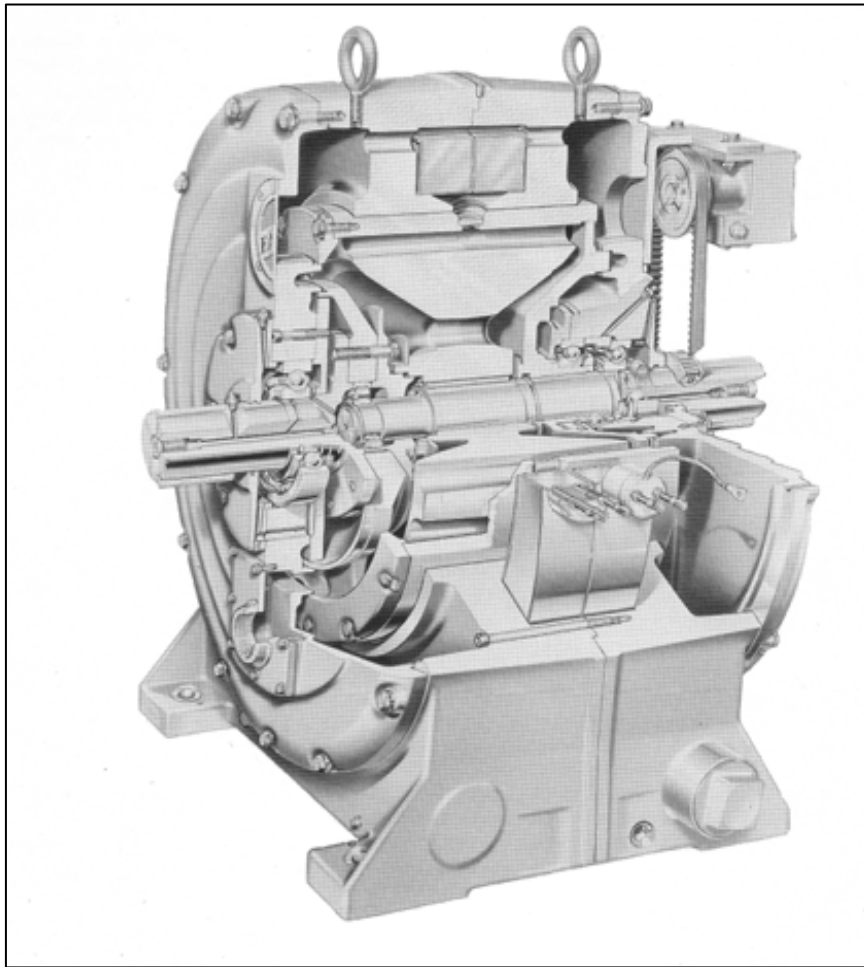


DSI/Dynomatic® Heavy-Duty Eddy-Current
Couplings Using A Forced Oil Lubrication System

DSI/Dynomatic®



Liquid Cooled Eddy-Current Couplings

Models 2232 Through 2313 1000 HP - 4000 HP

Eaton introduces a forced oil lubricating system that extends the reliability of the Dynamatic liquid-cooled, heavy-duty eddy-current couplings beyond that of the industry proven grease or oil mist lubricated designs.

This new feature is an outgrowth of Eaton's continuous program of product improvement. Fundamental to this new feature has been the search for a reliable seal arrangement that would prevent lubricating oil from mixing with the cooling medium and insuring long trouble-free seal life. Step-seals, as indicated in the cutaway view, were found to meet all requirements.

Even the smallest of this model series now uses exclusively roller bearings to give higher bearing load ratings, thereby extending bearing life. The inherent reliability of this new design allows continuous operation and no need to shut down for pilot bearing lubrication. A continuous flow and return oil lubricating system permits trouble free operation and allows scheduled, long term shut downs for increased productivity.

Dynamatic heavy-duty couplings are backed by nearly 50 years of providing stepless adjustable speed with full torque, continuously available throughout the entire speed range. Standard ratings are included in the table below. Units with capacities up to 18000 HP @514 RPM have been successfully built and operated.

Lubrication by Circulating Oil

Closed loop oil systems have these special advantages over grease lubrication and static oiling:

Oil is positively fed to the load contact areas between rolling elements and race, which is of greatest importance to the fatigue life of roller bearings and allows higher operating speeds. Removal of heat due to bearing friction loss is readily controlled. Scavenging of solid particle contamination is continually accomplished through intentional filtering. The "exchange" of lubricant provides a means to continuously monitor its quality and any evidence of developing wear particles in the bearing chamber. Bearing temperature is generally observed through monitoring of the oil temperature as it leaves the bearing. In addition to the above a well designed oil circulating system can provide excellent storage protection by means of periodic circulation of oil to remove any possible condensation and renew surface film coating. A heavy viscosity oil may be utilized for best storage protection and then changed at startup for optimum lubricating qualities for run performance. This requires no dismantling of equipment and is a simple quick procedure.

Specifying the optional long-term or Gulf Coast storage protection features will add bearing heaters which are electrically energized during storage or shutdown periods to prevent condensation; suitable closures for vent and drain to further protect against condensation as well as the entry of rodents and insects; and asphaltic base protective coating on shaft extensions. The units will be shipped with special plastic covering and resilient pads under each foot (or mounting base, if supplied). Instructions for periodic hand rotation

of shafts during storage will be prominently displayed on the unit and an instruction manual will be securely attached to the shipping base.

Benefits

Eliminates need for periodic shut-down for maintenance. No need to remove and re-install safety guards over the flexible couplings and grease fittings. Scheduled maintenance can be accomplished on a planned plant shut down. Ease of maintenance. Fast check for ample supply of lubricating oil for the system. That the filter is periodically cleaned, and that the oil pressure switch is in order.

The system only requires attention at the sump location enabling monitoring of oil temperature and filtering of the lubricant.

It is possible to use the forced oil lubrication system to 1800 RPM. It may be possible to use the customer's existing oil system if compatible with our coupling's forced oil lubrication requirements.

All things considered, when lubricating with oil, bearings last longer.

AC Power Input

Only standard AC power is required.

Adjustable Speed

Wide, stepless speed range from adjustment of a potentiometer.

On-Off Clutch

Starting and stopping of the clutch without interrupting the motor current.

Quiet Operation

Totally enclosed construction; liquid cooled; no noisy fans.

Low Maintenance

Stationary field design; no slip rings, brushes or commutators.

Extended Motor Life

Start Motor under no load.

Monitor Output Torque**

Prevents Motor Overload

Motor "Pull-Out" Torque

Permits use of smaller, more efficient motor.

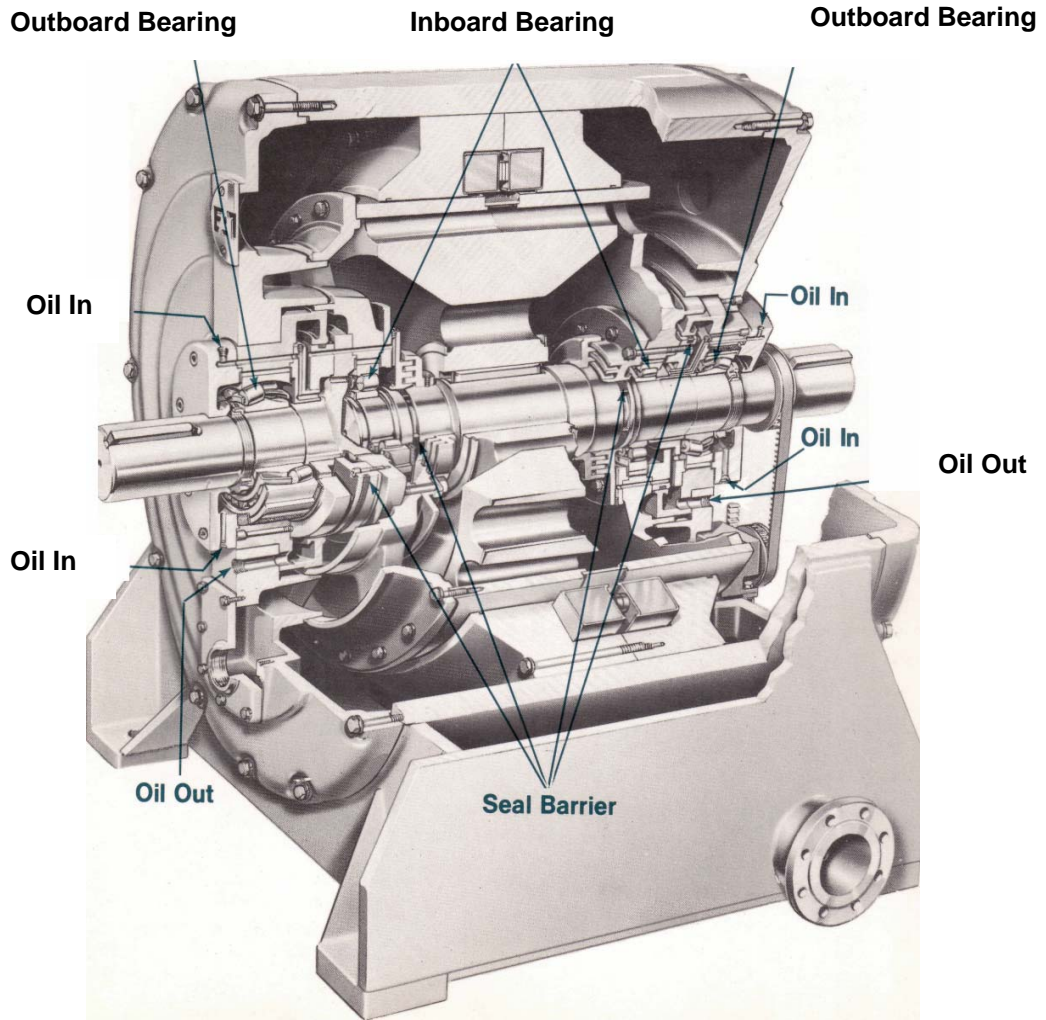
**optional torque limiting prevents motor overload.

Application Data

Model WCS-	Torque at Slip RPM (Pounds-Feet)						Water-Cooled Thermal Capacity (HP)	Normal Maximum Speed (RPM)	Controller Size	Cooling Water G.P.M.	
	40	50	60	75	1150	1750				Bypass	Max*
2232		3950	4350	4900	7300	6300					
2233	3450 4500	5150	5800	6500	8100	6800	1250	1800	8	10	125
2252	5250	6000	6600	7400	9500	8500					
2253	6400	7500	8400	9200	10800	9400	1800	1800	8	10	180
2272	10400	11500	12300	13000	16000	16000					
2273	13250	14950	16300	17750	17000	15000	2250	1800	9	20	225
2292	21300	23900	26000	28600	30000	—	3000	1500	9	25	300
2293	24400	27500	29800	32400	30000	—					
2312	35000	38600	41500	44300	39000	—	4000	1200	10	30	400
2313	40500	45000	48500	51500	38000	—					

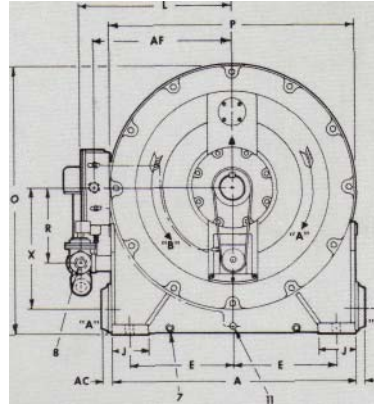
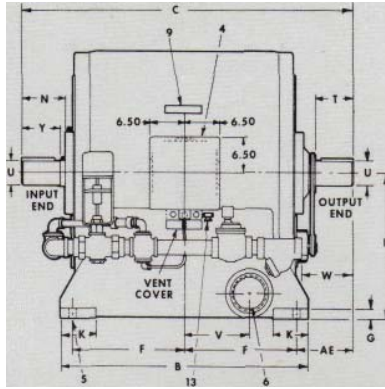
*Cooling water up to the Maximum shown, if required.

Cutaway View
Of Typical Forced Oil
Lubricated Coupling

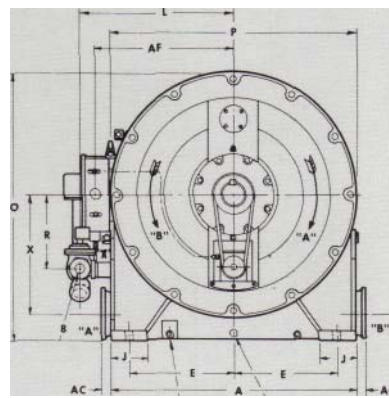
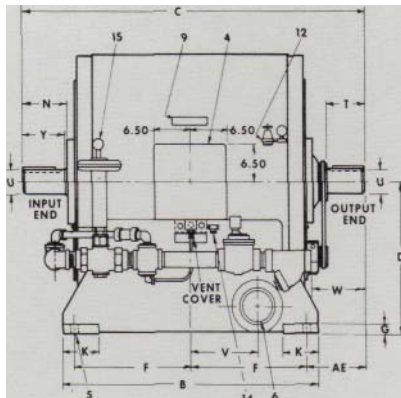


Outline Drawings

Models
2232
2233
2252
2253



Models
2272
2273
2292
2293
2312
2313



10 11

Dimensions — Inches

Model WCS-	A	B	C	D ¹	E	F	G	H ⁵	J	K	L	N	O	P	R
2232, 3	40	36.00	50.00	22.00	17.00	16.00	1.50	1.25	5	6.00	27.00	7.18	42.12	40.25	12.25
2252, 3	40	42.00	56.50	24.00	17.00	19.00	1.50	1.25	6	6.00	27.00	7.44	44.12	40.25	12.25
2272, 3	48	48.00	66.50	29.00	20.50	21.50	1.62	1.44	7	7.25	31.00	9.25j	53.12	48.25	15.25
2292, 3	56	54.00	76.75	33.00	24.00	24.00	1.75	1.44	8	8.00	37.62	11.44	61.00	56.00	17.50
2312, 3	62	65.00	88.75	37.00	26.00	28.00	2.75	1.62	10	12.00	36.00	15.00	68.25	62.50	20.62

Model WCS-	Shaft Extension				V	W	X	Z ⁸	AB ⁶	AC	AE	AF	Print Number
	T ²	Y ²	U ³	Keyway									
2232, 3	6.50	6.50	4.38	1.00 x .50	7.50	4.00	18.00	2.00	6.00	1.44	9.62	22.50	C-70293
2252, 3	13.75	6.75	4.50	1.00 x .50	10.50	7.00	20.00	2.50	6.00	1.44	9.88	22.50	
2272, 3	7.88	8.62	5.00	1.25 x .62	13.25	5.50	23.25	2.50	6.00	3.50	12.12	26.25	C-70334
2292, 3	10.50	10.50	6.00	1.50 x .75	13.75	4.50	26.00	3.00	8.00	2.75	14.68	30.50	
2312, 3	13.50	14.88	7.00	1.75 x .88	15.00	8.50	29.75	3.00	8.00	4.00	16.38	33.25	

1 Dimension will never be exceeded. When exact dimension is needed, liners up to .06 in. may be required.

2 Maximum useable shaft length.

3 Shaft diameter tolerance $\pm .001$

4 Water piping, clutch field and governor generator leads junction box. Furnished opposite standard on request.

5 Four mounting holes "H" diameter.

6 Water discharge "AB" pipe tap.

Use water discharge "A" for rotation "A".
Use water discharge "B" for rotation "B".

7 Immersion bulb (1" pipe tap) must be mounted in water discharge side of

9 Lubrication inlet for all bearings 3/8" P.T. provide 1/3 GPM oil supply.

10 Bulb for water regulator. Location on water discharge side.

11 Temperature switch location.

12 Air supply inlet 1/8" P.T. for water piping controls—30 PSI minimum.

13 Bearing lubricating oil drain, 3/8" P.T. on 223 & 225.

14 Bearing lubricating oil drains, 3/4" P.T. on 227, 229 & 231.

15 Air operating flow water regulator valve.

For additional information contact our factory at 800-548-2169 or 262-554-7977. Fax us at 262-554-7041 or email us at sales@drivesourceusa.com. DSI/Dynamatic, Drive Source International, Inc. 7900 Durand Avenue, Sturtevant, Wisconsin 53177.

