

DURST PUMP DRIVE APPLICATION DATA SHEET 1 of 2

To determine the proper pump drive for your application please use the following steps to calculate your Maximum Rated Input Torque. Then fill in the questions on Page 2.

! CAUTION – Always insure that your powertrain is free of torsional vibration. DURST is not responsible for damage or failure due to unaddressed torsional vibration!

Service Factor Chart (S.F.)

Prime Mover	Duration of Service	Driven Machine Load Classification Multiplier		
		Uniform	Moderate Shock	Heavy Shock
Electric Motor, Steam Turbine, or Hydraulic Motor	Occasional ½ hr. per day	0.50	0.80	1.25
	Intermittent 3 hr. per day	0.80	1.00	1.50
	Over 3 hr. per day and incl. 10 hr. per day	1.00	1.25	1.75
	Over 10 hr. per day	1.25	1.50	2.00
Multi-Cylinder Internal Combustion Engine	Occasional ½ hr. per day	0.80	1.00	1.50
	Intermittent 3 hr. per day	1.00	1.25	1.75
	Over 3 hr. per day and incl. 10 hr. per day	1.25	1.50	2.00
	Over 10 hr. per day	1.50	1.75	2.25
Single Cylinder Internal Combustion Engine	Occasional ½ hr. per day	1.00	1.25	1.75
	Intermittent 3 hr. per day	1.25	1.50	2.00
	Over 3 hr. per day and incl. 10 hr. per day	1.50	1.75	2.25
	Over 10 hr. per day	1.75	2.00	2.50

Input Torque Calculations

$$\text{Torque} = (\text{H.P.} / \text{RPM}) \times 5252$$

$$\text{Maximum Rated Input Torque} = \text{Max Torque} \times \text{Service Factor}$$

Durst Pump Drive Maximum Input Torque Rating

<u>1 Pad</u>	<u>2 Pad</u>	<u>3 Pad</u>	<u>4 Pad</u>
1PD06 - 1040 lb-ft	2PD06 - 1040 lb-ft	3PD06 - 1040 lb-ft	4PD08 - 1524 lb-ft
1PD09 - 1710 lb-ft	2PD08 - 1524 lb-ft	3PD08 - 1524 lb-ft	4PD09 - 1710 lb-ft
	2PD10 - 1996 lb-ft	3PD10 - 1996 lb-ft	4PD11 - 2153 lb-ft

Duty Service for Clutch Models

Clutch	Recommended Maximum Working Torque (lb.ft.)	Recommended Engine HP			Max. Scale Operating Speed
		LD	ND	HD	
8"	229	55	43	30	3050
10"	327	86	67	47	2650
11½"	386	111	87	61	2200
11½" Dbl Plate	907	203	129	80	2200
14"	810	169	131	92	1950
14" Dbl Plate	1620	308	196	122	1950

Light Duty (LD)

The clutch should engage within two (2) seconds and start the load less than six (6) times per hour. The pressure plate should not exceed handle able temperatures.

Normal Duty (ND)

The clutch should start the heaviest load within three (3) seconds with starting frequencies up to thirty (30) engagements per hour.

$$\text{Engagement slip (sec.)} \times \text{Engagements (per hr.)} < 90$$

Heavy Duty (HD)

The clutch should start the heaviest load within four (4) seconds with starting frequencies up to sixty (60) engagements per hour.

$$\text{Engagement slip (sec.)} \times \text{Engagements (per hr.)} < 180 \quad (\text{Note: If } > 180 \text{ must contact Engineering})$$

1. What is the prime mover of the pump drive?

Type: Electric Motor Gasoline Engine Diesel Engine Other _____
 Brand Name: _____ Model No. _____
Engine/Motor Power _____ Hp @ _____ rpm **Max P.D. Torque Req'd** _____ lb-ft @ _____ rpm
Duty Cycle: _____ Hrs/Day _____ Days/Week _____ Weeks/Year

2. Select model of pump drive per Maximum Input Torque Rating chart from page 1:

<u>1 Pad</u>	<u>2 Pad</u>	<u>3 Pad</u>	<u>4 Pad</u>
<input type="checkbox"/> 1PD06	<input type="checkbox"/> 2PD06	<input type="checkbox"/> 3PD06	<input type="checkbox"/> 4PD08
<input type="checkbox"/> 1PD09	<input type="checkbox"/> 2PD08	<input type="checkbox"/> 3PD08	<input type="checkbox"/> 4PD09
	<input type="checkbox"/> 2PD10	<input type="checkbox"/> 3PD10	<input type="checkbox"/> 4PD11

Indicate Pump Drive Mounting Orientation: Normal / Horizontal Vertical / Inverted

3. Specify gear ratio of the pump drive:

1:1 Ratio Increasing Ratio: _____ Decreasing Ratio: _____

4. Specify size of the engine housing the pump drive will be attached to
(If the pump drive is NOT mounted to an engine, skip to question 7):

SAE 0 SAE 1 SAE 2 SAE 3 SAE 4 Other _____

5. Specify size of drive plate that is required **(If a clutch is needed, skip to question 6):**

SAE 18 SAE 14 SAE 11 ½ SAE 10 SAE 8 Other _____

6. Specify Clutch Size, Type, and Pilot Bearing Diameter:

SAE 14 - double plate – 1.00" offset SAE 11 ½ - double plate – 1.56" offset
 SAE 11 ½ - single plate – 1.56" offset SAE 10 - single plate – 2.12" offset other _____

6a. Pilot Bearing: **1** 3.94 dia. (for SP214) **2** 3.15 dia. (for SP214) **3** 2.83 dia. (all others)

7. Specify type of shaft needed to drive the pump drive
(For NON-drive plate and NON-clutch driven pump drives only):

<input type="checkbox"/> Companion Flange Spicer 1810	<input type="checkbox"/> Companion Flange Spicer 1610	<input type="checkbox"/> Keyed Shaft 2 ½ dia. w/ .63 keyway	<input type="checkbox"/> Keyed Shaft 2 ¼ dia. W/ .50 keyway
<input type="checkbox"/> Splined Shaft 29T-12/24	<input type="checkbox"/> Splined Shaft 20T-10/20	<input type="checkbox"/> Splined Shaft 15T-8/16	<input type="checkbox"/> Other _____

8. Specify pump pad size (SAE A, B, C, D, D2, E, or F) and pump pad orientation (H-horizontal, V-vertical, or 45°); pump pads are numbered according to the drawings below:

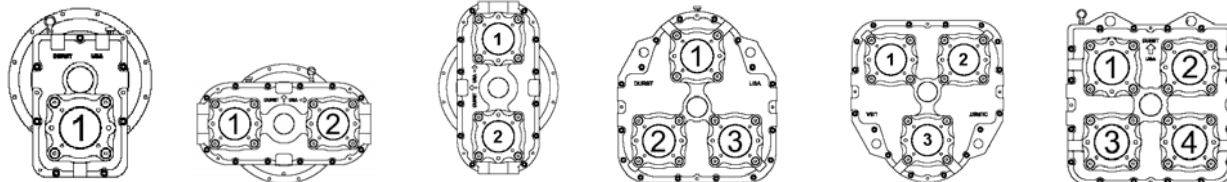
Pad 1 _____ Pad 2 _____ Pad 3 _____ Pad 4 _____

9. Specify pump spline location according to the drawings below;
 SAE A (9T-16/32), SAE B (13T-16/32), SAE BB (15T-16/32), SAE C (14T-12/24), SAE CC (17-12/24T),
 SAE D or E (13T-8/16), SAE F (15T-8/16), 21T-16/32, 23T-16/32, 27T-16/32, or other:

Pad 1 _____ Pad 2 _____ Pad 3 _____ Pad 4 _____

10. Identify dipstick (required on all normal/horizontal mountings) location, as viewed from output side of gearbox:

Left Right (N/A on 1PD06) None for Vertical / Inverted units



Requested By: _____ **Company:** _____ **Date:** _____
Email Address: _____ **Phone:** _____