

This manual applies to the variable speed must pumps that have HYDRAULIC speed control.

The proper oil is Shell ATF (automatic transmission fluid) DEXRON 220 which is shown on page 3.

When you receive the pump, remove the red plastic plug and replace it with the oil vent plug. The pumps are shipped filled with oil but be sure to check the sight glass. You should be able to see the red oil in the window.

In addition to this manual, please carefully follow the guidelines for all pumps, and the wiring of 3-phase motors from Europe.

St. Patrick's of Texas Winery Supply
www.stpats.com

INSTRUCTIONS Hydrostatic speed variator series "A"

The speed variator is supplied WHITOUT OIL: before running, fill to the correct level using the recommended grade of oil:

VARIATOR SIZE	A2	A4	A8-A10-A12
AMBIENT TEMPERATURE	-15°C + 2°C (1) +5°F + 35°F (1)	ESSO UNIVIS N 22 ESSO NUTO H 15	ESSO UNIVIS N 22 ESSO NUTO H 15
	+2°C + 30°C +35°F + 86°F	ESSO UNIVIS N 46 ESSO NUTO H 32 ESSO SAE 10 W ATF DEXRON 220	ESSO UNIVIS N 46 ESSO NUTO H 46 ESSO SAE 30 ATF DEXRON 220
	+30°C + 40°C +86°F + 104°F	ESSO UNIVIS N 68 ESSO NUTO H 68	ESSO UNIVIS N 68 ESSO NUTO H 68 ESSO SAE 30 ATF DEXRON 220

In case there is difficulty in finding the prescribed oils, it is possible to make use of the following types of oil to be easily found at filling stations.

VARIATOR SIZE	A2	A4 - A8 - A10 - A12
	Essolube Hdx SAE 10 W (3.6°E a 50°C)	Essolube Hdx SAE 30 (8.5°E a 50°C)

1. At the ambient temperature below -15°C (5°F) we recommend the use of the electric oil preheater code P which oil of the correct grade. Working temperature: 60°C + room temperature.

MAINTENANCE FOR THE SPEED VARIATOR:

IMPORTANT: Change the oil after the first 200 hours of operation and every 2.000 hours the-reafter making sure to use the prescribed oils.

The oil quantity changes whit the working position of the unit, check the correct level when the unit is running (the oil quantity is indicated in litres).

MOUTING POSITION		SIZE			
		A2	A4	A8	A10 - A12
HORIZONTAL	B3	0.5	0.7	1	1.9
	B6 B7	0.5	0.7	1	1.8
VERTICAL	V5 V6	0.5	0.7	1.2	1.9

STARTING AND ADJUSTMENT:

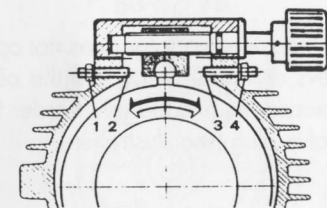
Progressive variation of the output RPM in both directions of rotation is obtained by operating the adjusting control. Inversion of motion too can be obtained throught the control.

When starting a new variator it is important to run the unit for 15/20 mins. whith the output shaft set at the lowest speed.

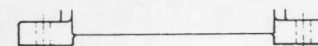
Also, it is absolutely necessary, after a 4-5 months storage, to operate variator at the lowest speed, whitout load, for at least 1-2 hours.

LIMITER DEVICE

- To limit or to exclude the adjustment in the clockwise rotation: turn 1 out and turn screw 2 in till it reaches the adjusting mechanism;
- To limit or to exclude the adjustment in the anticlockwise rotation: turn nut 4 out and turn screw 3 in till it reaches the adjusting mechanism;
- Conclude the operation by blocking nut 1 or 4.

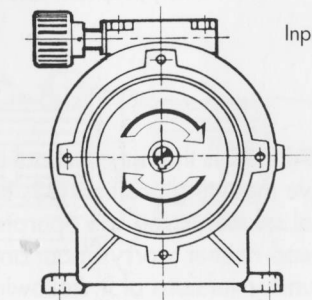


Output shaft end



Input

The direction of rotation of the driving motor must always be as indicated by the arrow marked on the variator input side.



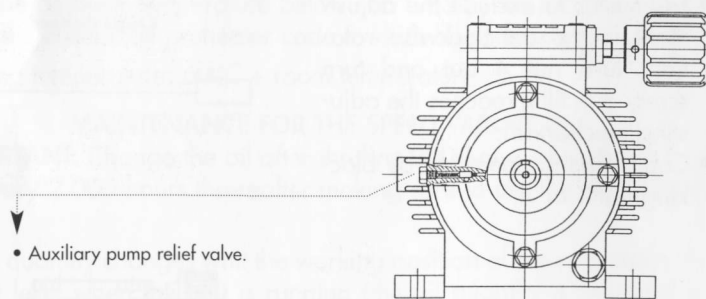
GEARBOXES

MEDIUM LOAD	ESSO Spartan EP 220 (15,8° E 50°C - 220 cSt 40°C)
HEAVY LOAD	ESSO Spartan EP 320 (23° E 50°C - 320 cSt 40°C)

WORM GEARBOXES

MEDIUM LOAD	ESSO Spartan EP 320 (23° E 50°C - 320 cSt 40°C)
HEAVY LOAD	ESSO Spartan EP 460 (32° E 50°C - 460 cSt 40°C)

If the speed variator does not operate properly (decrease in the number or revs or noise) first check the oil and make sure it reaches and does not exceed the fixed level. In order to bleed the air in the circuit unscrew relief valve plug (see illustration).



VAR-SPE is the only hydraulic variator which can be installed in any of five mounting position (**B3, B6, B7, V5, V6**) thanks to a simple technical solution - you can operate from outside the variator. Therefore, you need neither worry about any further change in installation, nor stock sundry versions of it. Following tables show the correct mounting position you can obtain with this technical solution.

"A" SERIES VAR-SPE HYDRAULIC SPEED VARIATOR

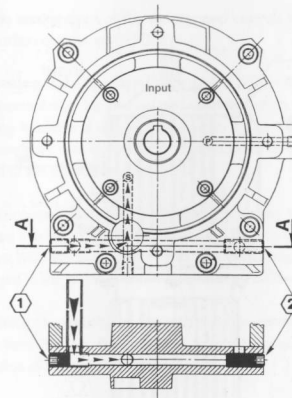
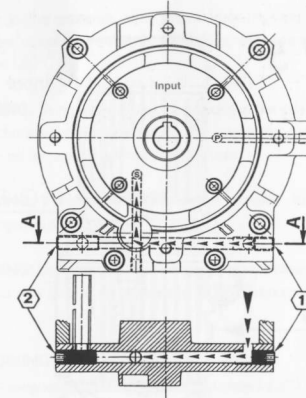
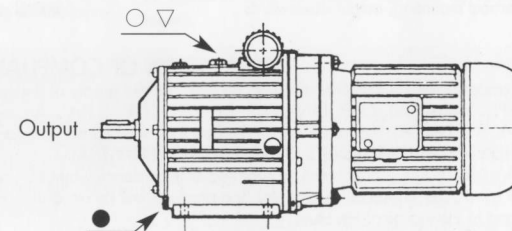
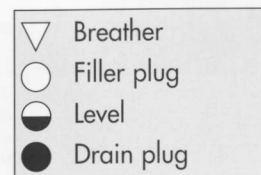
Our variator is now available for mounting position



Modifications to make to prearrange variator to mounting position required.

Remove plugs 1-2 and clean, degrease flange bores and fixs plugs in suitable position (see table) using LOCTITE 243 or TELEFON tape.

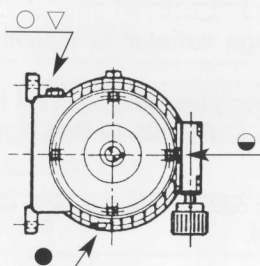
N.B. To remove plugs 1-2 easily, especially in cold enviroment, operate when variator is warm or slightly warm up the part concerned.

B3-B6-V5**B3-B7-V6****B 3**

Horizontal mounting

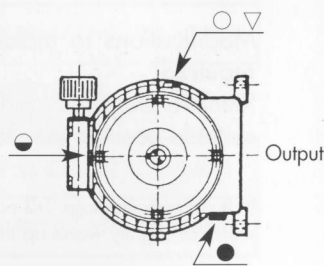


B 6



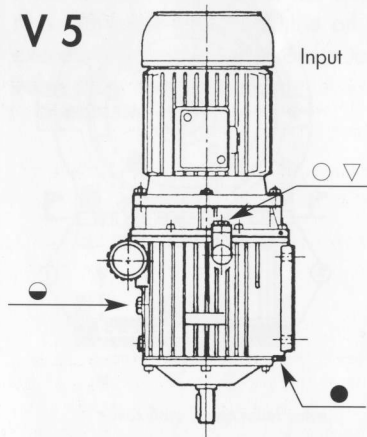
Wall mounting, feet on the left-hand side

B 7



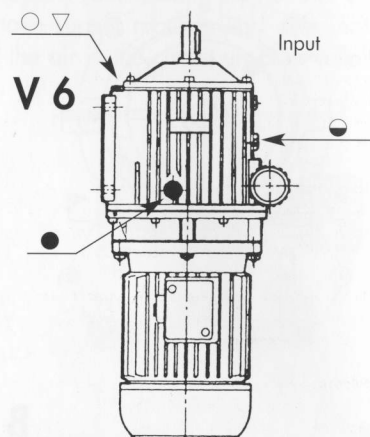
Wall mounting, feet on the right-hand side

V 5



Vertical mounting, output downwards

V 6



Vertical mounting, output upwards

DECLARATION OF COMPLIANCE

According to the EEC Directive no. 89/392 for the supply of finished trade products! The writer, VAR-SPE VARIATORI OLEODINAMICI DI VELOCITA' S.P.A., located in TAVERNELLE DI ALTAVILLA VICENTINA (VI), manufacturer of Var-Spe hydraulic speed variators, **HEREBY DECLARE ON ITS OWN RESPONSABILITY THAT:**

A - All Var-Spe products will be supplied in accordance with EEC Directives nos. 89/392 and 91/368. B - Technical characteristics of Var-Spe products will be according to features indicated in the catalogs and in the technical literature.

Please note that: Var-Spe products can not be set at work before the machine in which they will be incorporated has been declared correspondent to requirements forecast in the EEC Directive no. 93/68.

APPLICATION OF VAR-SPE VARIATORS IN POTENTIALLY EXPLOSIVE ATMOSPHERES

VAR-SPE variators, when supplied and built in certain forms and equipped with certain regulation and protective devices, can be applied in potentially explosive atmospheres in accordance with European directive 94/9/CE (ATEX 100a)

Regulations for the classification of VAR-SPE equipment in accordance with ExII3GD IP65 T135°C

The use of VAR-SPE equipment in areas classified as ZONE 2(G)-22(D), and as such requiring category 3 equipment, is possible bearing in mind that:

- All the parts comprising the equipment, whether electrical or non-electrical (solenoid valves, electric motors, reduction units, ...) must conform to directive 94/9/CE.

- Maintenance of the IP6x classification requires the use of a venting cap with non-return valve.

- All the sealing rings of the variator and controls must be of a fluorocarbon compound (VITON).

- With reference to European Directive 94/4/CE - Attachment II, the equipment must be selected and used according to the corresponding mechanical characteristic curves for continuous operation given in the specific VAR-SPE technical documentation, taking account of the expected service factor.

- Selection and use of the equipment according to the corresponding mechanical characteristic curves for intermittent operation must be made so that these conditions strictly respect the limits envisaged in the VAR-SPE technical documentation.

WARNING: Overloading of the variator, when set at a speed that is less than 30% of the maximum, is not detected by current absorption of the electric motor.

Regulations for the classification of VAR-SPE equipment in accordance with ExII2GDc IP65 T180°C

The use of VAR-SPE equipment in areas classified as ZONE 1(G)-21(D), and as such requiring category 2 equipment, is possible, also taking account of recurrent faults, operating defects, improper use.

Regulations for the classification of VAR-SPE equipment in accordance with ExII2GDbc IP65 T120°C X

The use of VAR-SPE equipment in areas classified as ZONE 1(G)-21(D), and as such requiring category 2 equipment, maximum surface temperature T120°C, is possible subject to the adoption of a number of measures to maintain the protection level also in the presence of recurrent faults, operating defects, improper use.

PROTECTION WITH CONTROL OF THE IGNITION SOURCE:

Suitable measures must be taken to monitor the temperature of the casing or of the oil using passive thermal safeguards to be connected to special protective apparatus for the power supply system.

connected to special protective apparatus for the power supply system. The trigger temperature for the thermal safeguards is defined according to the allowed surface temperature.

WARNING: In the event of failure to connect these safeguards, or in the case of a fault in the reading system, the surface temperature may exceed 135°C if there is a malfunction.

Operating parameters

1. SURFACE TEMPERATURE

Tmax < 135°C

The maximum surface temperature of the variator refers to:

- a. Use of the variator according to the characteristic curve envisaged for continuous operation.
- b. Ambient temperature Tambient 40°C
- c. Variator operating with recommended oil

NOTE: In the presence of recurrent faults, operating defects, improper use of the equipment the surface temperature will be Tmax < 180°C

WARNING: Using the variator for prolonged periods according to the characteristic curve envisaged for intermittent operation will lead to an increase in surface temperatures

WARNING: If the ambient temperature exceeds 40°C a heat exchanger must be installed

WARNING: Using oil that does not have the recommended specifications may lead to an increase in surface temperatures

2. WORKING PRESSURE

p_{max} - continuous ≤ 100 bar ; p_{max} - intermittent ≤ 250 bar

The maximum limit for continuous working pressure is respected anyway if the variator is used according to the characteristic curve envisaged for continuous operation. Working pressure can be monitored using the pressure tap (code M) available on request.

WARNING: If pressures exceed the values shown, use a larger size variator or a reduction unit with a higher reduction ratio.

NOTE: Parts/components must be replaced with perfectly interchangeable components that conform to directive 94/9/CE, and thus approved by VAR-SPE. The associated assembly must not introduce ignition risks or other hazards over and above those of the parts/components taken individually, and must thus be carried out by personnel authorised by VAR-SPE.