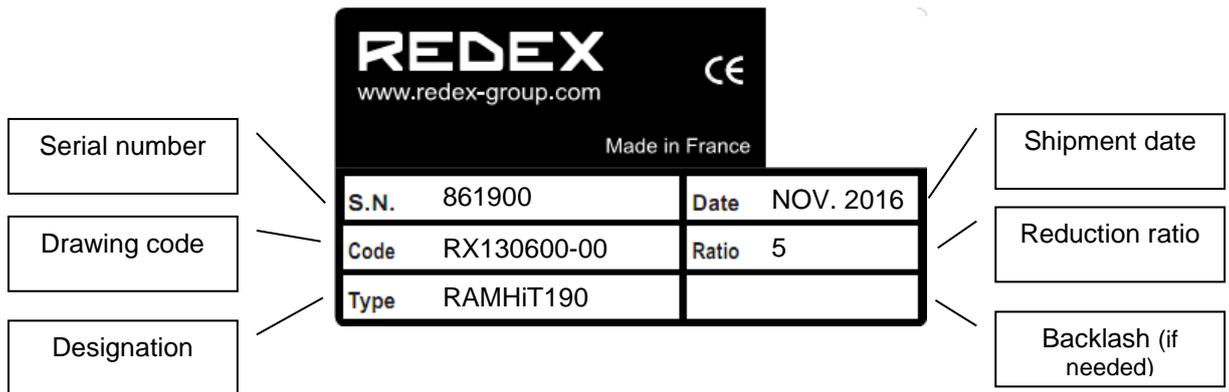
The RAM gearbox will give you complete satisfaction if all of the following mounting, operating & maintenance instructions are respected.

1.1 Warnings.

	WARNING! The RAM gear train is assembled using a special patented process of nylon thermoplastic injection. Therefore, the gearbox can only be repaired at Redex facilities. Dismounting the gearbox gear train will void the warranty.
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1.2 Gearbox identification.

Each unit can be identified through its identification plate and the serial number indicated on it. The serial number must be given for any correspondence on a particular unit.



1.3 Long term storage.

Each gearbox is delivered wrapped and greased for 1 month anti-corrosion protection. Gearboxes which are not installed shortly after receipt should be stored in a dry atmosphere with temperature between 0°C & 40°C. The unit must be filled completely with oil for storage.

2 INTERFACES.

2.1 Outline and mounting interfaces.

2.1.1 Hit version.

SIZE	Outline drawing	Mounting drawing	Update
190	RX130502-00	RX130502-01	-
	RX131629-00	RX131629-01	New design
220	RX130381-00	RX130381-01	New design
250	RX130836-00	RX130836-01	-
	RX131645-00	RX131645-01	-
	RX131627-00	RX131627-01	New design
280	RX130457-00	RX130457-01	New design
350	RX130458-00	RX130458-01	-
	RX131630-00	RX131630-01	-
	RX133351-00	RX133351-01	New design

2.1.2 Fit version.

SIZE	Outline drawing	Mounting drawing
190	RX133455-00	RX133455-01
220	RX133816-00	RX133816-01
250	-	-
280	-	-
350	-	-

2.2 General interfaces.

Please refer to general catalogue or specific drawing provided for your application by your Redex local agent.

2.3 Weight.

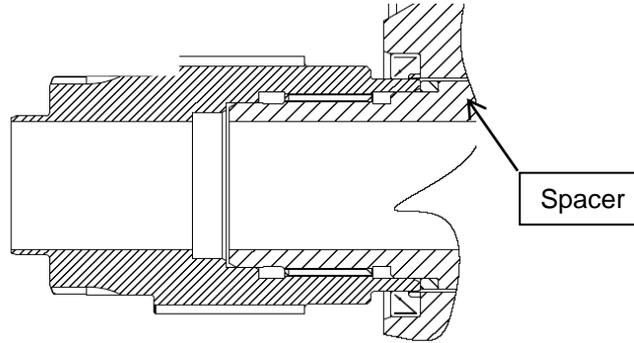
SIZE	Weight (kg)
190	23
220	35
250	48
280	78
350	128

3 MOUNTING PROCEDURE.

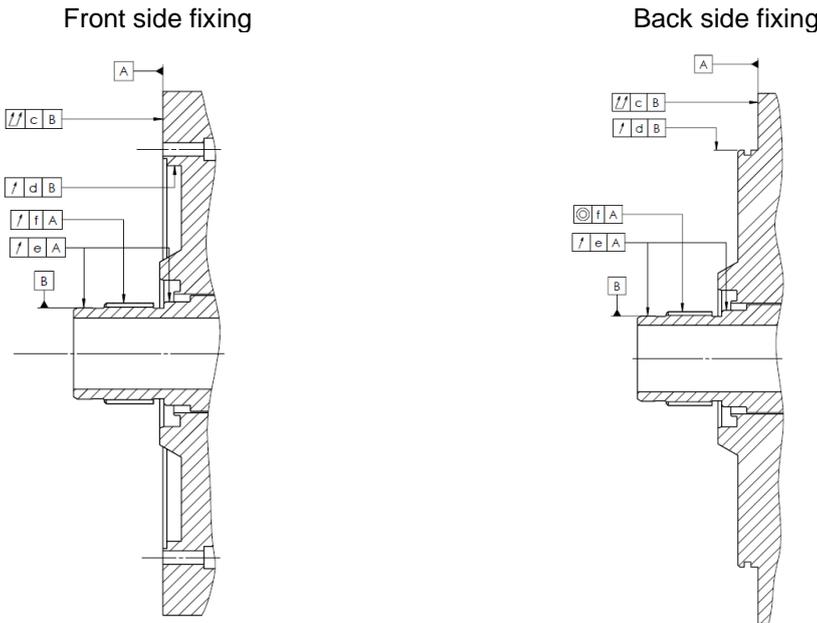
3.1 Mounting of the RAMHiT onto the motor.(For Hit version only)



WARNING! Before mounting input sun gear onto the motor shaft, you have to determine spacer thickness to respect internal axial clearance of the gearbox.



3.1.1 Checking dimensions and run out of the motor shaft.



Note : this operation must be done motor vertical axis.

SIZE	c	d	e	f
190	0.010	0.015	0.010	0.025
220	0.010	0.015	0.010	0.025
250	0.010	0.015	0.010	0.030
280	0.015	0.02	0.015	0.035
350	0.015	0.02	0.015	0.035

3.1.2 Definition of input sun gear spacer thickness.



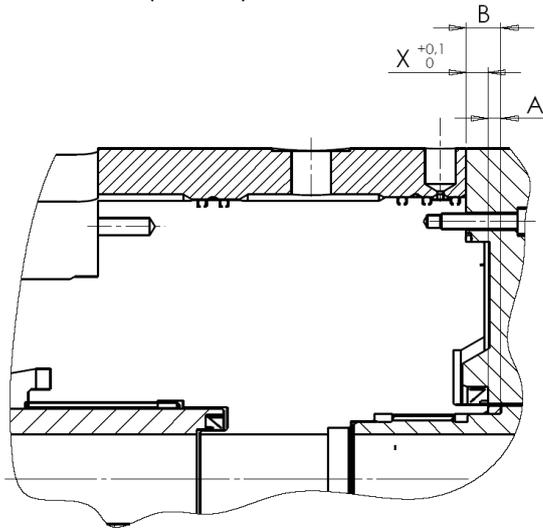
3.1.2.1 Front side fixing mounting.

1. Measure the dimensions B to calculate the spacer thickness value A.

$$A_{\text{maxi}} = B - X$$

Formula:

$$A_{\text{mini}} = B - (X + 0.1)$$



SIZE	X
190	8
220	8.5
250	9
280	3
350	14.5

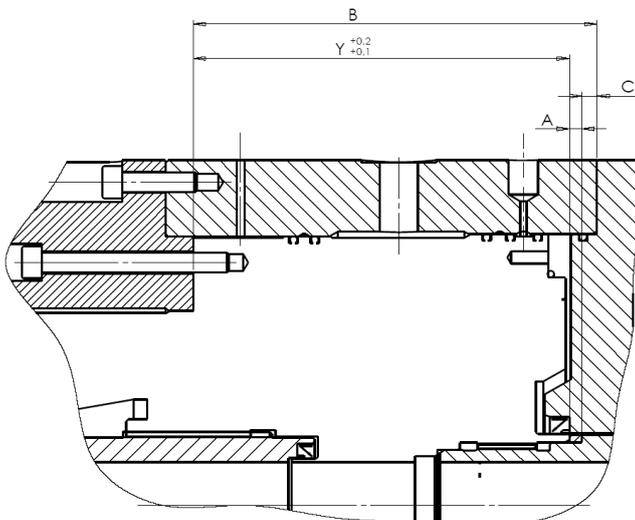
3.1.2.2 Back side fixing mounting.

1. Measure the dimensions B and C to calculate the spacer value A.

Formula:

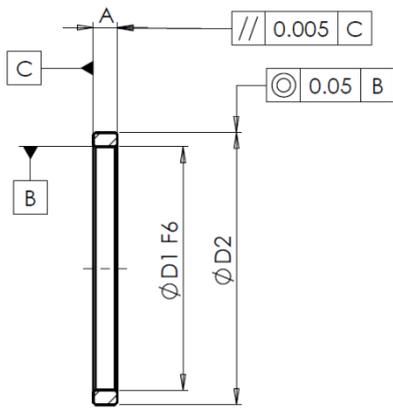
$$A_{\text{maxi}} = B - C - (Y + 0.1)$$

$$A_{\text{mini}} = B - C - (Y + 0.2)$$



SIZE	Y
190	129.5
220	151
250	164.5
280	193
350	256.5

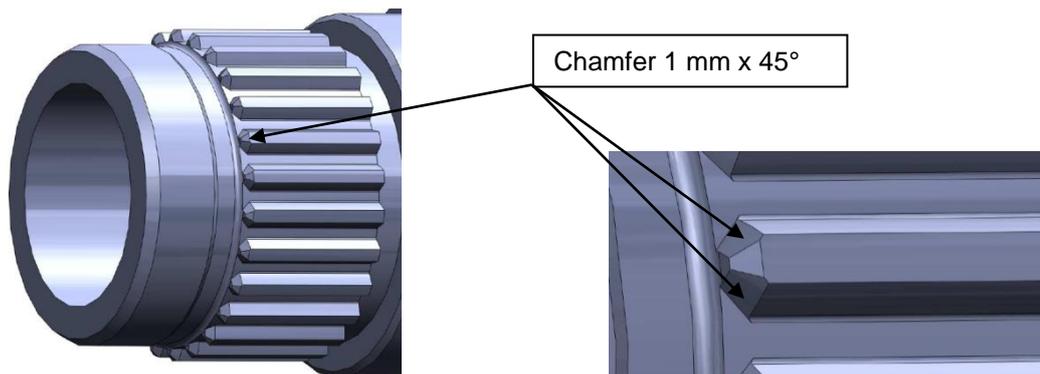
3.1.3 Spacer manufacturing.



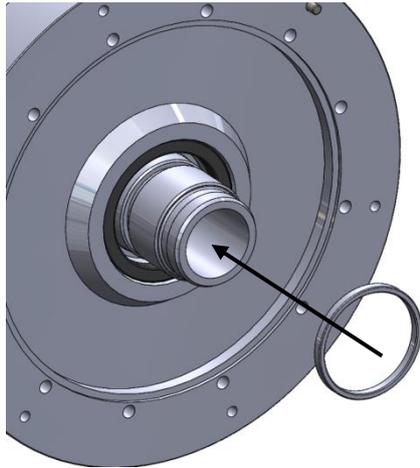
SIZE	$\varnothing D1 F6$	$\varnothing D2$
190	46	51
220	51	57
250	60	69
280	63	71
350	85	94

3.1.4 Mounting of the input sun gear on the motor.

1. Check that all motor shaft teeth are chamfered.



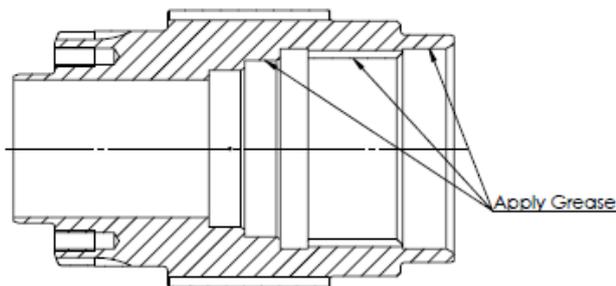
2. Mount the spacer on the motor shaft shoulder



3. Mount the motor leap seal on the motor flange housing



4. Grease all external surfaces of the motor shaft (use KLUBERPASTE 46 MR 401 or FAG Montage paste ARCANOL).
5. Grease the sun gear (use KLUBERPASTE 46 MR 401 or FAG Montage paste ARCANOL).



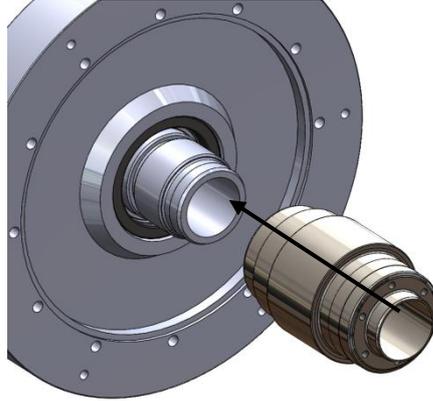
- Heat up the sun gear to 100°C maximum (check temperature with sensor).



WARNING!

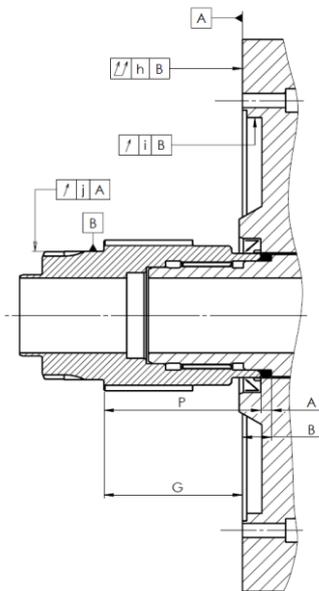
The sun gear temperature has to be respected to insure correct mounting onto motor shaft

- Mount the sun gear onto the motor shaft and make sure the contact between the sun gear and the spacer on the motor shaft shoulder occurs.

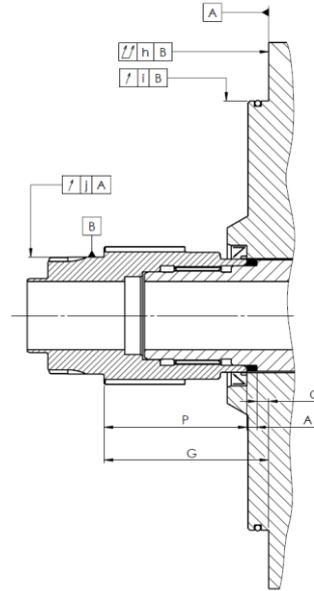


8. Check all the dimensions and run out.

Front side fixing



Back side fixing



Note : this operation must be done motor vertical axis.

SIZE	h	i	j	Pmin	Pmax
190	0.015	0.020	0.015	59.8	59.85
220	0.015	0.020	0.015	72.3	72.35
250	0.015	0.020	0.015	78.3	78.35
280	0.020	0.025	0.020	95.8	95.85
350	0.020	0.025	0.020	120.3	120.35

8.1 gear position.

Measure "G" dimension to check correct sun



For front side fixing:

$$G_{min} = A + P_{min} - B$$

$$G_{max} = A + P_{max} - B$$

Note: "A" and "B" dimensions are measured and manufactured on chapter 3.1.2.1.



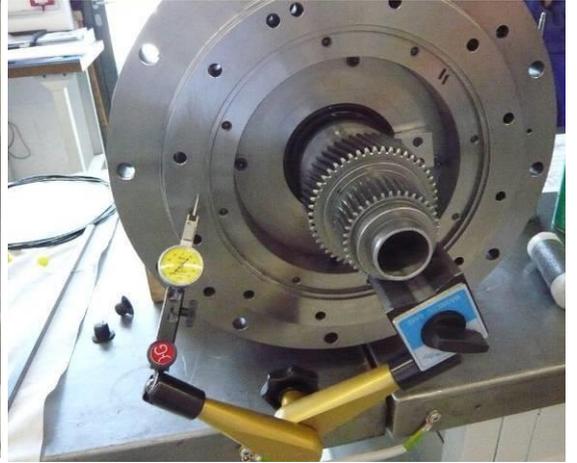
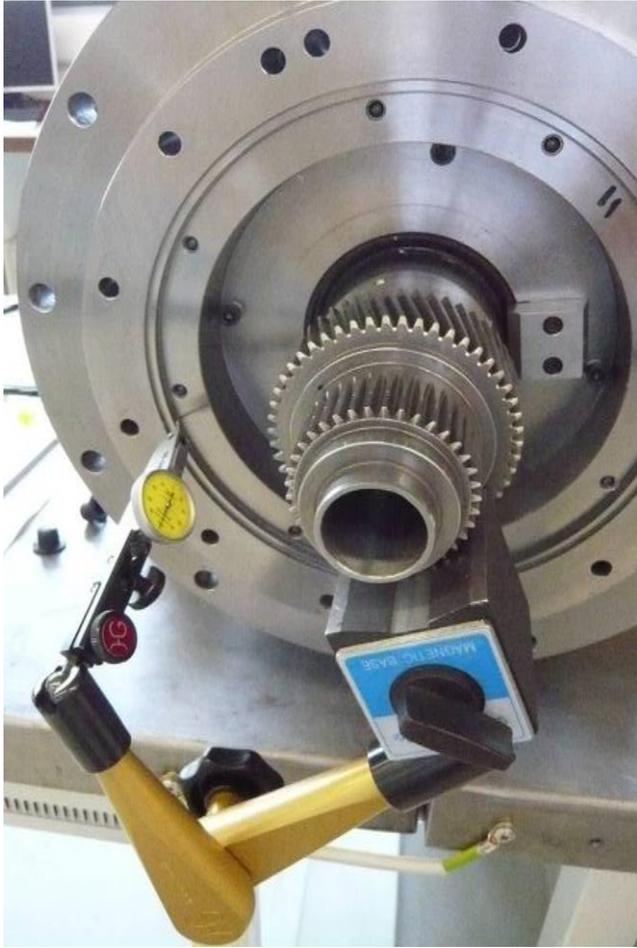
For Back side fixing:

$$G_{min} = A + P_{min} + C$$

$$G_{max} = A + P_{max} + C$$

Note: "A" and "C" dimensions are measured and manufactured on chapter 3.1.2.2.

"C" could positive or negative according the customer design.



3.1.5 Mounting of the RAMHit onto the motor.

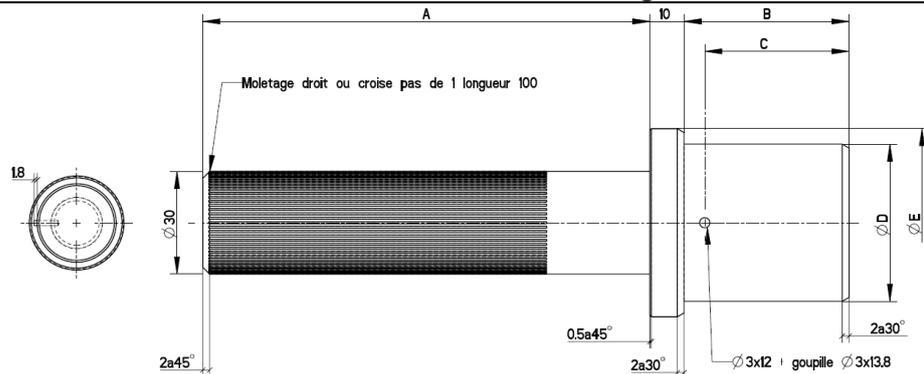


WARNING!

For this operation you have to check if the slide dog is in reduction ratio position. To move the slide dog, you must use hydraulic unit or hydraulic hand pump.

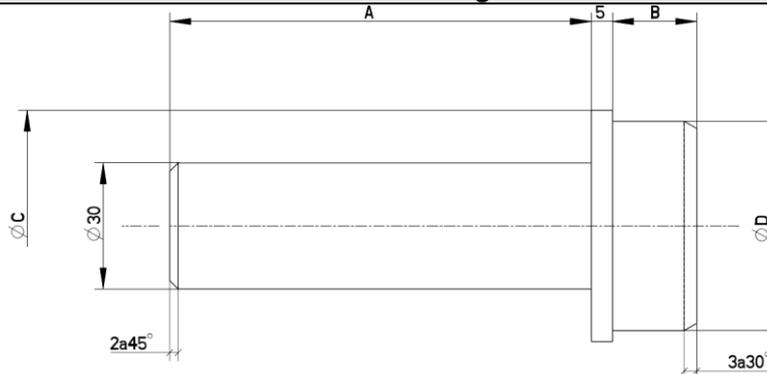
1. Prepare all additional seals, parts and tools for their mounting

Tool 1: to rotate the slide dog



SIZE	A	B	C	Ø D	Ø E	Ref
190	130	48	42	45.9 f6	55	MO14529
220	145	55	49	55.9 f6	65	MO14542
250	145	60	52	60.9 f6	65	MO14544
280	160	70	62	70.9 f6	75	MO14546
350	190	85	77	85.9 f6	90	MO14641

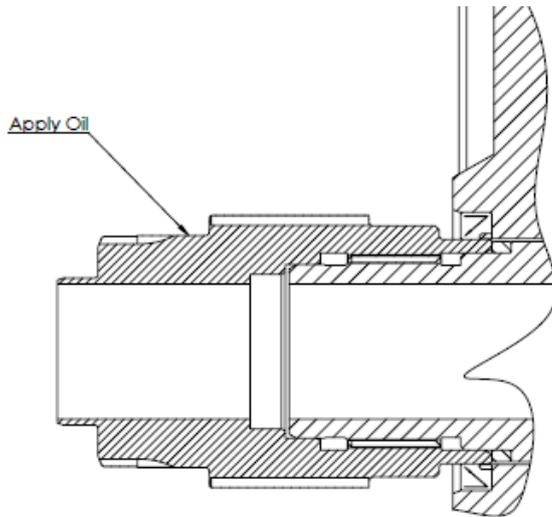
Tool 2: to heat the bearing inner race



SIZE	A	B	Ø C	Ø D +/-0.05	Ref
190	100	20	55	49.8	MO14528
220	115	22	65	59.8	MO14541
250	120	22	71.5	64.8	MO14543
280	130	24	82	74.8	MO14545
350	150	28	100	89.8	MO14640

Note: Tool #2 must be done in steel

2. Lubricate all sun gear surfaces with recommended oil.



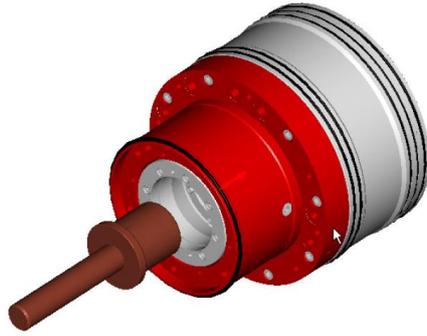
3. Check that the slide dog is in "reduction ratio" position.
4. Mount the O-ring onto the RAM input pilot diameter.



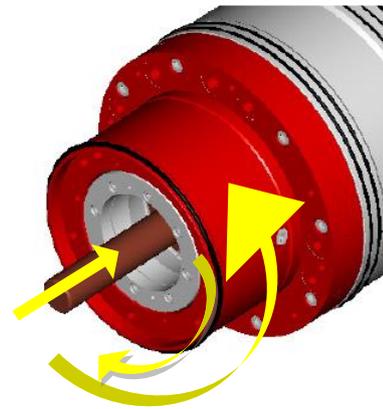
5. Use the tool 2, previously heated at 100°C, to heat the inner race of the gearbox central bearing (minimum 3 minutes).



6. Mount the tool 1 into the slide dog and check the good rotation of the system.



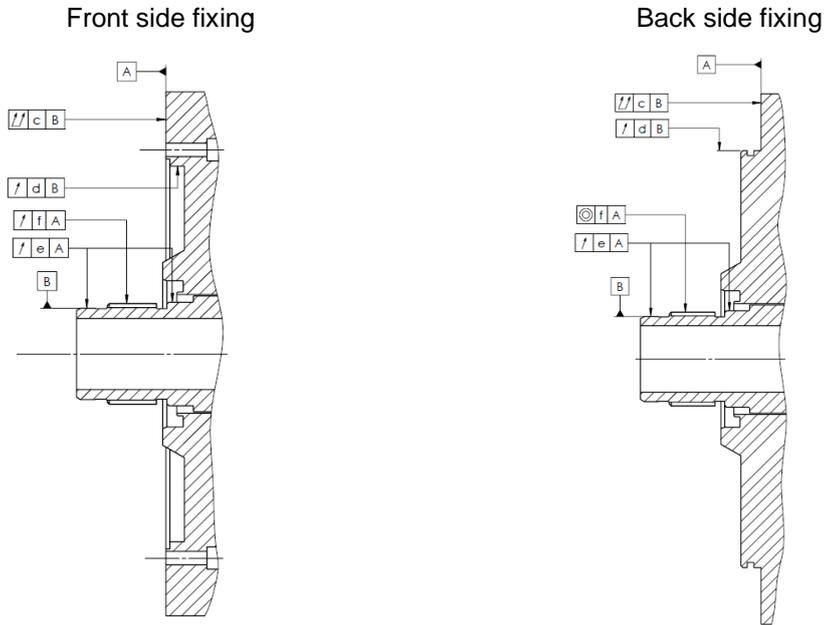
7. Place the motor horizontally.
8. While bringing the RAM onto the motor, oscillate the slide dog to get a proper tooth engagement between input sun gear and planet gears (use tool 1).



9. Tighten the motor screws.

3.2 Mounting of the RAMFiT onto the motor.(For Fit version only)

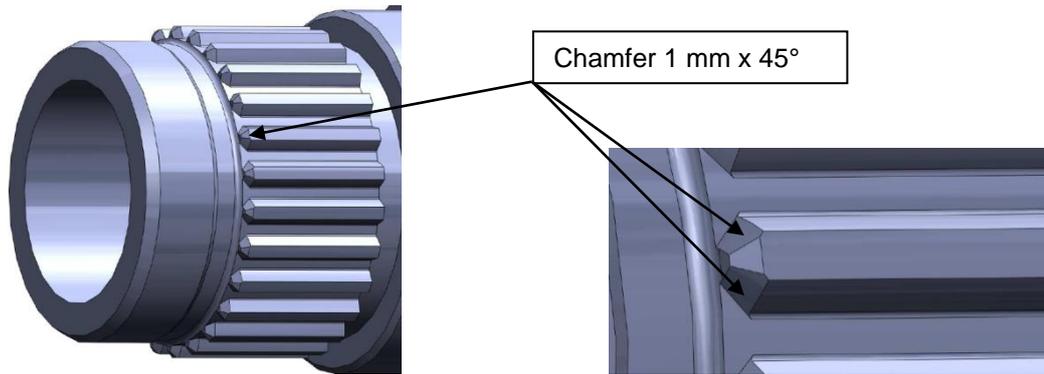
3.2.1 Checking dimensions and run out of the motor shaft.



Note : this operation must be done motor vertical axis.

SIZE	c	d	e	f
190	0.010	0.015	0.010	0.025
220	0.010	0.015	0.010	0.025
250	0.010	0.015	0.010	0.030
280	0.015	0.02	0.015	0.035
350	0.015	0.02	0.015	0.035

3.2.2 Checking that all motor shaft teeth are chamfered.



3.2.3 Grease all external surfaces.

Grease all external surfaces of the motor shaft (use KLUBERPASTE 46 MR 401 or FAG Montage paste ARCANOL).



3.2.4 Mounting of the RAMFit onto the motor.

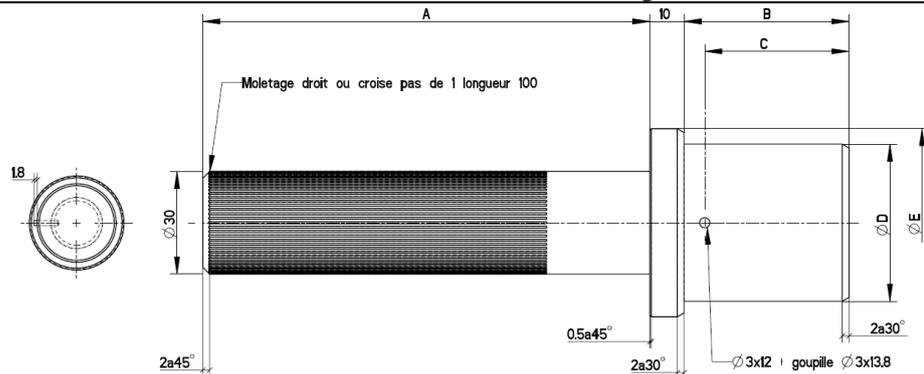


WARNING!

For this operation you have to check if the slide dog is in reduction ratio position. To move the slide dog, you must use hydraulic unit or hydraulic hand pump.

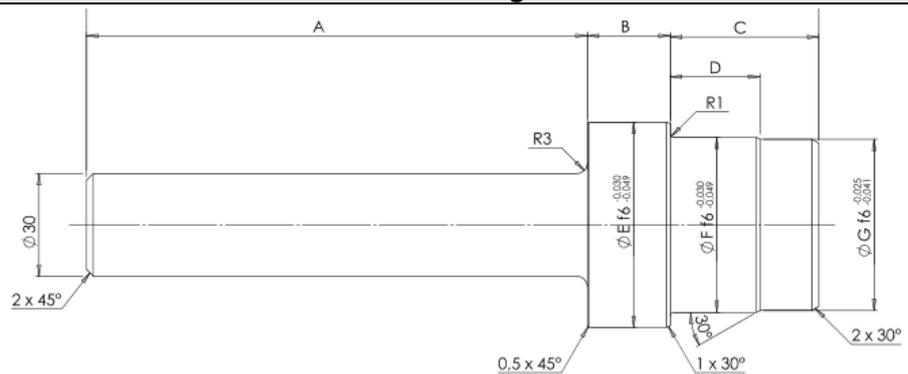
1. Prepare all additional seals, parts and tools for their mounting

Tool 1: to rotate the slide dog



SIZE	A	B	C	Ø D	Ø E	Ref
190	130	48	42	45.9 f6	55	MO14529
220	145	55	49	55.9 f6	65	MO14542
250	145	60	52	60.9 f6	65	MO14544
280	160	70	62	70.9 f6	75	MO14546
350	190	85	77	85.9 f6	90	MO14641

Tool 2: to heat the bearing inner race



SIZE	A	B	C	D	Ø E	Ø F	Ø G	Ref
190	100	18	33	20	45.9	41	38.9	MO16172-00
220	115	13	40	25	50.9	46	44.9	MO16168-00
250	145	24	43	26	59.9	51	49.9	MO15826-00
280	145	16	55	36	62.9	56	54.9	MO16173-00
350	145	15	62	39	84.9	76	74.9	MO16174-00

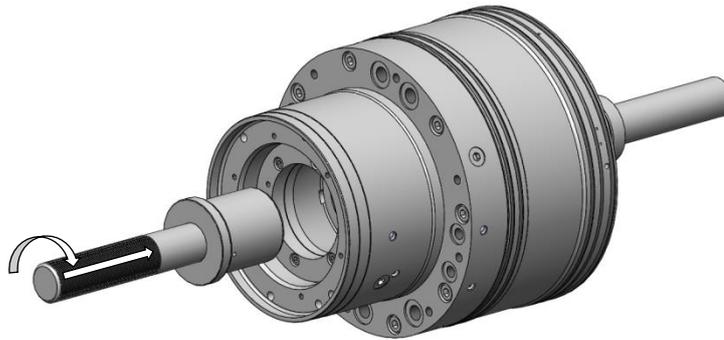
Note: Tool #2 must be done in steel

1. Check that the slide dog is in "reduction ratio" position.

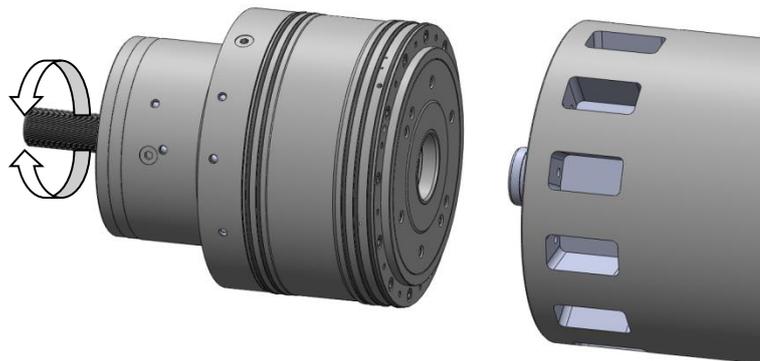
2. Place the motor horizontally.
3. Use the tool 2, previously heated at 100°C, to heat the input sun gear of the gearbox (minimum 3 minutes).



4. Mount the tool 1 into the slide dog and check the good rotation of the system.



5. Remove the tool 2 and bring the RAM onto the motor, oscillate the output shaft (use tool 1) to get a proper tooth engagement between motor shaft and input sun gear.



6. Tighten the motor screws

3.3 Mounting of the water jacket onto the RAM.



1. Prepare all additional seals, parts and tools for their mounting.
2. Check the diameters required for the interface water jacket / RAM.
3. Mount all O-ring seals into the RAM grooves and grease them.



4. Place the motor and RAM vertically.
5. Keep the motor and RAM sub-assembly vertically to mount the water jacket onto them.



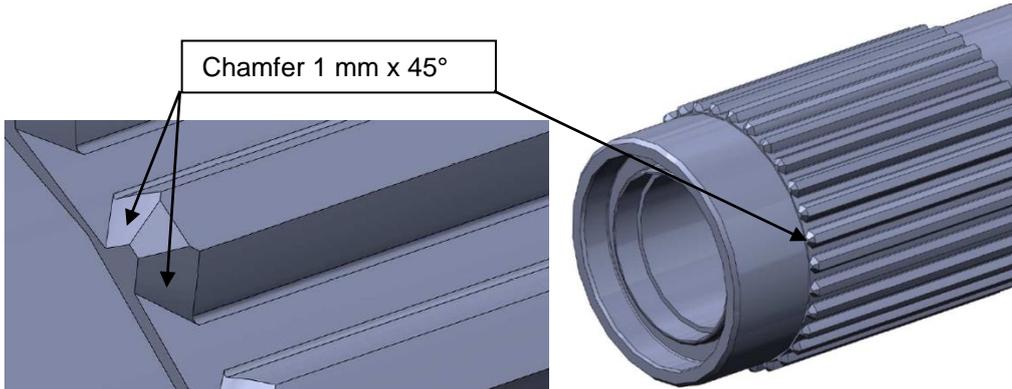
6. Fix the water jacket with screws.
7. Check that the cooling circuit has no leakage.

3.4 Mounting of the spindle onto the RAM.



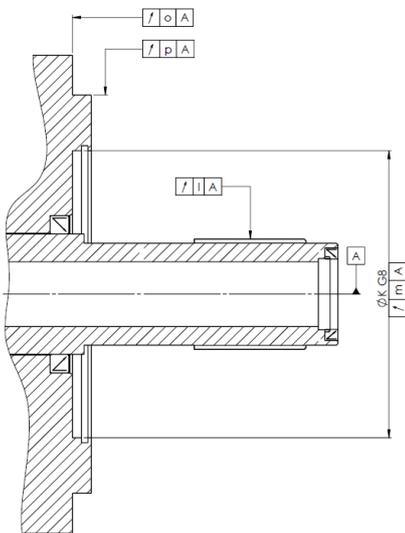
WARNING!
For this operation you have to check if the slide dog is in direct ratio position.
To move the slide dog, you must using hydraulic unit or hydraulic hand pump.

1. Prepare all additional seals, parts and tools for their mounting.
2. Check that all spindle shaft tooth are chamfered.

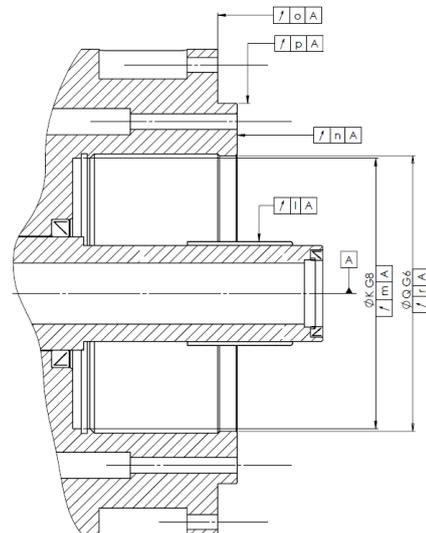


3. Check all the dimensions and run out.

Front side fixing



Back side fixing



Note: this operation must be done motor vertical axis

SIZE	ØK	ØQ	l	m	n	o	p	r
190	134	137	0.025	0.020	0.010	0.010	0.015	0.015
220	155	158	0.030	0.020	0.010	0.010	0.015	0.015
250	176	180	0.030	0.020	0.010	0.010	0.015	0.015
280	198	202	0.030	0.030	0.015	0.015	0.020	0.020
350	245	240	0.030	0.030	0.015	0.015	0.020	0.020

4. Insert and grease the O-ring seal onto the spindle.
5. Apply oil on the spindle splines. Oil used must be the same as gearbox lubrication.



6. Apply grease on the central lip seal. Grease used must be compatible with gearbox oil lubrication.



7. Check that the slide dog is in "direct ratio" position
8. Keep the motor and RAM sub-assembly vertically to mount the spindle onto them.



9. While bringing the spindle onto the gearbox and motor, oscillate the spindle shaft to find a proper teeth orientation for the introduction of the spindle shaft into the slide-dog.
10. Fix the spindle on the RAM with screws.

4 SPEED CHANGE CONTROL.

The speed change occurs with hydraulic actuator. The connections are the same for vertical, horizontal or swivelling mode.

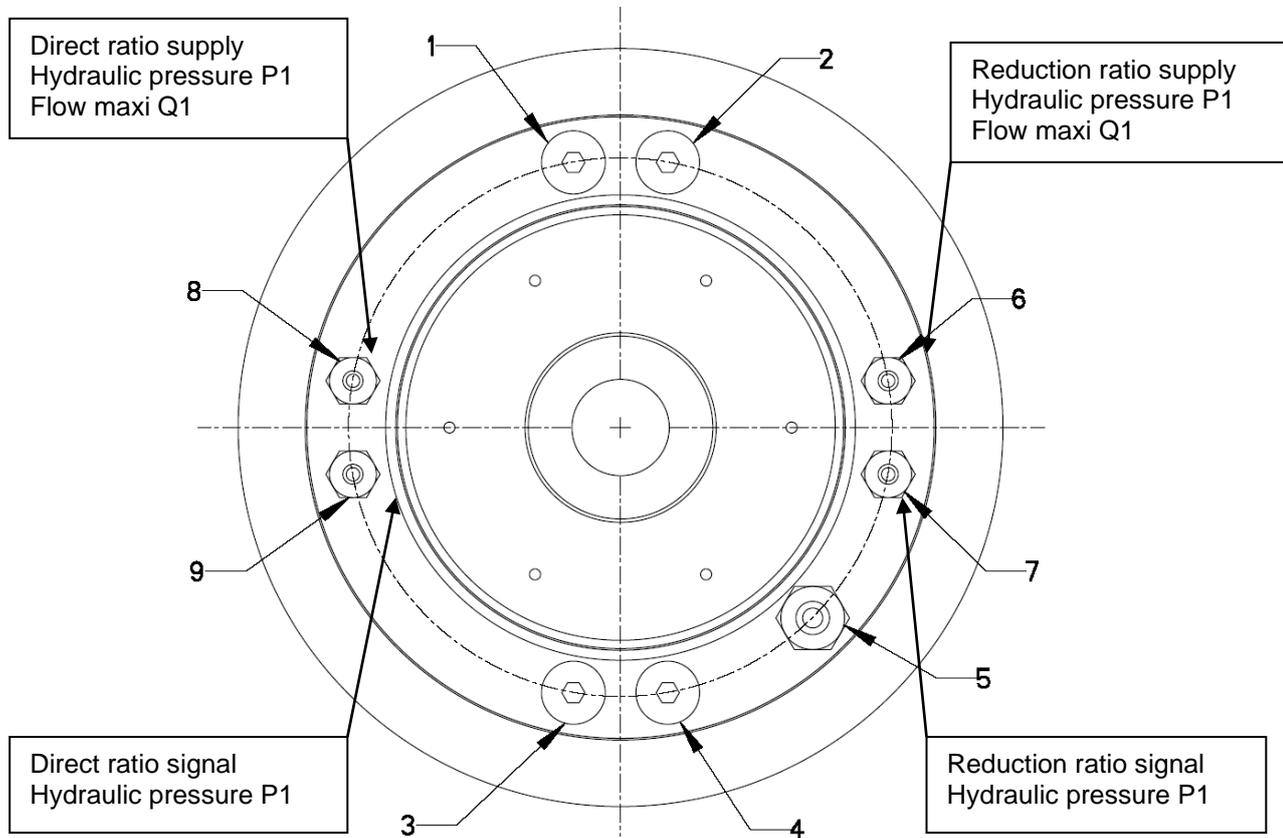
4.1 Recommended oils.

The speed change shall occur with oil, with 15 to 32 Cst @ 40°C viscosity and maximum filtration of 10 µm absolute.

We recommend the following oils (Not exhaustive list, for other types, consult us):

Trademark	Type	Reference
CASTROL	PAO	Alphasyn T15 and T32
MOBIL	PAO	SHC 624
	Mineral	DTE 10 Excel 22 or 32
	Mineral	DTE 22 or 24
SHELL	Mineral	TELLUS S22 and 32
LUBCON	PAO	TURMOSYNTH OIL 22 and 32

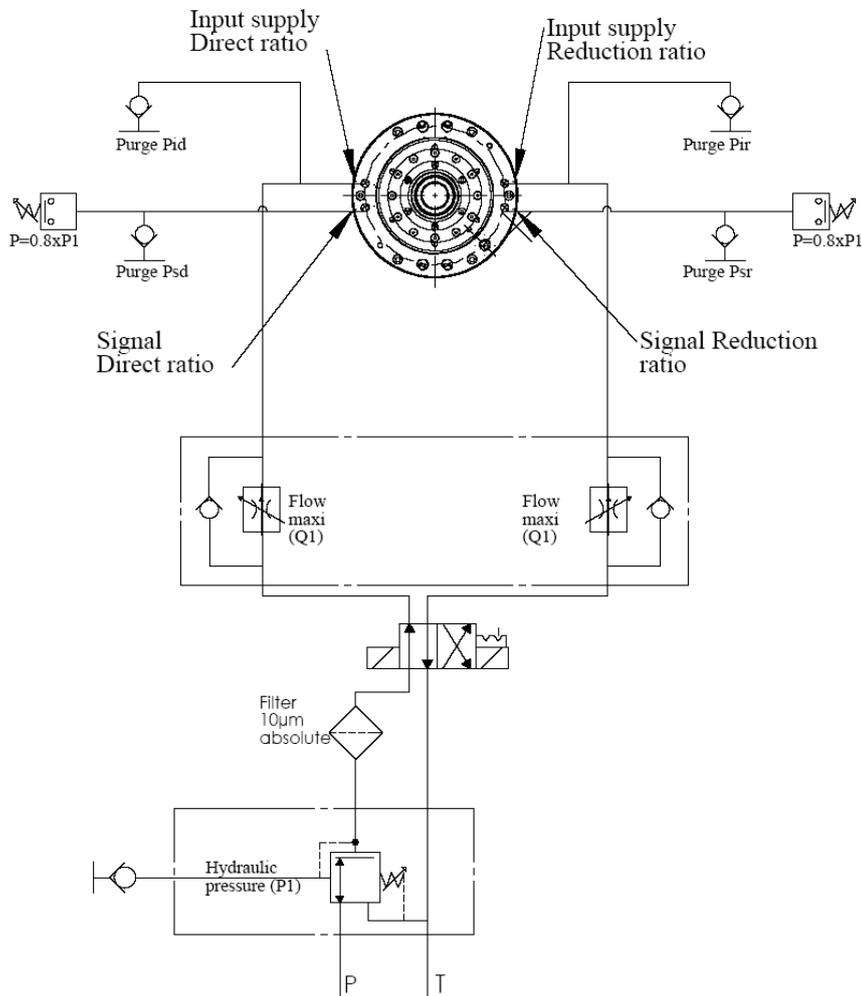
4.2 Principle.



SIZE	Hydraulic pressure P1 (bar)	Flow Q1 (l/min)	Supply hole thread	Signal hole thread
190	50 to 100	5 to 7	1/8" Gaz	1/8" Gaz
220	50 to 100	5 to 7	1/8" Gaz	1/8" Gaz
250	50 to 100	8 to 10	1/8" Gaz	1/8" Gaz
280	50 to 100	8 to 10	1/4" Gaz	1/4" Gaz
350	50 to 100	8 to 10	1/4" Gaz	1/4" Gaz

4.3 Hydraulic diagram.

Pid means Purge Input Direct ratio
 Psd means Purge Signal Direct ratio
 Pir means Purge Input Reduction ratio
 Psr means Purge Signal Reduction ratio



WARNING!

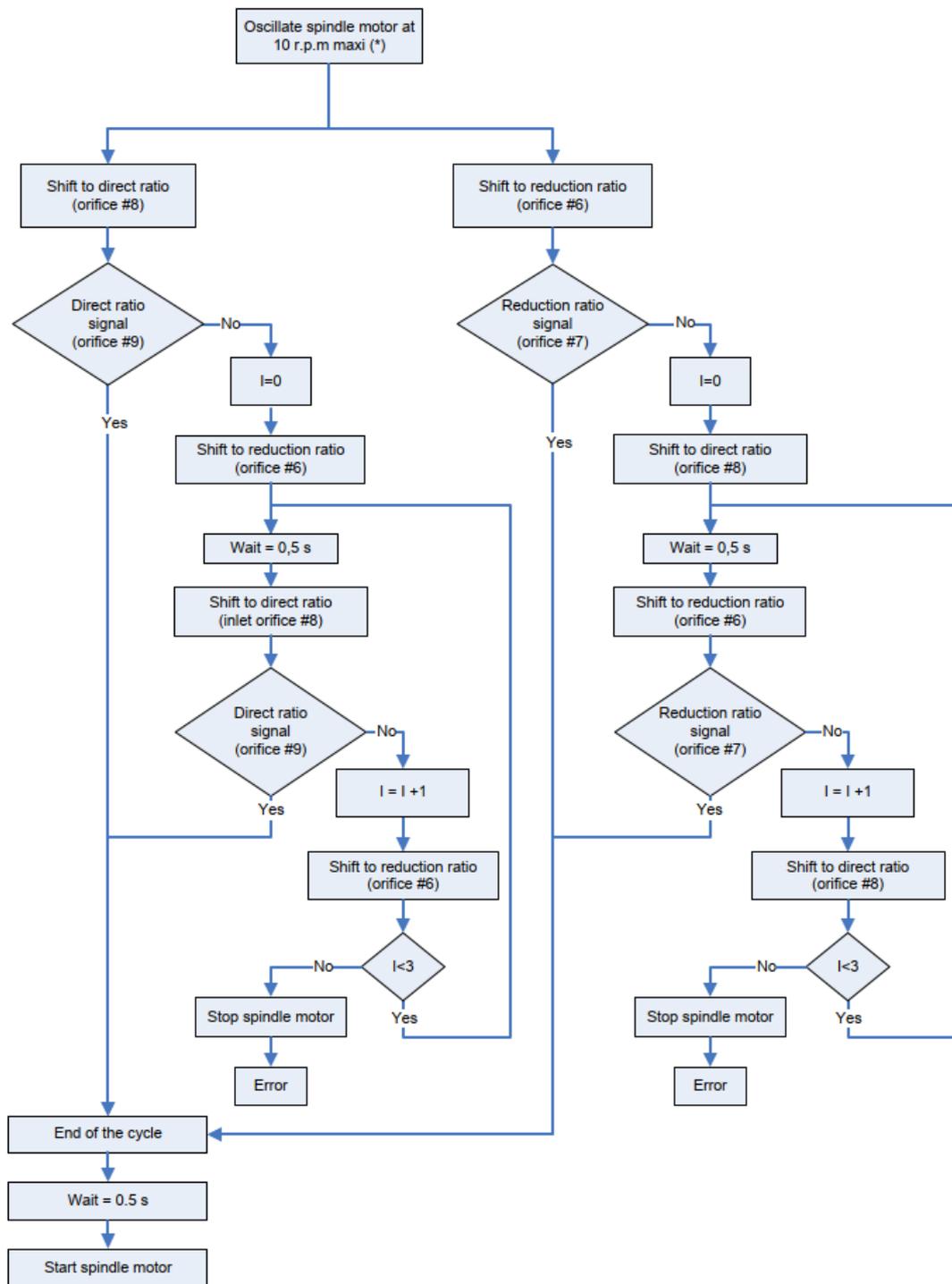
The speed change pressure must be maintained while the gearbox is running.



WARNING!

All signal circuit must be realized in stiff element, hydraulic hose are forbidden

4.4 Speed change algorithm.



WARNING!

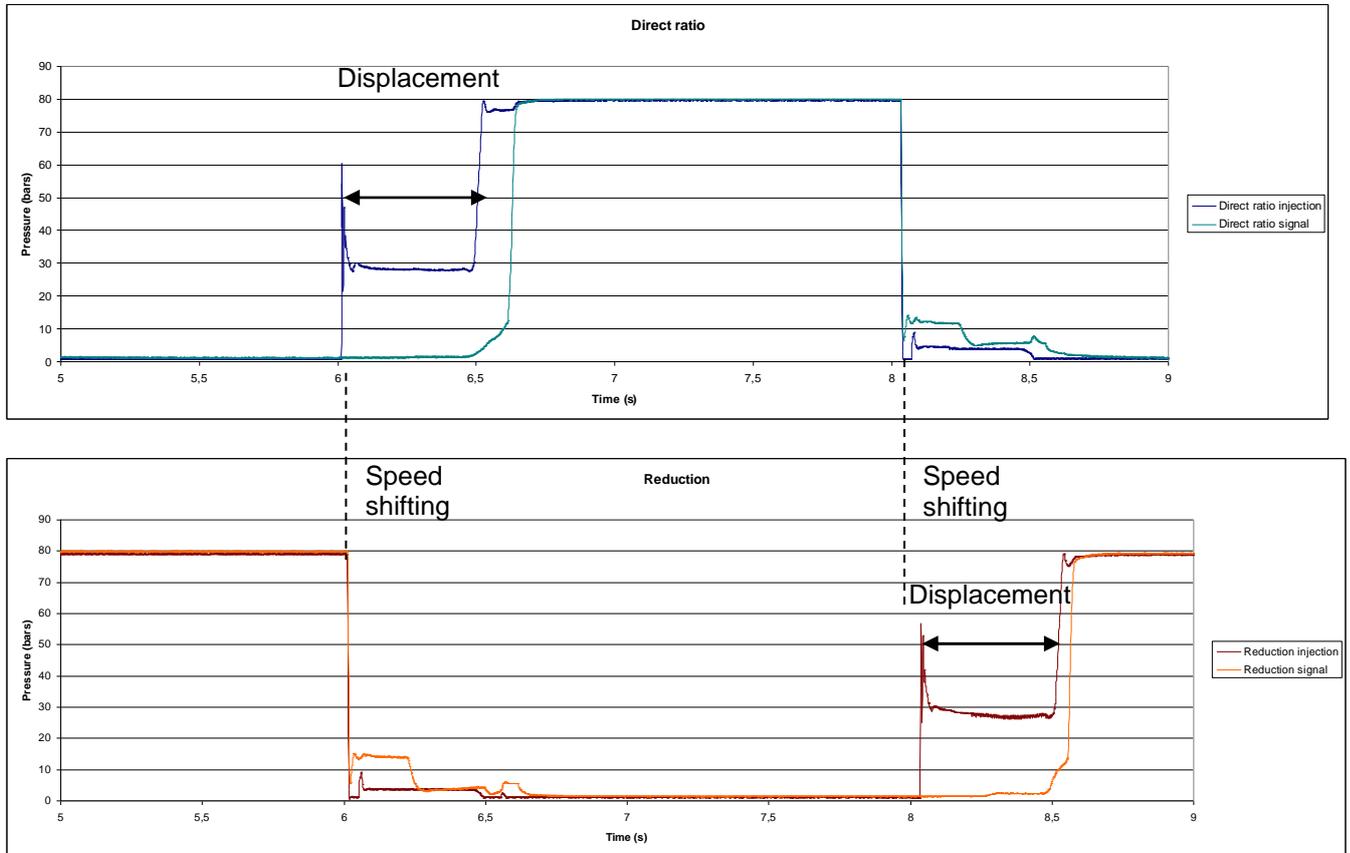
(*) Oscillating the spindle motor with 2 reversals of +/-10 degrees per second. Redex will be not responsible for any damage caused by a wrong speed change procedure.



WARNING!

If the pressure sensor signal is not going on, increasing the speed of the main motor should be strictly prohibited and prevented.

4.5 Speed shifting graphic.

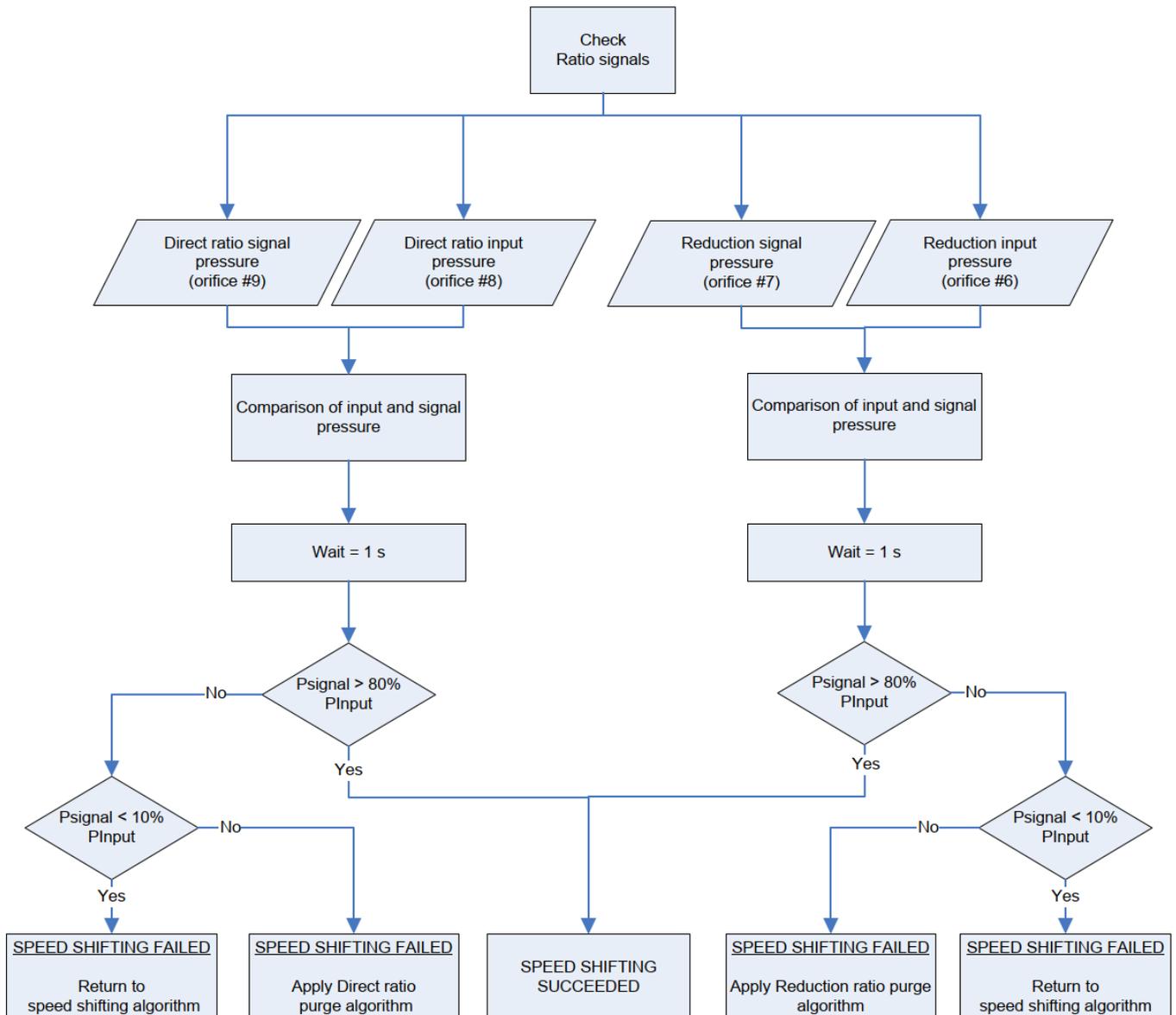


Test conditions:
Test made with RAMhit358
Pressure = 80 bars
Flow rate = 8.5 L/min

4.6 Speed shifting signal.

We consider that the signal is on when the signal pressure is over 80% of the supply pressure.

<i>Supply pressure (bar)</i>	<i>Minimun signal pressure (bar)</i>
50	40
60	48
70	56
80	64
90	72
100	80



4.7 Purge procedure.



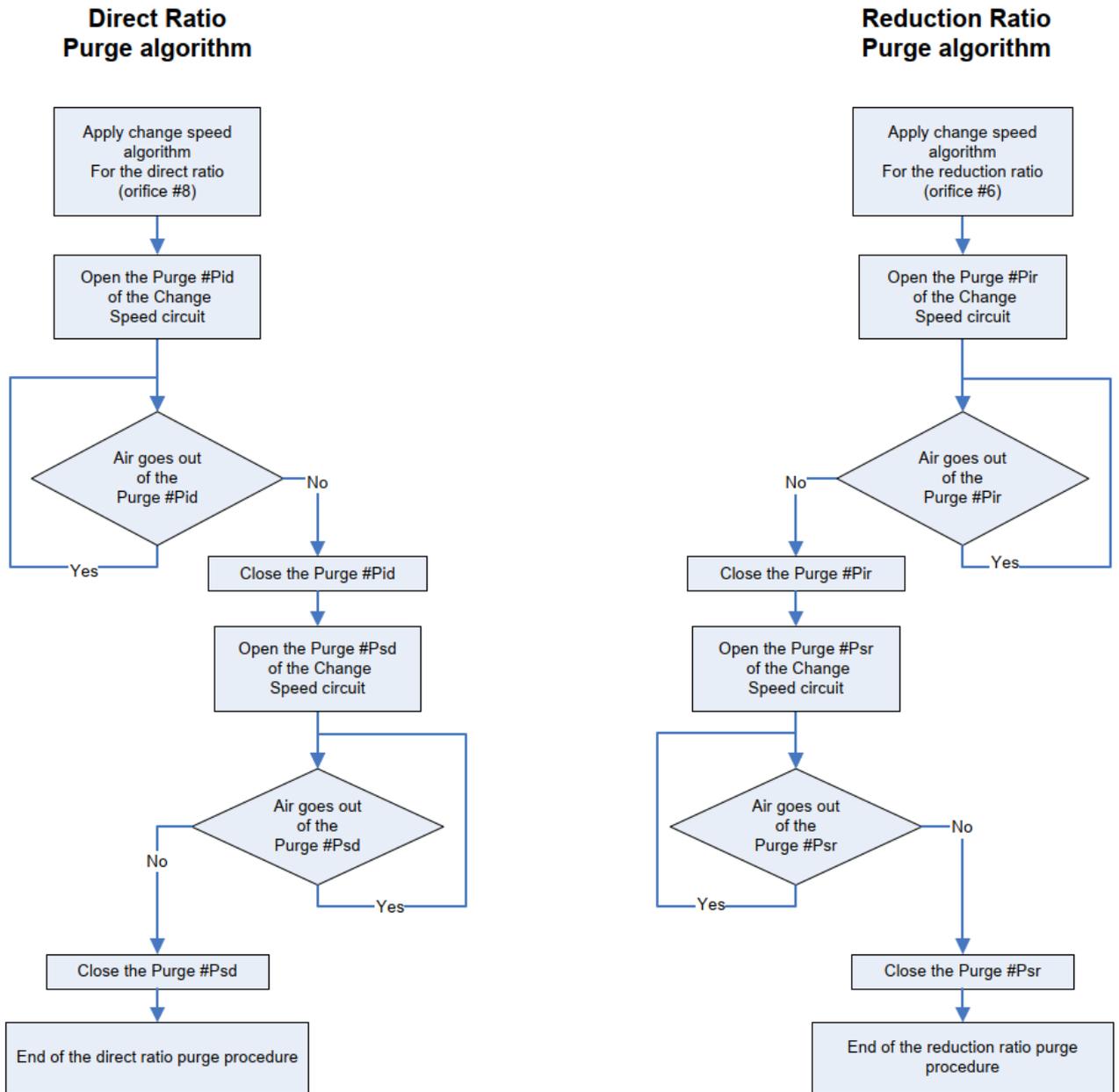
WARNING!

During the purge procedure the motor must be connected to the power supply of the CNC. To follow the purge procedure, the speed change procedure must have previously been programmed in the CNC. **The hydraulic oil flow must be 0.5l/min maximum and the pressure must be 50bar.**

To purge hydraulic circuit, we recommend to use PARKER fittings or equivalent.

Fitting reference EMA1	Flexible reference SMA1	Reference EMA3	Flexible reference SMA3

4.7.1 Purge algorithm.



In case of dysfunction of the speed changer or signal detection, do not hesitate to remake the purge procedure.

4.8 Hydraulic pressure monitor.

We recommend the following electronic pressure monitors for the speed change.

Size	Analogue output 0 - 10 V monitor		Analogue output 0 - 20 mA monitor 4 - 20 mA monitor		2 Switching output 2 normally open switch	
	Trademark	Reference	Trademark	Reference	Trademark	Reference
190	IFM	PT9541	IFM	PT3541	IFM	PK7522
220		PT9541		PT3541		PK7522
250		PT9541		PT3541		PK7522
280		PT9541		PT3541		PK7522
350		PT9541		PT3541		PK7522

5 LUBRICATION.

5.1 Recommended lubricants.

	WARNING! RAM hit is supplied WITHOUT OIL RAM hit is designed for Dry Sump Lubrication
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We advise using oil, with a viscosity of 15 to 32 cSt @ 40°C and maximum filtration of 50µm absolute.

Oil type recommendation:

- o Mineral oil – CLP gear oil according to DIN 51517
- o Polyalphaolefin oil – CLP HC according to DIN 51517

We recommend the following trademark lubricants (Not exhaustive list, for other types, consult us):

Trademark	Type	Reference
CASTROL	PAO	Alphasyn T15 and T32
MOBIL	PAO	SHC 624
	Mineral	DTE 10 Excel 22 or 32
	Mineral	DTE 22 or 24
SHELL	Mineral	TELLUS S22 and 32
LUBCON	PAO	TURMOSYNTH OIL 22 and 32

Nota:

The life expectancy of mineral oil is shorter than Polyalphaolefin oil.

We recommend changing oil after maximum **7500 or 10000 hours** depending of the running conditions with PAO synthetic oils, and after **5000 hours** with mineral oil.

5.2 Oil temperature settings.

We recommend using an oil chiller system.

For information, to avoid condensation most of the time oil temperature is regulated 2 to 5°C upper ambient temperature. We draw your attention to the fact than if the oil temperature injection is too low, the oil viscosity will be high and pump size must be adapted.

5.3 Pumps.

We recommend using gear pumps types. Such pumps can sustain sucking a mix of air and oil without any problem.

In case of vertical mounting with a pump placed at the top of the RAM, we recommend checking the suction capacity of the pump.

The maximum oil temperature rise (gap between outlet and inlet) could be 10°C maximum for all size.

Oil inlet flow rates.

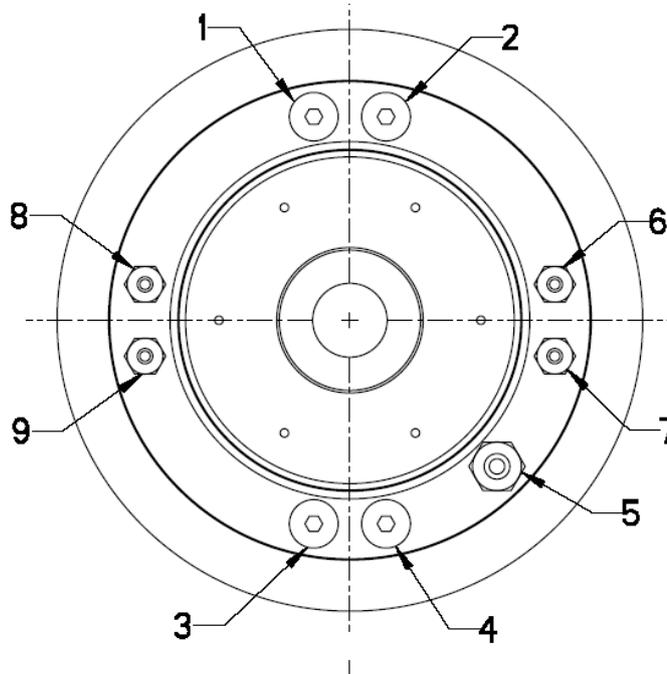
Size	Inlet oil Flow Q2 (l/min +/-5%)	Nominal pressure (bar) at 15 cSt (*)	Maximal pressure (bar)(*)	Power losses (Kw)
190	1.5	1.5 to 3	6	0.48
220	2	1.5 to 3	6	0.64
250	2.5	1.5 to 3	6	0.80
280	3	1.5 to 3	6	0.96
350	3.5	1.5 to 3	6	1.12

(*) depending on viscosity and temperature

5.4 Suction holes dimensions.

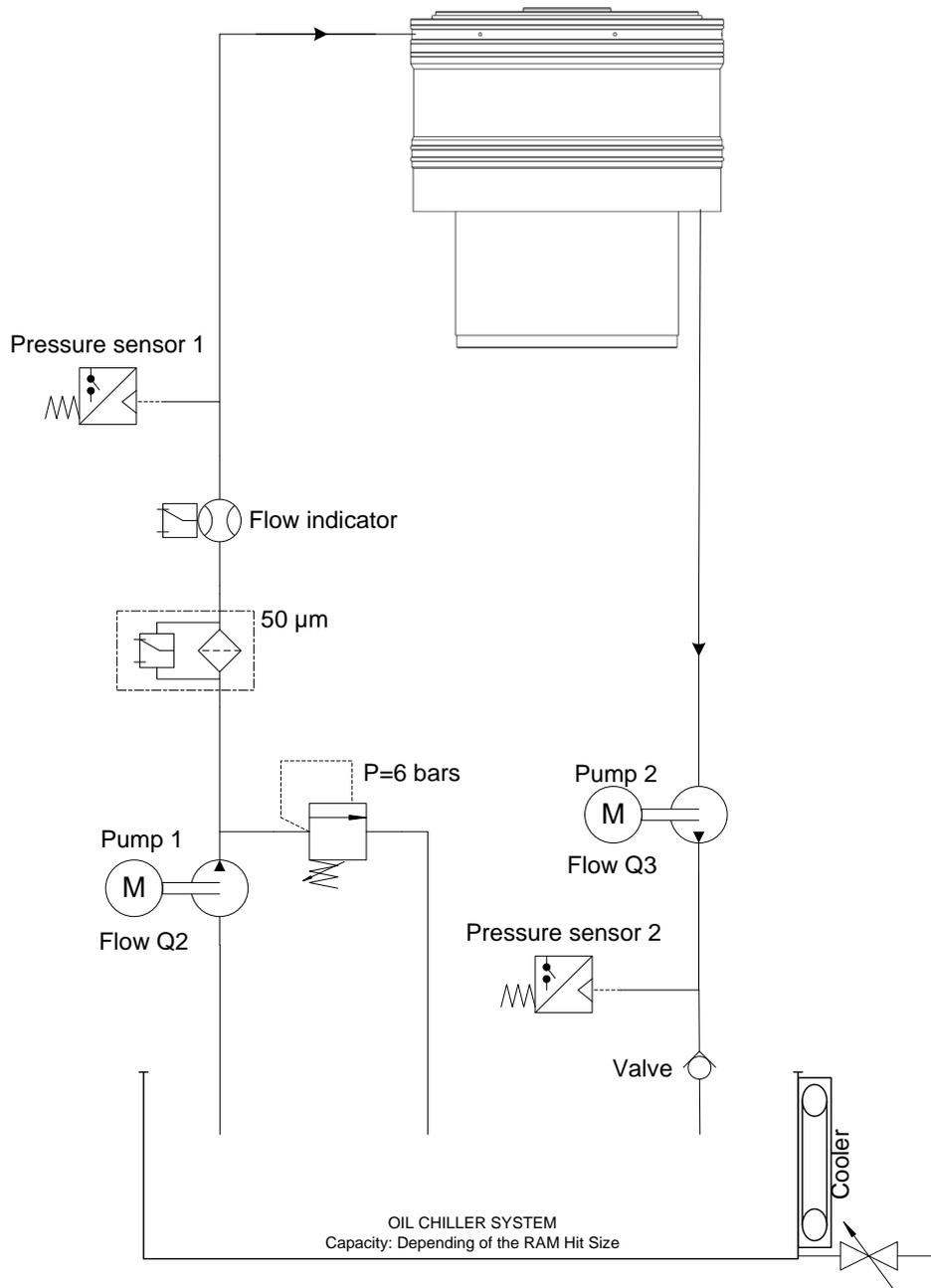
Size	Suction hole thread
190	1/4" Gaz
220	1/4" Gaz
250	1/4" Gaz
280	1/2" Gaz
350	1/2" Gaz

5.5 Lubrication in vertical mounting position.



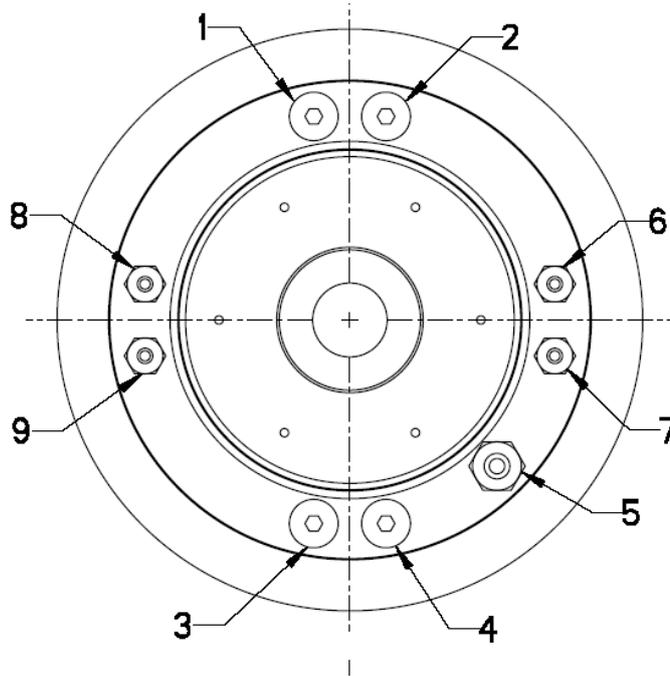
Size	Suction hole (outlet)	Plugged hole	Outlet suction flow Q3 (l/min)
190	5	1-2-3-4	4
220	5	1-2-3-4	5
250	5	1-2-3-4	6
280	5	1-2-3-4	7
350	5	1-2-3-4	7

Lubrication diagram: (Open loop lubrication)



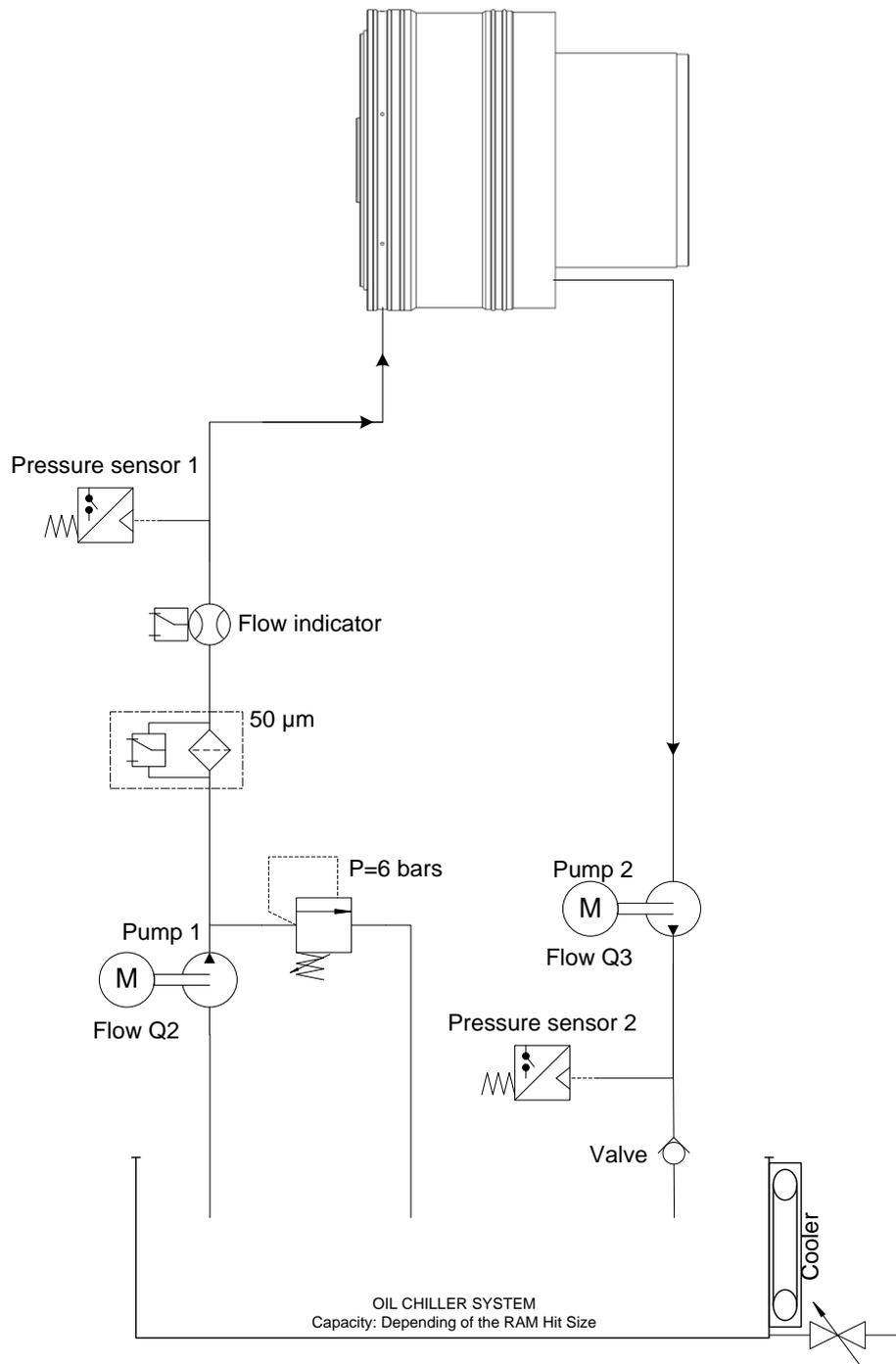
 **WARNING!**
Pumps 1 and 2 must be activated while the gearbox is running
It's necessary to use pressure sensor 1 and 2 to check running pump

5.6 Lubrication for horizontal mounting position.



Size	Suction hole (outlet)	Plugged hole	Outlet suction flow Q3 (l/min)
190	4	1-2-3-5	4
220	4	1-2-3-5	5
250	4	1-2-3-5	6
280	4	1-2-3-5	7
350	4	1-2-3-5	7

Lubrication diagram: (Open loop lubrication)



 **WARNING!**
Pumps 1 and 2 must be activated while the gearbox is running
It's necessary to use pressure sensor 1 and 2 to check running pump

5.7 Lubrication for inclined mounting position.

Consult us.

5.8 Lubrication for swivelling mode.

Consult us.

6 COOLING.

6.1 Coolant flow rate and temperature setting.



Cooling with water:

Water must contain glycol additive to avoid rust (for example Tyfocor – Trademark TYFO)

Cooling with RAM lubrication oil:

Note that oil cooling efficiency is lower than water. Consult us for more details.

The coolant flow rate depends on the cooling capacity of the system and on the power losses.

Generally the water flow rate is fixed by motor characteristics, because motor and RAM circuit are connected in series.

For information, to avoid condensation most of the time cooled water (or oil) temperature is regulated 2 to 5°C upper ambient temperature.

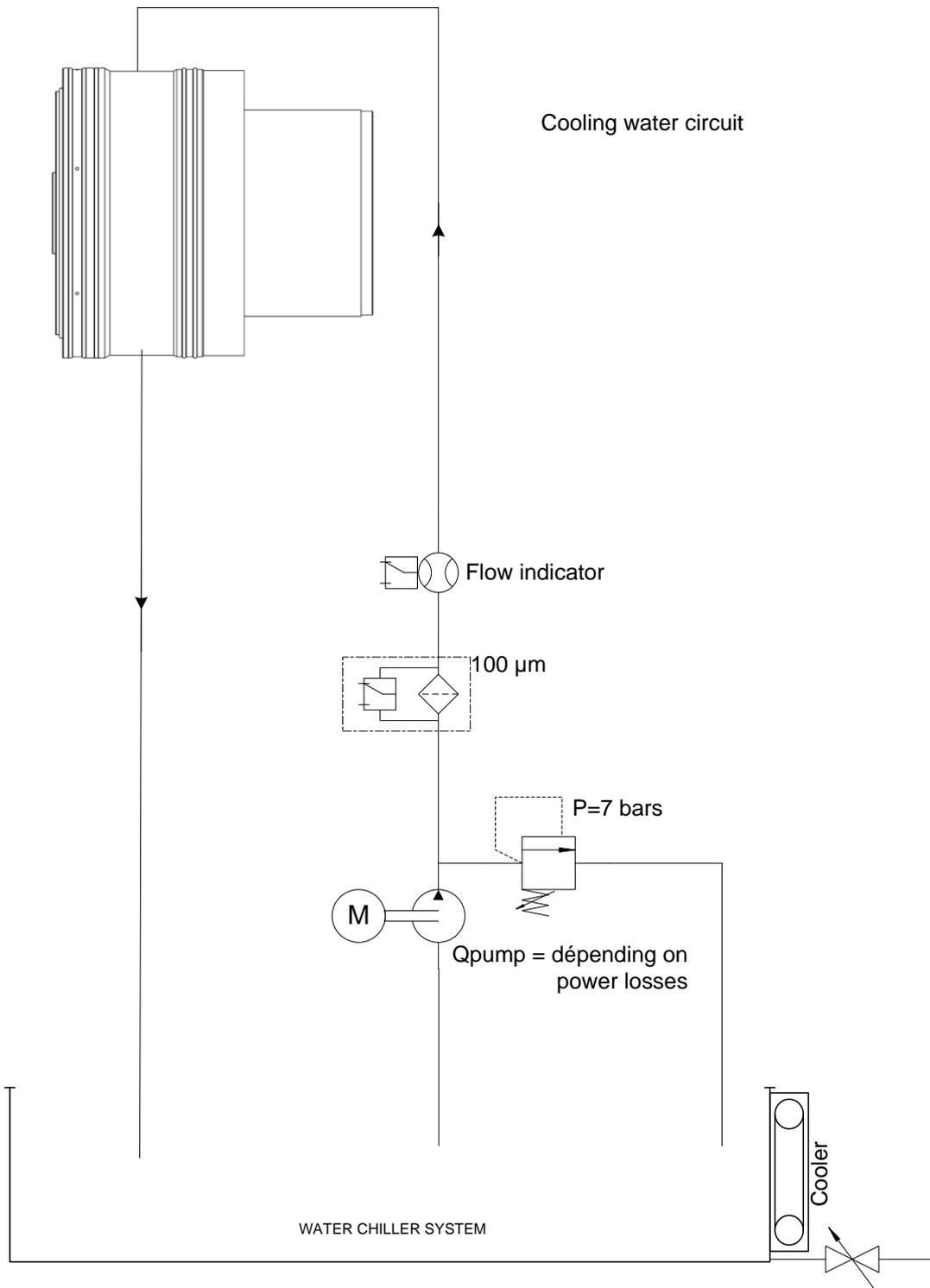
It is necessary to bring the cooling liquid radially over the gearbox cooling jacket. The coolant input and output have to be placed at 180°.

The sealing between the cooling jacket and RAM is insured by O-rings. These O-rings are supplied with the RAM.

Power dissipated by water:

Size	Maxi transmission power (Kw)	Losses (Kw)	Maximum coolant flow rate(l/min)
190	26	0.78	25
220	43	1.29	35
250	65	1.95	40
280	98	2.94	40
350	115	3.45	40

6.2 Cooling diagram.



GUARANTEE CARD

As far as they are delivered as new, REDEX units have 2 years guarantee, starting from the shipping date. When the units are repaired in REDEX workshops, the guarantee period is 6 months.

The guarantee is limited to the free replacement of defective parts and is only applicable if the following conditions are observed:

1. The unit has not been disassembled.
2. The selection of the unit was made in full accordance to the REDEX technical documentation.
3. The mounting and interfacing with the machine were properly carried out.
4. Maintenance periodicity, oil quality and quantity have been respected.
5. The average output power was less than the maximum acceptable power as shown in the technical documentation.
6. Operations must be performed in our workshops and the shipment costs will be charged to the customer.

FICHE DE GARANTIE

Lorsqu'il est livré neuf, le matériel REDEX est garanti pour une durée de 2 ans, à partir de la date d'expédition. Lorsqu'il s'agit d'un appareil réparé dans nos ateliers, la durée de garantie est de 6 mois.

L'étendue de cette garantie s'applique au remplacement gratuit des pièces reconnues défectueuses, sous réserve que les conditions suivantes soient respectées :

1. Le matériel n'a pas été démonté hors de nos ateliers.
2. Le choix du matériel a été effectué conformément aux indications de nos documentations techniques.
3. Le montage du matériel et les interfaces avec les éléments de machines ont été effectués en suivant les procédures de ce manuel.
4. La périodicité de graissage, la qualité et la quantité d'huile préconisées ont été respectées.
5. La puissance moyenne en sortie est inférieure à la valeur maximum indiquée sur la documentation technique du produit.
6. La remise en état est obligatoirement réalisée dans les ateliers de REDEX, et les frais de port restent à la charge du client.

GARANTIE BEDINGUNGEN

REDEX Neugetriebe haben 2 Jahre Garantie nach Versand. Bei Reparaturen aus unseren Werkstätten, beträgt die Garantiedauer 6 Monate.

Die Garantie ist auf den kostenfreien Austausch der defekten Teile begrenzt und ist nur gültig, wenn folgende Bedingungen beachtet wurden:

1. Das Getriebe wurde nicht geöffnet.
2. Die Auswahl und der Einsatz des Getriebes erfolgten in voller Übereinstimmung mit der technischen Dokumentation von REDEX.
3. Die Schnittstelle zur Maschine und die Montage wurden sauber ausgeführt.
4. Wartungsintervalle, Öl-Menge und -Qualität wurden durchgehend beachtet.
5. Die durchschnittliche Abtriebsleistung war weniger als die maximal erlaubte Leistung aus unserer technischen Dokumentation.
6. Arbeiten am Getriebe können nur in unserer Montage erfolgen und die Versandkosten werden dem Kunden berechnet

HOJA DE GARANTIA

Las unidades REDEX suministradas como nuevas tienen un periodo de garantía de 2 años. Las unidades que hayan sido reparadas en REDEX tienen un periodo de garantía de 6 meses. Ambos periodos empezarán a ser efectivos desde la fecha de expedición.

Esta garantía está restringida exclusivamente al cambio de las piezas defectuosas de fabricación y es únicamente aplicable si se cumplen las siguientes condiciones:

1. La unidad no haya sido desmontada.
2. La selección de la unidad se haya llevado a cabo siguiendo de forma correcta las especificaciones técnicas contenidas en el catálogo o las realizadas por su agente REDEX.
3. El montaje y acoplamiento de la unidad se haya realizado siguiendo estrictamente las especificaciones de montaje contenidas en el manual de usuario.
4. La periodicidad de mantenimiento, referencia y cantidad de aceite de lubricación hayan sido respetadas.
5. La potencia media de salida sea menor que la máxima aceptable por la unidad, tal como muestra la documentación técnica.
6. Toda reparación o revisión interna de la unidad debe llevarse a cabo en nuestras instalaciones y los costes derivados del transporte correrán a cuenta del cliente.

GARANZIA

Le unità REDEX hanno 2 anni di garanzia dalla data di consegna. Quando le unità sono riparate in REDEX il periodo di garanzia è di 6 mesi dalla data di consegna.

Questa garanzia comprende la sostituzione gratuita dei pezzi riconosciuti difettosi. La garanzia è applicabile solo se le seguenti condizioni vengono rispettate :

1. Il cliente non ha smontato l'apparecchio
2. La scelta dell'apparecchio è stata effettuata in conformità alle indicazioni dei nostri documenti tecnici.
3. Il montaggio del nostro materiale e gli accoppiamenti con gli elementi della macchina sono stati effettuati a regola d'arte.
4. La periodicità della lubrificazione, la qualità e la quantità di olio sono state rispettate.
5. La potenza media oraria in uscita è inferiore al valore massimo indicato nelle documentazioni tecniche del prodotto.
6. La revisione si effettua obbligatoriamente presso la REDEX e il trasporto di andata e ritorno è a carico del cliente.

质保卡

REDEX 齿轮箱产品从发货之日起，新齿轮箱具有2年质保期。当齿轮箱在 REDEX 工厂维修之后，质保期为6个月。

1. 质保只限于免费更换故障部件，并只适用于以下情况：
2. 齿轮箱未被自行拆开。
3. 客户所选齿轮箱是完全按照 REDEX 技术文档选型的。
4. 在设备上的安装和连接方法是正确的。
5. 维护周期、润滑油质量和数量均遵照说明书要求。
6. 平均输出功率低于技术文档中的最大可输入功率。
7. 维修必须在我们的工厂进行，运输费用由客户承担。

Unit serial number - Numéro de série de l'appareil - Seriennummer des Getriebes –
Numero di matricola - Número de serie - 減速器序列号

Code - Code – Bezeichnung - Codice – Código - 代码

Designation - Désignation – Bezeichnung - Designazione – Designación - 名称

Despatching date - Date de sortie - Versanddatum - Data di uscita - Fecha de
expedición - 出厂日期

Workshop manager signature – Signature du responsable du montage - Unterschrift
Leiter Technische Dienste - Firma del responsabile di officina - Firma del
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