

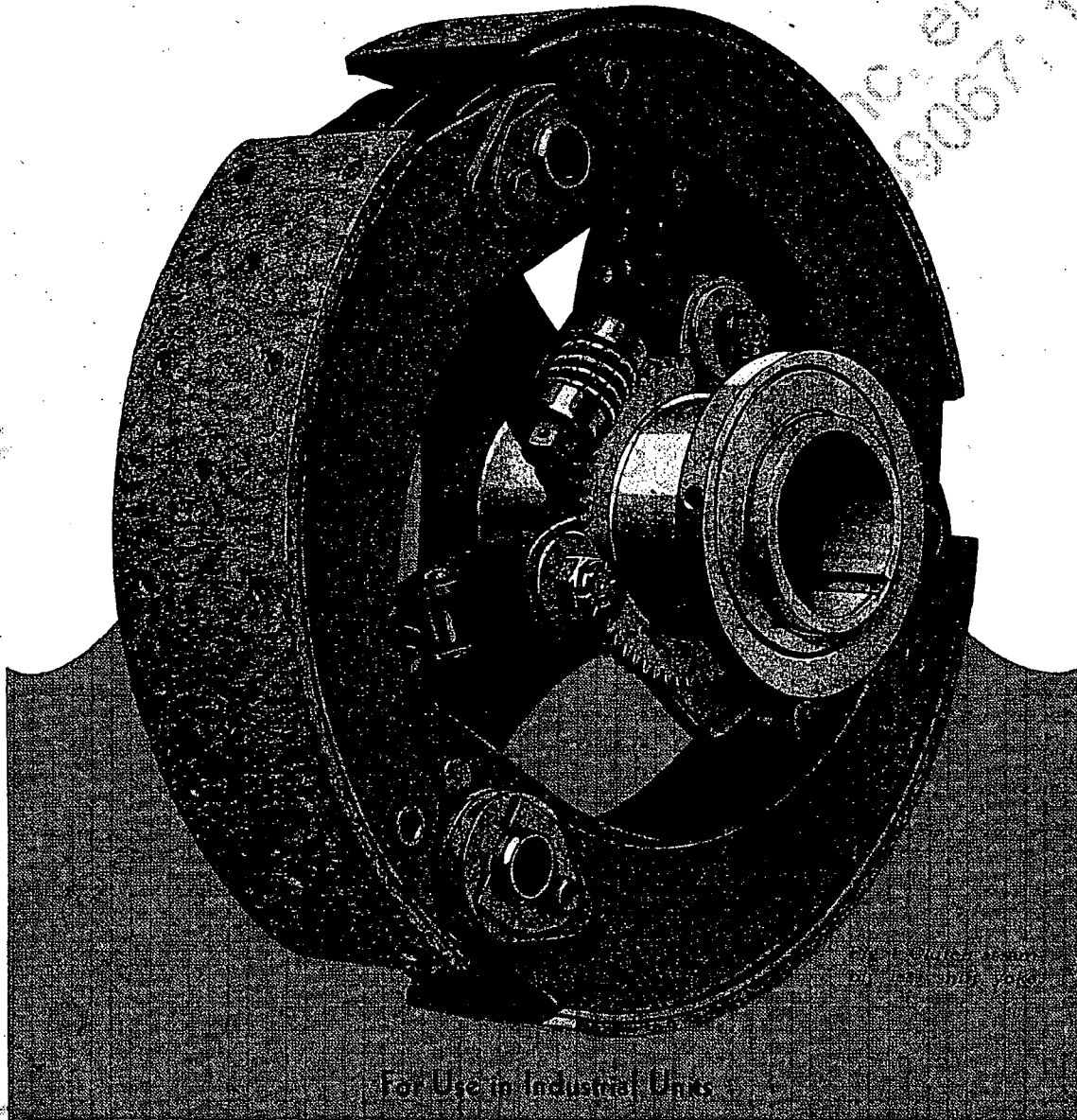
FAWICK INDUSTRIAL CLUTCH

FAWICK MANUFACTURING CO.

WAUKESHA  WISCONSIN

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For Use in Industrial Units

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A Distinct Advance In Clutch Construction

THE Fawick Industrial Clutch is designed for use in industrial units — Power Shovels, Cranes, Drag-Lines; Road Building Machinery, Road Rollers, Concrete Mixers; Farm Tractors, Combine Harvesters; Power Take Off work of all sorts, and many other similar applications. It has two important features of superiority and difference from other clutches; namely, a lighter counterweight and a micrometer adjustment.

Lighter Counterweight

In the first place, the counterweight that balances the pull of centrifugal forces is less than $1/3$ as heavy as the shoe, and acts on the shoe through a 3 to 1 leverage. This cutting down of weight is a distinct advantage. In other makes of shoe clutches, the counterbalance has been located opposite the pivot at the heel of the shoe, carried on a rigid extension, and because of the necessary limitation of space, it is often heavier than the shoe and facing. In the Fawick Clutch, this lighter counterweight performs just as efficiently as a larger and heavier weight and does not add to the weight of the clutch nor take up any unnecessary space.

Micrometer Adjustment

In the second place, a micrometer adjustment is provided in the Fawick Clutch to take up the play resulting from wear on the facing. With this adjustment each shoe is moved out from the clutch center simultaneously so that an accurate adjustment of each shoe may be maintained at all times. This feature, aside from giving absolute accuracy of adjustment, eliminates the possibility of any inexact adjustment by ordinary mechanical methods that are necessarily practised in adjusting other makes of clutches.

Toggle Action

Figure 2 shows the counterweight pivoted to the spider at "A", having its bearing on the outside of the boss. Motion is transmitted to the counterbalance assembly through toggle "B", which is connected to the shift sleeve by adjust stud "C".

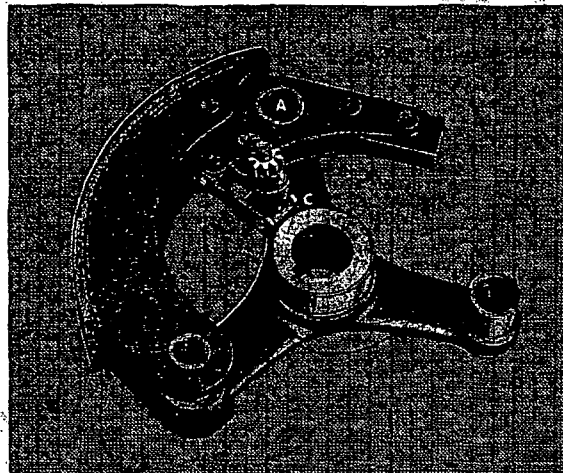


Fig. 2 Partial assembly showing one shoe and counterbalance assembly—also toggle and adjust stud.

The toe of the shoe is connected to the counterbalance assembly by a pressure link (not visible) and it is obvious that the weight and shoe move in opposite directions due to this hook-up—thereby equalizing the centrifugal forces.

Compensation for Wear

There is a certain amount of inevitable wear on the clutch facings since they bear directly on the inside bore of the flywheel rim, but in the Fawick Clutch any play that develops can be taken up by its exclusive feature—the micrometer adjustment shown at "D" in Figure 3. An adjust worm gear "D" meshes with an adjust ring gear "E", which meshes with an eccentric stud at each inner end of three shoe toggles "F". A turn of the adjust worm gear is transmitted by the adjust gear to each of these eccentric studs, and displaces the toggles in or out simultaneously as may be required to compensate for wear on the clutch facing.

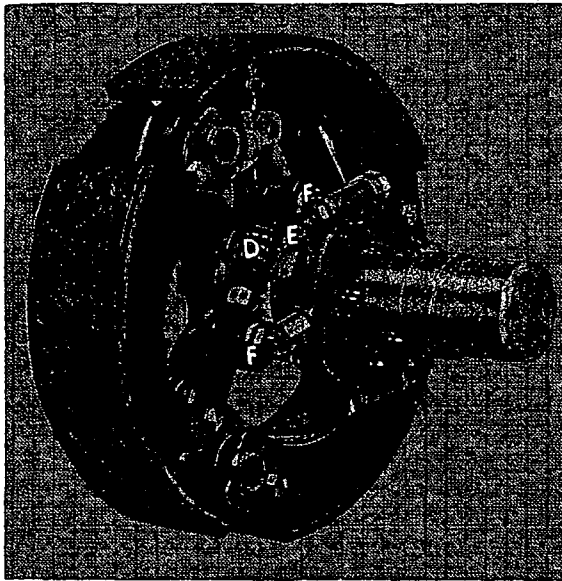


Fig. 3 Clutch assembly. Note single point adjust screw.

Equal Adjustment Positive

Notches are cut on the outside of worm and a detent spring provided to prevent accidental change of adjustment. Moving the adjust worm one notch results in moving the shoe approximately one one-thousandth of an inch. It is, therefore, possible to obtain extremely accurate adjustment, and equal adjustment is positively insured for each shoe. It is impossible for one shoe to become tighter than the others or to get the clutch out of balance.

Absorbs Heat

The Fawick Clutch works excellently in units where continuous slipping is unavoidable, such as cranes and shovels, because of its unusual heat dissipating qualities. The heat generated by slipping is transmitted directly into the rim of the flywheel and the pressed steel shoes act as a fan, insuring a constant circulation of air on the inside of the shoes and over and around the flywheel. The location of the shoe pivot pin is such that the clearance at both heel and toe of the lining is practically the same when the clutch is disengaged and the lining wears down uniformly at both ends as the shoes are adjusted. There is positively no tendency to drag when the clutch is disengaged

and no loose parts such as driving studs, etc. to rattle either when the clutch is in or out.

Chatter Eliminated

The clutch is made very largely of steel stampings, thus insuring interchangeability of parts, exact machining, perfect balance, and great strength with minimum weight. The clutch shoes are pivoted to the driving spider by means of extra large hollow steel pins, hardened and ground, and all parts subject to wear are also of hardened steel, thereby eliminating wear and preventing noise or chatter, either when the clutch is engaged or disengaged. The clutch spider has a tapered bore and is secured to the drive shaft by nut and key, eliminating any possibility of looseness or of noise developing between the clutch and drive shaft.

Facing Has Long Life

The clutch facing material is moulded asbestos compound similar to that used on the heaviest truck and bus brakes. Unit pressures are very much lower than those successfully used in brake service and this results in exceptionally long life with a minimum of adjustment.

Power Take Off

There is a complete line of Power Take Off units available to fit any standard S.A.E. bell housing for industrial power units.

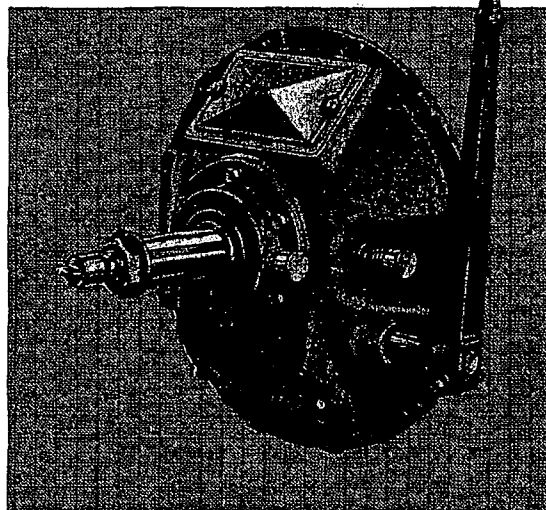


Fig. 4 Power take off assembly. No. 3 housing and 12" clutch.



Capacity

The following tables show the operating range in Torque and H. P. per 100 R. P. M. for various sizes of Fawick Clutches at various loadings, which are within practical limits. The ultimate capacity with modern moulded asbestos compound facings, as used in the Fawick Clutch, is above 80# per square inch.

All average service, such as in Farm Tractors, Industrial Power Units, or the like, where a proper proportion between size, cost and effective life is desired, a loading of 7 to 8 pounds has been found to be satisfactory practice.

We have shown the Torque and H. P. at $7\frac{1}{2}$ # in red in the table below, and these figures may be taken as normal capacity for each of the different size clutches.

There are some classes of severe service, however, that may require loadings as low as 5# per square inch, and then again it is quite possible to have satisfactory performance in intermittent service with loadings up to 10#.

Selecting the proper clutch for any particular service is very largely a matter of experience. The resources of our Engineering

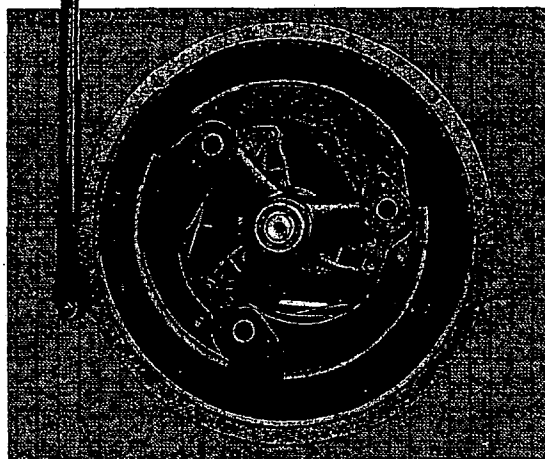


Fig. 5 Front view of 12" clutch in No. 3 housing.

Department with years of experience in making clutch recommendations are at your disposal.

See data sheets for detailed information on size and mounting dimensions of each clutch and power take-off.

Capacity of Fawick Industrial Clutches

Torque, in pound inches. Horsepower per 100 R. P. M.

Tan. Load	10x2 $\frac{3}{4}$ Clutch		12x2 $\frac{3}{4}$ Clutch		14x3 $\frac{1}{4}$ Clutch		16x3 $\frac{1}{2}$ Clutch		20x5" Clutch		28x7" Clutch	
	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.	Torque	H.P.
5#	1800	2.86	2593	4.11	4169	6.61	5864	9.30	13090	20.77	35228	55.88
5 $\frac{1}{2}$	1981	3.14	2852	4.53	4586	7.28	6451	10.23	14399	22.84	38751	61.47
6	2161	3.43	3111	4.94	5003	7.94	7037	11.16	15708	24.92	42274	67.06
6 $\frac{1}{2}$	2341	3.71	3370	5.35	5420	8.60	7624	12.09	17017	27.00	45796	72.64
7	2521	4.00	3630	5.76	5837	9.26	8210	13.02	18326	29.08	49317	78.23
7 $\frac{1}{2}$	2701	4.28	3889	6.17	6254	9.92	8796	13.95	19635	31.16	52840	83.82
8	2881	4.57	4148	6.58	6671	10.58	9383	14.88	20944	33.23	56363	89.41
8 $\frac{1}{2}$	3061	4.85	4408	6.99	7088	11.25	9969	15.81	22253	35.31	59886	95.00
9	3241	5.15	4667	7.40	7505	11.91	10556	16.74	23562	37.39	63408	100.58
9 $\frac{1}{2}$	3421	5.43	4926	7.82	7922	12.57	11142	17.67	24871	39.46	66931	106.17
10	3601	5.72	5186	8.22	8339	13.23	11729	18.60	26180	41.54	70454	111.76

The Fawick Industrial Clutch comes in six standard sizes, each with capacities equal to any normal duty:

10 x 2 $\frac{3}{4}$ —12 x 2 $\frac{3}{4}$ —14 x 3 $\frac{1}{4}$
16 x 3 $\frac{1}{2}$ —20 x 5 —28 x 7

Special clutches of the same general type may be built to your specifications.

In the Fawick Industrial Clutch, you will find a unit that performs its functions more smoothly and effectively than has heretofore been possible.

It is not just another clutch, but due to its practical features marks a distinct advance in efficient clutch construction.