

DIESEL ENGINE/PUMP RATIO WORK SHEET

NOTE: This form is to be used as a guide and may change without notice.

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S.O. _____ Pump Model _____ Impeller(s) _____
 Engine _____ HP _____ RPM _____ Injectors _____
 Truck Transmission _____ Torque Converter Model _____ Ratio _____ Altitude _____ Ft
 _____ GPM @ _____ PSI _____ GPM @ _____ PSI _____ GPM @ _____ PSI

Impeller RPM = _____ Impeller RPM = _____ Impeller RPM = _____

Ratio: _____
 Eng RPM _____

Net curve HP available	A	_____	_____	_____	_____	_____
* Deduction for losses	B	_____	_____	_____	_____	_____
A minus B	C	_____	_____	_____	_____	_____
** HP deduction for altitude	D	_____	_____	_____	_____	_____
C minus D	E	_____	_____	_____	_____	_____
*** HP deduction for Auto Trans	F	_____	_____	_____	_____	_____
E minus F = available HP	G	_____	_____	_____	_____	_____
Published pump HP required plus 5%	H	_____	_____	_____	_____	_____
Surplus HP	I	_____	_____	_____	_____	_____

*Suggested percentage deductions that must be taken from engine power curve for losses due to engine accessories and engine variation are as follows:
 For Caterpillar, Cummins, Ford, GMC & Mack, deduct 12% from net engine power curve;
 For Detroit Diesel and International deduct 15% from net engine power curve.
 NOTE: Computer scan will also provide predictable HP deductions.

**Determine horsepower deduction for altitude on a per application basis.

For engines not mentioned and/or questions not answered, please determine HP deduction by interpreting engine curve or contact engine distributor and/or manufacturer for their guidelines.

*** Automatic Transmission Deduction:					Determine maximum stall torque: _____ x _____ x _____ = _____ Maximum Engine Torque Torque Converter Ratio Highest Numerical Trans Ratio Stall Torque	Pump Transmission Driveline Ratings: 1.75"-10 4100 lb-ft 2"-10 6100 lb-ft 2"-38 9100 lb-ft 2.35"-46 16000 lb-ft Refer to F-1052 for permissible speeds and loads for driven sprockets.
RPM	AT-500	MD-Series MT-Series	RPM	HT-700		
1000	5 HP	3 HP	1000	7 HP		
1500	6 HP	4 HP	1300	9 HP		
1750	7 HP	5 HP	1500	11 HP		
2000	8 HP	6 HP	1600	12 HP		
2250	9 HP	7 HP	1700	13 HP		
2500	10 HP	8 HP	1800	14 HP		
2750	11 HP	9 HP	1900	15 HP		
3000	12 HP	10 HP	2000	16 HP		

Booster Reel Performance at 60 GPM:
 _____ x _____ = _____
 Maximum Engine RPM Ratio Impeller RPM Maximum PSI from pump curve

NOTE: Refer to pump performance curve and determine maximum pressure that can be obtained. Determine if sufficient engine power is available.

DIESEL ENGINE/PUMP RATIO WORK SHEET – METRIC

NOTE: This form is to be used as a guide and may change without notice.

S.O. _____ Pump Model _____ Impeller(s) _____
 Engine _____ kW _____ RPM _____ Injectors _____
 Truck Transmission _____ Torque Converter Model _____ Ratio _____ Altitude _____ m
 _____ l/min @ _____ bar _____ l/min @ _____ bar _____ l/min @ _____ bar

Impeller RPM = _____ Impeller RPM = _____ Impeller RPM = _____

Ratio: _____
 Eng RPM _____

Net curve kW available	A	_____	_____	_____	_____	_____
* Deduction for losses	B	_____	_____	_____	_____	_____
A minus B	C	_____	_____	_____	_____	_____
** kW deduction for altitude	D	_____	_____	_____	_____	_____
C minus D	E	_____	_____	_____	_____	_____
*** kW deduction fro Auto Trans	F	_____	_____	_____	_____	_____
E minus F = available kW	G	_____	_____	_____	_____	_____
Published pump kW required plus 5%	H	_____	_____	_____	_____	_____
Surplus kW	I	_____	_____	_____	_____	_____

*Suggested percentage deductions that must be taken from engine power curve for losses due to engine accessories and engine variation are as follows:
 For Caterpillar, Cummins, Ford, GMC & Mack, deduct 12% from net engine power curve;
 For Detroit Diesel and International deduct 15% from net engine power curve.
 NOTE: Computer scan will also provide predictable kW deductions.

**Determine kilowatt deduction for altitude on a per application basis.

For engines not mentioned and/or questions not answered, please determine kW deduction by interpreting engine curve or contact engine distributor and/or manufacturer for their guidelines.

*** Automatic Transmission Deduction:					Determine maximum stall torque: _____ x _____ x _____ = _____ Maximum Engine Torque Torque Converter Ratio Highest Numerical Trans Ratio Stall Torque	Pump Transmission Driveline Ratings: 1.75"–10 5560 N•m 2"–10 8272 N•m 2"–38 12340 N•m 2.35"–46 21760 N•m Refer to F–1052 for permissible speeds and loads for driven sprockets.
RPM	AT–500	MD–Series MT–Series	RPM	HT–700		
1000	3.7 kW	2.2 kW	1000	5.2 kW		
1500	4.5 kW	3.0 kW	1300	6.7 kW		
1750	5.2 kW	3.7 kW	1500	8.2 kW		
2000	6.0 kW	4.5 kW	1600	8.9 kW		
2250	6.7 kW	5.2 kW	1700	9.7 kW		
2500	7.5 kW	6.0 kW	1800	10.4 kW		
2750	8.2 kW	6.7 kW	1900	11.2 kW		
3000	8.9 kW	7.5 kW	2000	11.9 kW		
Booster Reel Performance at 227 l/min _____ x _____ = _____ -- _____ Maximum Engine RPM Ratio Impeller RPM Maximum bar from pump curve						NOTE: Refer to pump performance curve and determine maximum pressure that can be obtained. Determine if sufficient engine power is available.