

North American Clutch & Driveline

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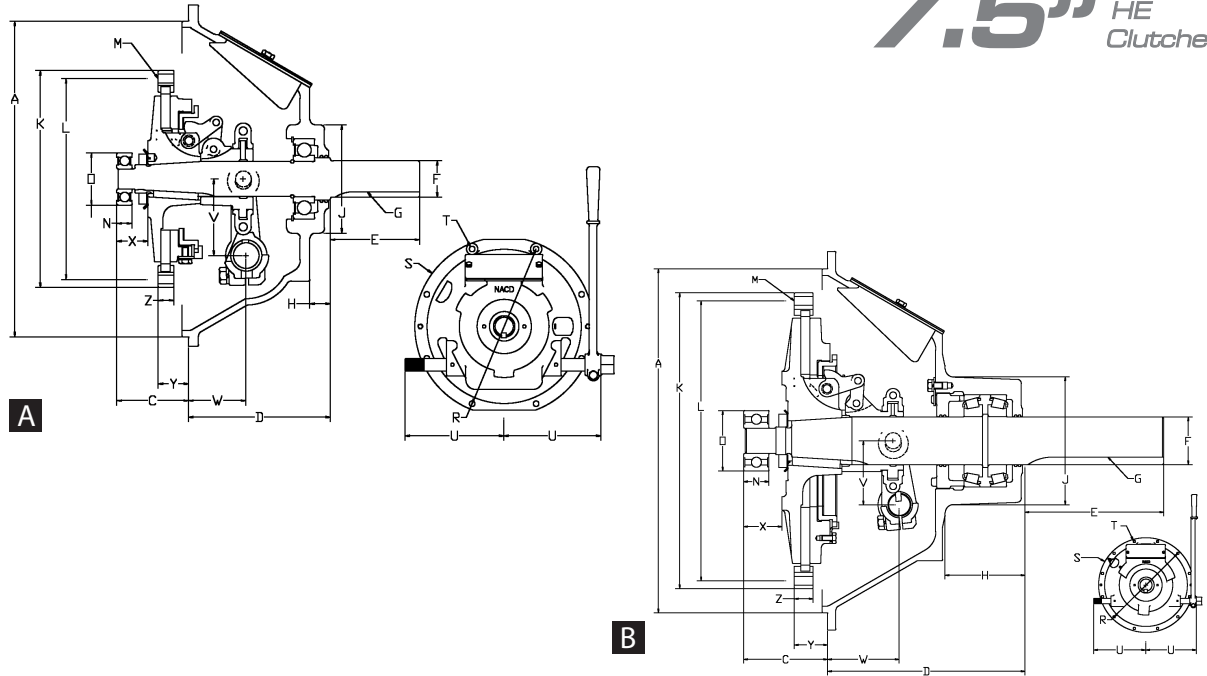
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All dimensions are in inches unless otherwise specified. Listing subject to change without notice. * The figure listed below is torque capacity of the clutch. To determine the actual clutch torque capacity required for any given application the torque service factor must be considered. See the chart and formula on the back side of this sheet to calculate the proper clutch torque capacity for your application or contact your NACD sales representative for recommendations. The illustrations are shown for identification of dimensions only. They are not intended to necessarily depict the actual size, exact shape or internal configuration of the part numbers listed.

** Other pilot bearing sizes may be available.

PTO Part Number	Illustration Reference	Ball or Tapered Roller Brng Type	Model			Application (in-line or side loaded)	Type of Facing	Type Release Bearing	Clutch Torque Capacity lb. Ft *	A	C	D	Shaft		
			SAE Hsg Size	Clutch Size	Qty. of Facings								E Length	F Dia. + .000-.001	G Keyway
414565AM	A	Ball	6	7.5"	1	Inline/Limited	Organic	Bronze	175	10.500	2.81	5.56	3.50	1.437	3/8 x 3/16
414200AM	A	Ball	6	7.5"	1	Inline/Limited	Organic	Ball	175	10.500	2.81	5.56	3.50	1.437	3/8 x 3/16
411298AM	A	Ball	5	7.5"	1	Inline/Limited	Organic	Bronze	175	12.375	2.81	5.56	3.50	1.437	3/8 x 3/16
411298T	B	Tapered	5	7.5"	1	Inline/Limited	Organic	Bronze	175	12.375	2.81	7.06	3.50	1.437	3/8 x 3/16
411298T1	B	Tapered	5	7.5"	1	Both	Organic	Bronze	175	12.375	2.81	7.06	3.50	1.437	3/8 x 3/16
437300AM	B	Tapered	5	7.5"	1	Both	Organic	Ball	175	12.375	2.81	7.06	3.50	1.437	3/8 x 3/16
411298T750	B	Tapered	5	7.5"	1	Both	Organic	Bronze	175	12.375	2.81	7.06	3.50	1.750	7/16 x 7/32
434194AM	B	Tapered	5	7.5"	1	Both	Organic	Ball	175	12.375	2.81	7.06	3.50	1.437	3/8 x 3/16
411238AM	A	Ball	4	7.5"	1	Both	Organic	Bronze	175	14.250	2.81	5.56	3.50	1.437	3/8 x 3/16
411238AM1	A	Ball	4	7.5"	1	Both	Organic	Bronze	175	14.250	2.81	5.56	2.81	1.437	3/8 x 3/16
411238T	B	Tapered	4	7.5"	1	Inline/Limited	Organic	Bronze	175	14.250	2.81	7.06	3.50	1.437	3/8 x 3/16
411238T1	B	Tapered	4	7.5"	1	Inline/Limited	Organic	Bronze	175	14.250	2.81	7.06	3.50	1.437	3/8 x 3/16
411238T750	B	Tapered	4	7.5"	1	Both	Organic	Bronze	175	14.250	2.81	7.06	3.50	1.750	7/16 x 7/32
434193AM	A	Ball	4	7.5"	1	Both	Organic	Ball	175	14.250	2.81	5.56	3.50	1.437	3/8 x 3/16
434196T	B	Tapered	4	7.5"	1	Both	Organic	Ball	175	14.250	2.81	7.06	3.50	1.437	3/8 x 3/16

PTO Part Number	H	J	K	L	M (holes)		N	O see note**	R	S	T (holes)		U	V	W	X	Y	Z
					Qty.	Dia.					Qty.	Dia.						
414565AM	.81	4.25	9.50	8.750	8	.344	.5906	2.0472	11.250	12.12	8	.406	7.75	3.00	2.25	1.22	1.19	.62
414200AM	.81	4.25	9.50	8.750	8	.344	.5906	2.0472	11.250	12.12	8	.406	7.75	3.00	2.25	1.22	1.19	.62
411298AM	.81	4.25	9.50	8.750	8	.344	.5906	2.0472	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
411298T	2.31	4.00	9.50	8.750	8	.344	.5906	2.0472	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
411298T1	2.31	4.00	9.50	8.750	8	.344	.6260	1.3780	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
437300AM	2.31	4.00	9.50	8.750	8	.344	.6260	1.3780	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
411298T750	2.31	4.00	9.50	8.750	8	.344	.5906	2.0472	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
434194AM	2.31	4.00	9.50	8.750	8	.344	.5906	2.0472	13.125	14.00	8	.406	7.75	3.00	2.25	1.22	1.19	.62
411238AM	.88	4.25	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
411238AM1	.88	4.25	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
411238T	2.81	4.00	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
411238T1	2.81	4.00	9.50	8.750	8	.344	.6260	1.3780	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
411238T750	2.81	4.00	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
434193AM	.88	4.25	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62
434196T	2.81	4.00	9.50	8.750	8	.344	.5906	2.0472	15.00	15.88	12	.433	7.75	3.00	2.25	1.22	1.19	.62

with **7.5"** HE Clutches

Allowable Side Load Pulls:

The following formula can be used to calculate applied side load. Loads are calculated on proper tensioning of belts. If belts are tightened excessively, the resulting side load can exceed these limits

$$L = \frac{126000 \times \text{H.P.}}{N \times D} \times F \times A$$

L = Actual Applied Load (lbs.)

N = Shaft Speed (rev./min.)

D = Pitch Diameter of Sheaves, etc. (in.)

F = Load Factor (see below)

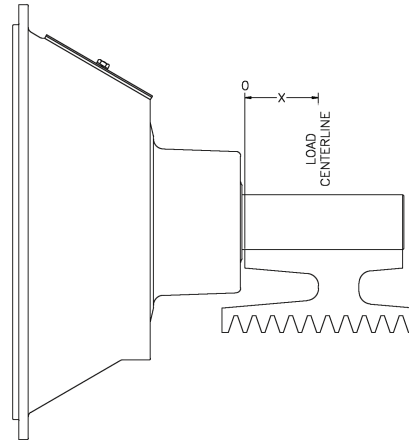
1.0 for chain

2.5 for V belt drive

3.5 for flat belt drive

A = 1.0 for low & moderate duty drives

1.4 for severe duty shock loads or large inertia loads (reciprocating compressors, crusher, chippers, planers, etc.)



Power Take-Off Part Numbers		411238AM1, 411238AM, 411298AM, 414200AM, 414565AM, 434193AM			
RPM	X" Distance				
	0	1"	2"	3"	
1600	904	804	724	658	
1900	854	459	683	621	
2200	813	723	651	592	
2500	779	693	624	567	
2800	750	667	601	546	
3100	725	645	581	528	

Power Take-Off Part Numbers		411298T, 411298T750, 411238T, 411238T750, 434194AM, 434196T			
RPM	X" Distance				
	0	1"	2"	3"	
1600	1350	1225	1030	820	
1900	1300	1175	995	790	
2200	1250	1125	960	760	
2500	1200	1075	925	730	
2800	1150	1025	890	700	
3100	1100	975	855	670	

Power Take-Off Part Numbers		437300AM, 411238T1, 411298T1		
RPM	X" Distance			
	0	1"	2"	
1600	1350	1100	800	
1900	1300	1050	765	
2200	1250	1000	730	
2500	1200	950	695	
2800	1150	900	660	
3100	1100	850	625	

Required Clutch Torque Capacity Calculation:

Required Clutch Torque = Maximum Engine Torque x Service Factor

Blower or Vacuum

- Centrifugal with free flow of air 1.7
- With high start-up inertia or subject to choking of air supply 4.0

Compressors

- Reciprocating, 1 or 2 cylinders 4.0
- Reciprocating, 3 or more cylinders 2.5
- Roto screw or turbine 2.0

Conveyor

- Fed uniformly 1.5
- Not fed uniformly 2.0
- Reciprocating 3.0

Drills 2.0

Generator 2.0

Pump

- Centrifugal or turbine 1.5
- Dredge 2.0
- Mud or reciprocating 3.0

Rock Crusher, Hammer Mill 3.0

Snow Blower 2.0

Wood Chipper, Saw Mill 3.0

Ratings: Shafts, bearings and clutch capacities are rated on a conservative basis. For unusually heavy starting loads, frequent engagement service, or if prime mover is engine of less than 4 cylinders, consult our sales representatives for recommendations. Extremely low speed engines require special consideration.