



[www.fluidomat.com](http://www.fluidomat.com)



Scoop Controlled  
Variable Speed  
Fluid Couplings



Fluidomat Ltd an ISO accredited company for ISO 9001-2015, ISO 14001-2015 & OHSAS 18001-2007 is manufacturing fluid couplings since 1971 in various types & executions. Various types include.

- Constant Fill fluid couplings in Aluminium & Steel body Oil filled & Water filled.
- Scoop Control Variable Speed fluid couplings type SC.
- Nozzle type fluid couplings.
  1. Type FNCT for Industrial & Mining drives.
  2. Type HLN for IC Engine drives.

Fluidomat fluid couplings are used on more than 150 application in industrial, mining & automotive application.

Approved by all consultants, EPC companies & OEM internationally. More than 500 clients all over the world.

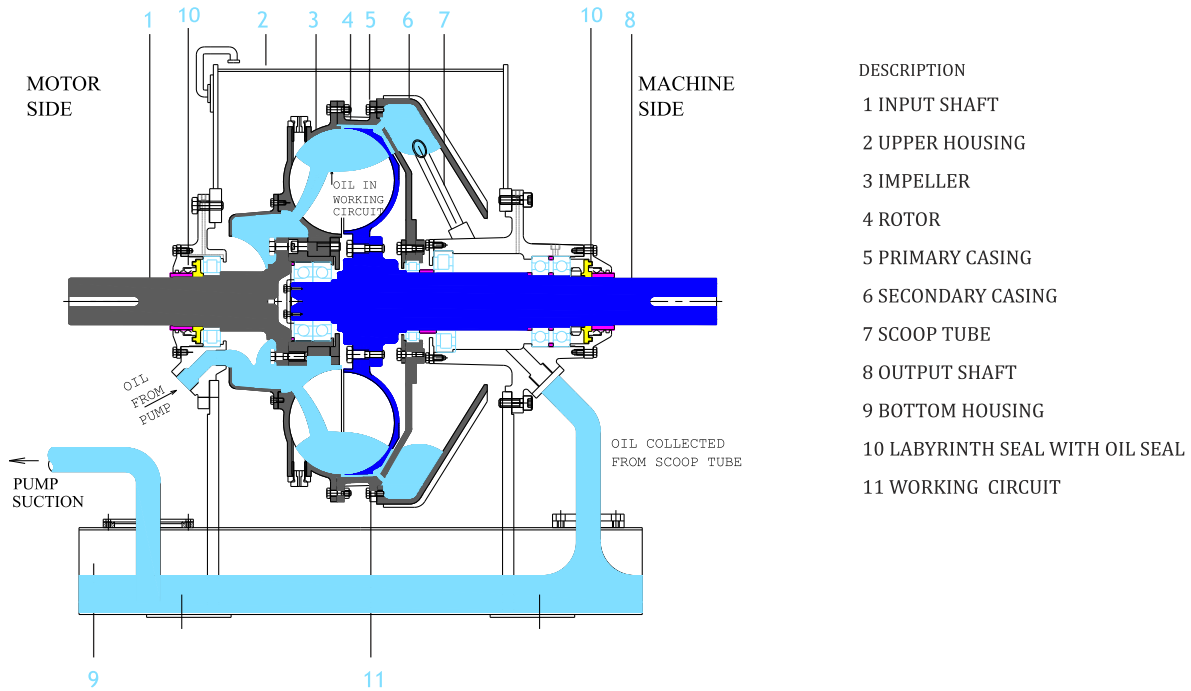


FLUIDOMAT -SC is a variable speed fluid coupling providing stepless speed variation in a wide range when connected to fixed speed electric motor. The speed variation is obtained by varying the oil filling in coupling through a sliding scoop tube when in operation.

Fluidomat SC offers advantages like no load starting of motor, controlled starting torque for machine acceleration, continuous declutching, stepless speed variation and synchronizing of motors in multidrive units, load limiting in a very wide range for safety of motors and machine.

It offers flexibility in controls as it can respond to various electric, pneumatic or hydraulic signals and it is compatible with all types of controllers like pneumatic, hydraulic, electronic, electrical or manual. Beside it offers all the advantages of constant speed fluid coupling like load limiting, absorption of shock loads, torsional loads and vibrations, smooth acceleration etc. Its built-in safety arrangements make it fool-proof during operation.

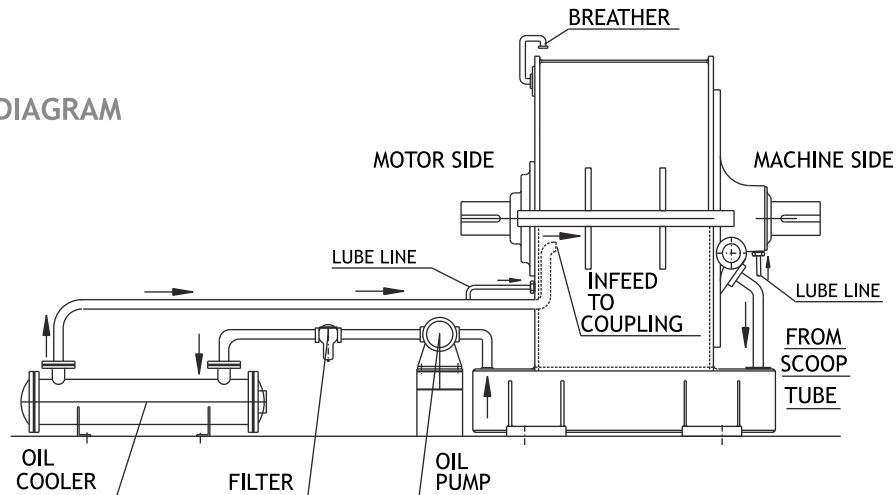




FLUIDOMAT - SC consists of a fluid coupling housed in a self-supported stationary housing having a built-in oil Sump. Oil is continuously introduced in the working circuit (11) of fluid coupling through an oil pump.

The oil circulates through the working circuit and finally passes to the secondary casing (6) and is collected by a sliding scoop tube (7). The position of scoop tube governs the oil level in the working circuit, thus controlling the speed. The position of sliding scoop tube can be governed through suitable actuator and can also be operated manually. On the input and output ends, suitable flexible couplings are provided for the shafts connections. Labyrinth Seals (10) provided on input and output shaft is an effective barrier and ensures no leakage from shaft ends.

## OIL FLOW CIRCUIT DIAGRAM



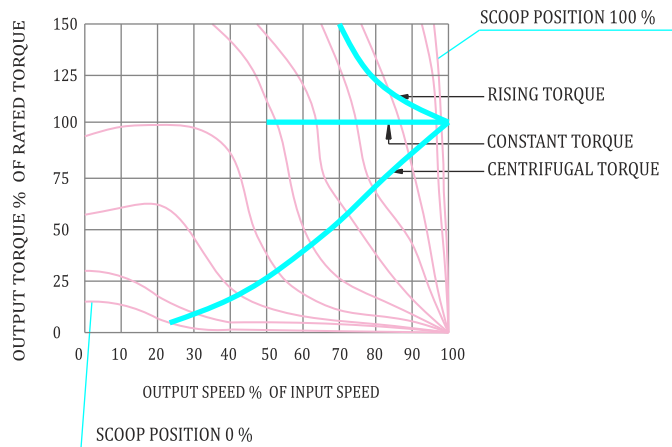
### OPERATION:

The sliding scoop tube governs the oil level in the working circuits depending on its (scoop tube) position between 0% to 100%. By varying the oil level in the working circuit the torque transmission capacity of the coupling varies, thus changing the slip of the coupling and provides stepless speed variation in a wide range. The heat generated in the coupling is picked up by the circulating oil which is cooled by oil cooler provided in the oil circuit.

Fluidomat SC provides very useful stepless speed regulation in the range of 5:1 for centrifugal loads like fans and pumps, 2:1 for constant torque loads like conveyors and 1.4:1 for rising torque loads. It is also very useful for continuous declutching of machine with motor running.

## CHARACTERISTIC CURVE

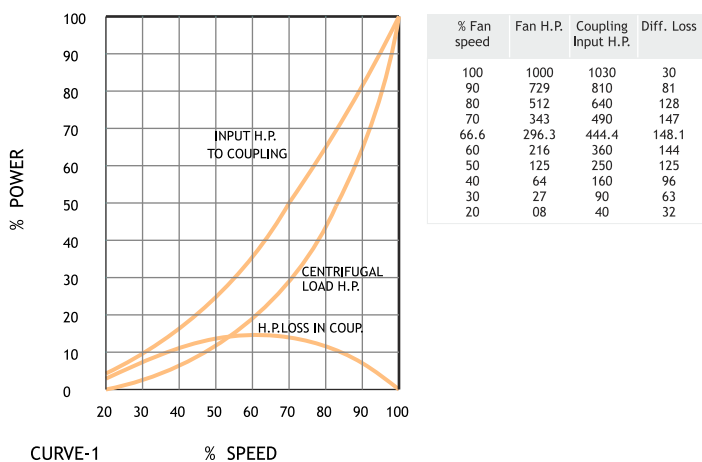
(AT VARIOUS SCOOP TUBE POSITIONS BETWEEN 100 % & 0%)



## ENERGY SAVING THROUGH FLUIDOMAT SC COUPLINGS :

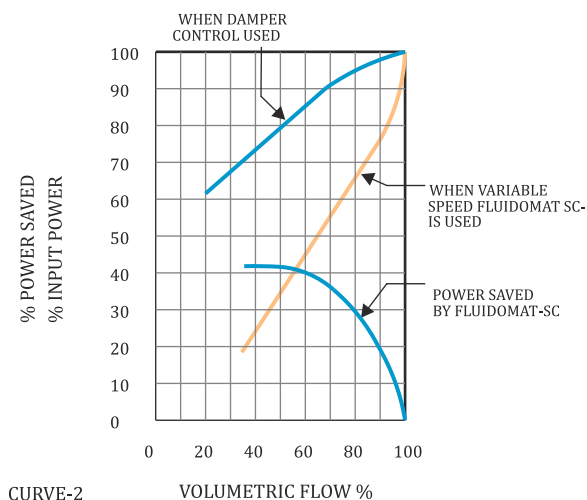
Fluidomat SC provides large energy saving in various drives. In centrifugal machines the discharge of fluid is proportional to the machine speed. The discharge can be varied either by throttle control or by speed control. In throttle control, because additional pressure is exerted therefore the machine requires high energy consumption and also causes high rate wear of pump/fan. On the other hand, if speed of pump/fan is reduced to control the discharge then power demand reduces by cube of speed and therefore large amount of energy is saved. Fluidomat SC offers stepless speed variation in range of 5:1 for centrifugal loads and saves high amount of energy. It thus earns money through energy savings.

## FAN AND FLUIDOMAT-SC TYPICAL POWER SPEED CHARACTERISTICS

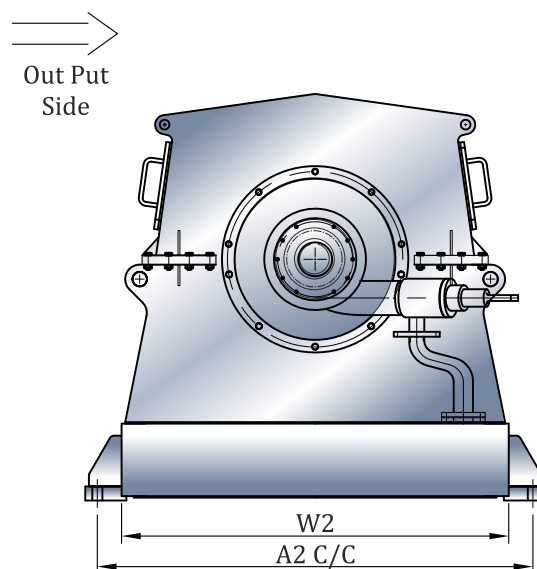
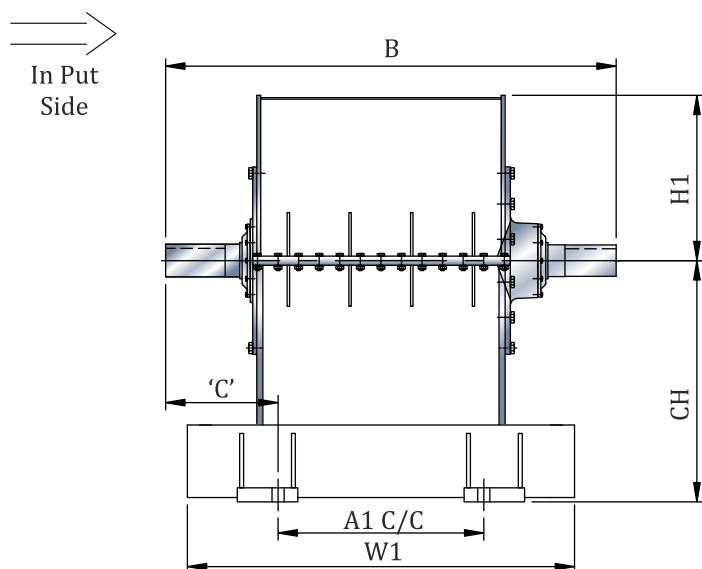


The curve 1 Shows the power required by a centrifugal machine at different speeds. In the same figure the power required by the system is shown if Fluidomat SC is used for speed variations. Fluidomat SC is an ideal equipment for speed variations of centrifugal machines & thus discharge control. Slip power losses in the coupling are also shown in the characteristic curve.

## POWER REQUIRED FOR CENTRIFUGAL FAN & POWER SAVING BY FLUIDOMAT-SC



Curve 2 shows the typical example of power saved at different discharge values when Fluidomat SC is used. The power saving can be in the range of 10-40% depending on operation and flow requirements. Since Fluidomat SC starts motor on NO LOAD therefore motor can be rated for consumed power and not for starting duty. By reducing the power rating of the motor, energy is further saved due to improved efficiency and power factor of the motor. At the same time, high cost slipping motors can be replaced by rugged squirrel cage motors which are low in cost and require very low maintenance.



### TECHNICAL SPECIFICATION AND DIMENSION TABLE FOR SC COUPLINGS

Model	B	A1 C/C	A2 C/C	W1	W2	CH	H1	Oil Qty **
SC-7	855	370	680	630	630	475	276	60
SC-8	810	360	915	835	835	493	287	94
SC-9	1015	440	915	835	835	575	350	114
SC-10	1137	560	1075	1000	1000	610	409	160
SC-11A	1150	560	1075	1000	1000	610	409	156
SC-11	1261	590	1240	1100	1100	630	431	189
SC-12	1267	590	1240	1100	1100	745	500	237
SC-12	1310	590	1240	1100	1100	745	500	237
SC-13	1398	650	1390	1250	1250	765	505	339
SC-13	1398	650	1390	1250	1250	815	505	339
SC-880	1488	750	1650	1500	1500	860	569	456
SC-14	1640	850	1800	1600	1600	1000	650	612
SC-14	1950	940	1800	1800	1600	1060	760	688
SC-16	1950	940	1800	1800	1600	1060	760	864
SC-1330	1950	1126	2020	1800	1800	1160	830	1296
SC-390-233-2	915	370	680	630	630	575	417	90
SC-422-233-2	1110	450	750	850	650	630	330	140
SC-500-233-2	1255	600	1240	1000	1100	660	350	235
SC-580-311	1505	744	1410	1260	1260	800	417	405
SC-630-311*								

\* Details on request.

\*\* - Oil quantity reqd. in pipe line, cooler & filter will be extra.



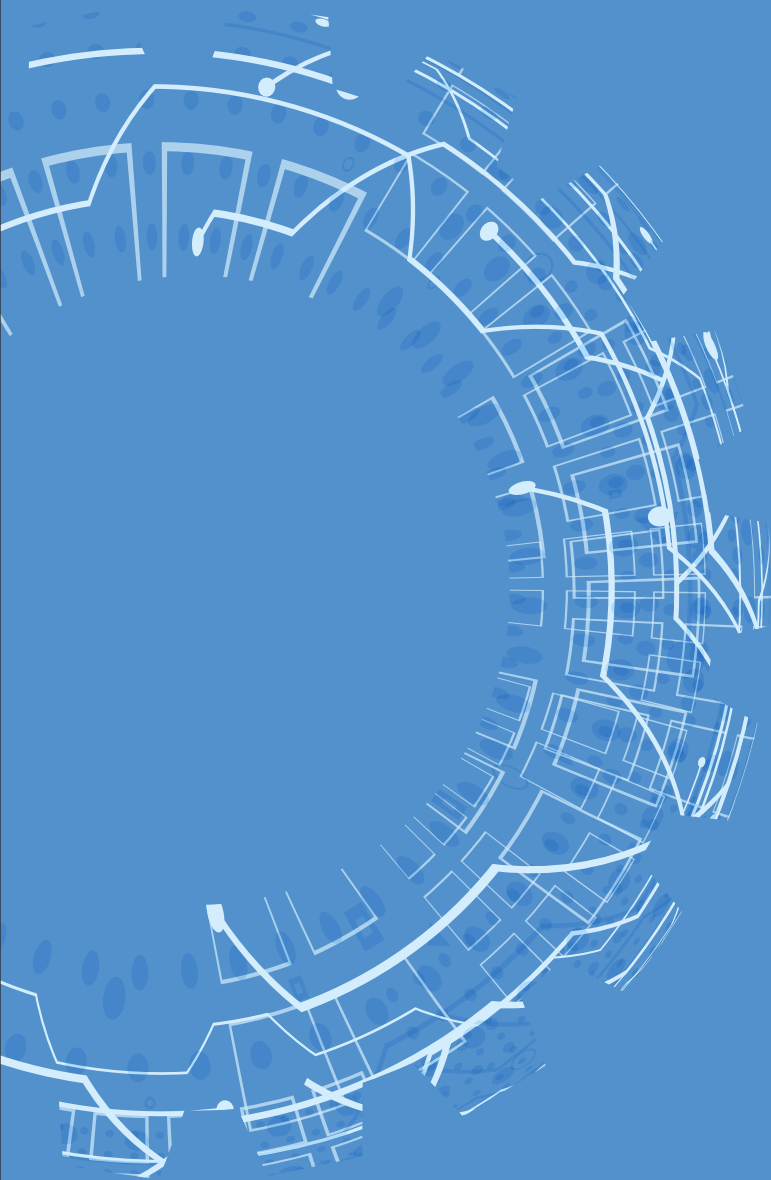
## RATING OF SC COUPLING IN KW

MODEL	INPUT SPEED (R.P.M)									
	500	600	750	900	1000	1200	1500	1800	3000	3600
SC-7	--	5	10	17	23	39	75	100	--	--
SC-8	--	7	14	24	32	56	100	173	--	--
SC-9	--	13	25	44	60	104	205	300	--	--
SC-10	--	25	49	85	116	200	350	425	--	--
SC-11A	20	35	68	118	162	280	500	680	--	--
SC-11	29	51	100	172	236	408	725	1100	--	--
SC-12	52	90	176	304	416	720	1250	2000	--	--
SC-13	74	128	250	432	592	1024	1700	2300	--	--
SC-880	111	192	375	648	890	1600	2300	2600	--	--
SC-14	252	435	850	1468	1850	2300	--	--	--	--
SC-14-233-2	326	563	1100	1525	2090	3000	--	--	--	--
SC-16	740	1280	2500	3300	3500	--	--	--	--	--
SC-1330	1250	2160	3200	3840	--	--	--	--	--	--
SC-390-233-2	--	--	--	--	--	--	--	--	300	400
SC-422-233-2	--	--	--	--	--	--	--	--	600	740
SC-500-233-2	--	--	--	--	--	--	--	--	1250	1500
SC-580-311	--	--	--	--	--	--	--	--	3000	3300
SC-630-311	--	--	--	--	--	--	--	--	4600	--

## ADVANTAGES

- Due to its constructional features Fluidomat - SC design offers many distinct advantages like :
- Self - supported stationary housing, hence no weight experienced by driving or driven shafts and does not load motor and machine bearings.
- Rugged design for all site conditions.
- Rotating mass is not exposed, hence, no hazards of accidents.
- Easy mounting of various controls, oil connections, sensors etc.
- Higher misalignment capacity and choice of flexible couplings.
- Easy maintenance and accessibility by opening top cover.
- Continuous declutching possible.
- Very low vibration and noise level.
- Ease of adopting various type of control and compatible with them.
- Scoop tube position can be governed very easily for speed control.
- Easy operation of scoop tube in auto or manual mode.
- Labyrinth Seals on shaft ensures no leakage from shaft ends.





**Works & Head Office (INDIA)**

7C-8J, I. S. Gajra Industrial Area-1

AB Road, Dewas-455001 M.P. INDIA

Tel : +91 7272 268100

E-mail : [info@fluidomat.com](mailto:info@fluidomat.com)

Web : [www.fluidomat.com](http://www.fluidomat.com)