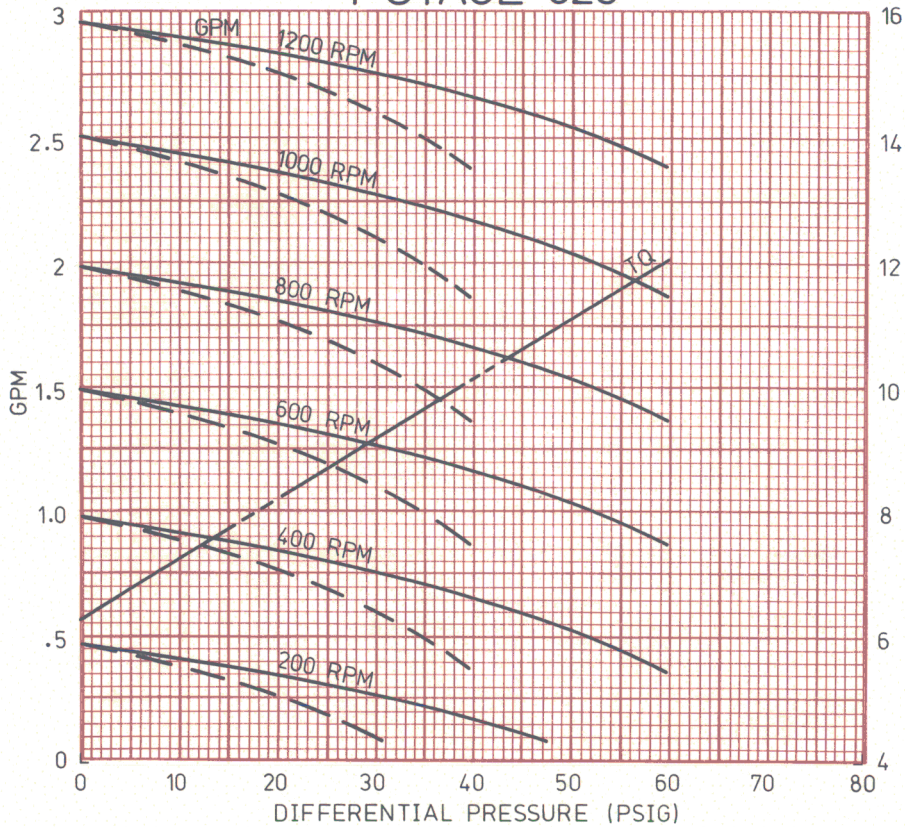


1 STAGE 025



RPM	NPSHR (FT)
200	.4
400	.9
600	1.3
800	1.7
1000	2.1
1200	2.5

STARTING TORQUE 18 IN/LB
 SEE GENERAL INSTRUCTIONS
 CURVE BASED ON 70°F WATER
 — 70 DUROMETER -- 50 DUROMETER
 $HP = \frac{(TQ)(RPM)}{63025}$

TABLE A ABRASIVE CONDITIONS MAX. PRESSURE & SPEED

ABRASION	NONE	LIGHT	MEDIUM	HEAVY
MAX. PRESS	60	60	35	15
MAX. SPEED	1200	900	600	300

TABLE B APPARENT VISCOSITY - TORQUE ADDITIVE (IN/LB) & MAX. SPEED

CPS	100	1000	2500	5000	10,000	50,000	100,000	150,000	200,000
TQ	1.2	3.4	5.2	7.2	10	21	28	34	39
RPM	1200	1200	1200	600	320	80	40	30	25

TABLE C WATER BASE SLURRY TORQUE ADDITIVE (IN/LB)

NOTE: MAXIMUM PARTICLE SIZE .15 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	13	22	37
30	39	67	111
50	65	111	185

TABLE D STARTING TORQUE MULTIPLIERS (IN/LB) FOR TEMPERATURE

ROTOR \ °F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

TORQUE (IN/LB)
 HP / 100 RPM

HP / 100 RPM

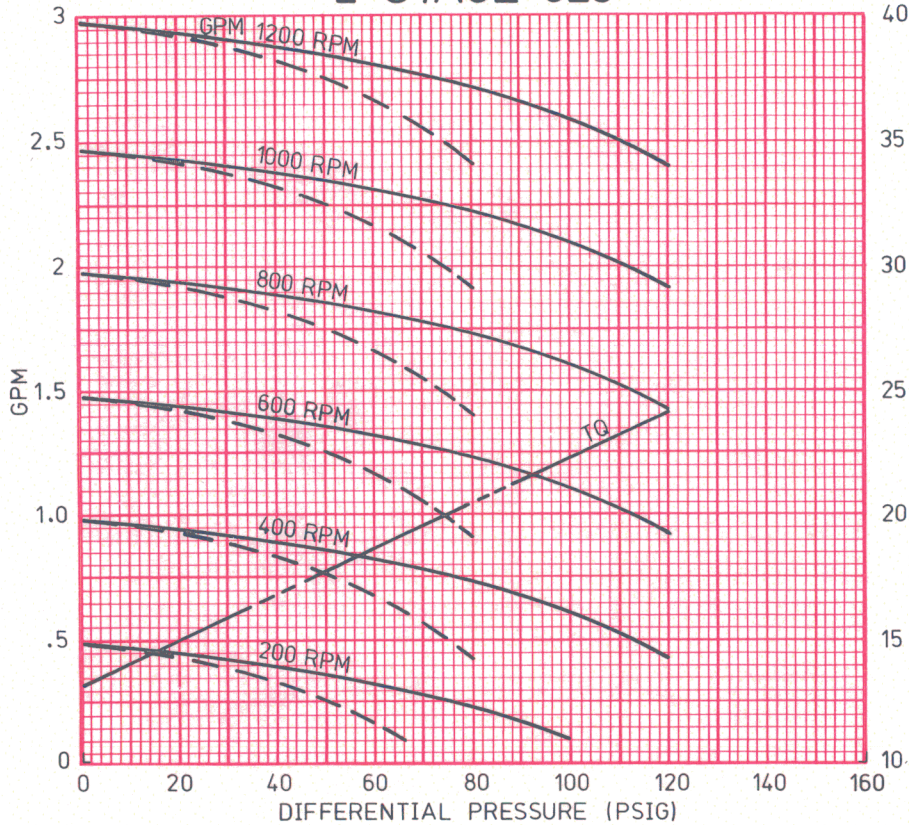
TORQUE (IN/LB)

- 1) DETERMINE WHICH TABLE (B OR C) APPLIES TO YOUR FLUID AND FIND THE APPROPRIATE CHARACTERISTICS. DETERMINE THE TORQUE ADDITIVE AND ADD IT TO THE TORQUE FOUND FOR WATER ON THE CURVE. IF YOUR FLUID IS A COMBINATION OF BOTH SLURRY AND VISCOUS MATERIAL. DETERMINE THE APPROPRIATE TORQUE ADDITIVE FROM BOTH TABLES AND ONLY USE THE GREATER OF THE TWO TO ADD TO THE TORQUE FOUND FOR WATER.
- 2) FIND THE FACTOR FROM TABLE D THAT CORRESPONDS TO THE TEMPERATURE OF YOUR FLUID AND STYLE OF ROTOR. MULTIPLY THE STARTING TORQUE SHOWN BY THIS FACTOR TO OBTAIN THE CORRECTED STARTING TORQUE.

COMPARE THE RESULTS FROM STEPS 1 AND 2. THE REQUIRED TORQUE WILL BE THE GREATER OF THE TWO.

71X025

2 STAGE 025



RPM	NPSHR (FT)
200	.4
400	.9
600	1.3
800	1.7
1000	2.1
1200	2.6

STARTING TORQUE 24 IN/LB
 SEE GENERAL INSTRUCTIONS
 CURVE BASED ON 70°F WATER
 — 70 DUROMETER -- 50 DUROMETER

$$HP = \frac{(TQ)(RPM)}{63025}$$

TABLE A ABRASIVE CONDITIONS MAX. PRESSURE & SPEED

ABRASION	NONE	LIGHT	MEDIUM	HEAVY
MAX. PRESS	120	120	70	30
MAX. SPEED	1200	900	600	300

TABLE B APPARENT VISCOSITY - TORQUE ADDITIVE (IN/LB) & MAX. SPEED

CPS	100	1000	2500	5000	10,000	50,000	100,000	150,000	200,000
TQ	2.3	6.8	11	15	20	41	56	68	78
RPM	1200	1200	1200	600	320	80	40	30	25

TABLE C WATER BASE SLURRY TORQUE ADDITIVE (IN/LB)

NOTE: MAXIMUM PARTICLE SIZE .15 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	17	29	49
30	52	88	147
50	86	147	244

TABLE D STARTING TORQUE MULTIPLIERS (IN/LB) FOR TEMPERATURE

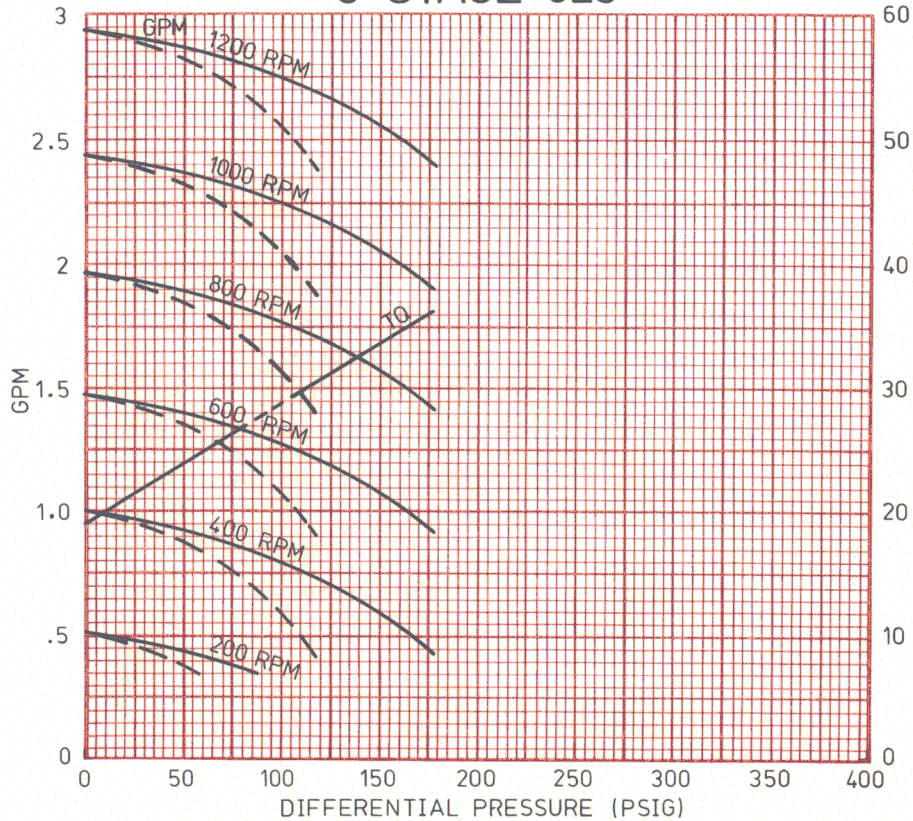
ROTOR / °F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

- 1) DETERMINE WHICH TABLE (B OR C) APPLIES TO YOUR FLUID AND FIND THE APPROPRIATE CHARACTERISTICS. DETERMINE THE TORQUE ADDITIVE AND ADD IT TO THE TORQUE FOUND FOR WATER ON THE CURVE. IF YOUR FLUID IS A COMBINATION OF BOTH SLURRY AND VISCOUS MATERIAL. DETERMINE THE APPROPRIATE TORQUE ADDITIVE FROM BOTH TABLES AND ONLY USE THE GREATER OF THE TWO TO ADD TO THE TORQUE FOUND FOR WATER.
- 2) FIND THE FACTOR FROM TABLE D THAT CORRESPONDS TO THE TEMPERATURE OF YOUR FLUID AND STYLE OF ROTOR. MULTIPLY THE STARTING TORQUE SHOWN BY THIS FACTOR TO OBTAIN THE CORRECTED STARTING TORQUE.

COMPARE THE RESULTS FROM STEPS 1 AND 2. THE REQUIRED TORQUE WILL BE THE GREATER OF THE TWO.

72X025

3 STAGE 025



RPM	NPSHR (FT)
200	.4
400	.9
600	1.3
800	1.7
1000	2.1
1200	2.6

STARTING TORQUE 30 IN/LB
 SEE GENERAL INSTRUCTIONS
 CURVE BASED ON 70°F WATER
 — 70 DUROMETER -- 50 DUROMETER
 $HP = \frac{(TQ)(RPM)}{63025}$

TABLE A ABRASIVE CONDITIONS MAX. PRESSURE & SPEED

ABRASION	NONE	LIGHT	MEDIUM	HEAVY
MAX. PRESS	180	180	105	45
MAX. SPEED	1200	900	600	300

TABLE B APPARENT VISCOSITY - TORQUE ADDITIVE (IN/LB) & MAX. SPEED

CPS	100	1000	2500	5000	10,000	50,000	100,000	150,000	200,000
TQ	3.5	10	16	22	30	62	84	102	117
RPM	1200	1200	1200	600	320	80	40	30	25

TABLE C WATER BASE SLURRY TORQUE ADDITIVE (IN/LB)

NOTE: MAXIMUM PARTICLE SIZE .15 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	20	35	57
30	61	104	172
50	102	173	287

TABLE D STARTING TORQUE MULTIPLIERS (IN/LB) FOR TEMPERATURE

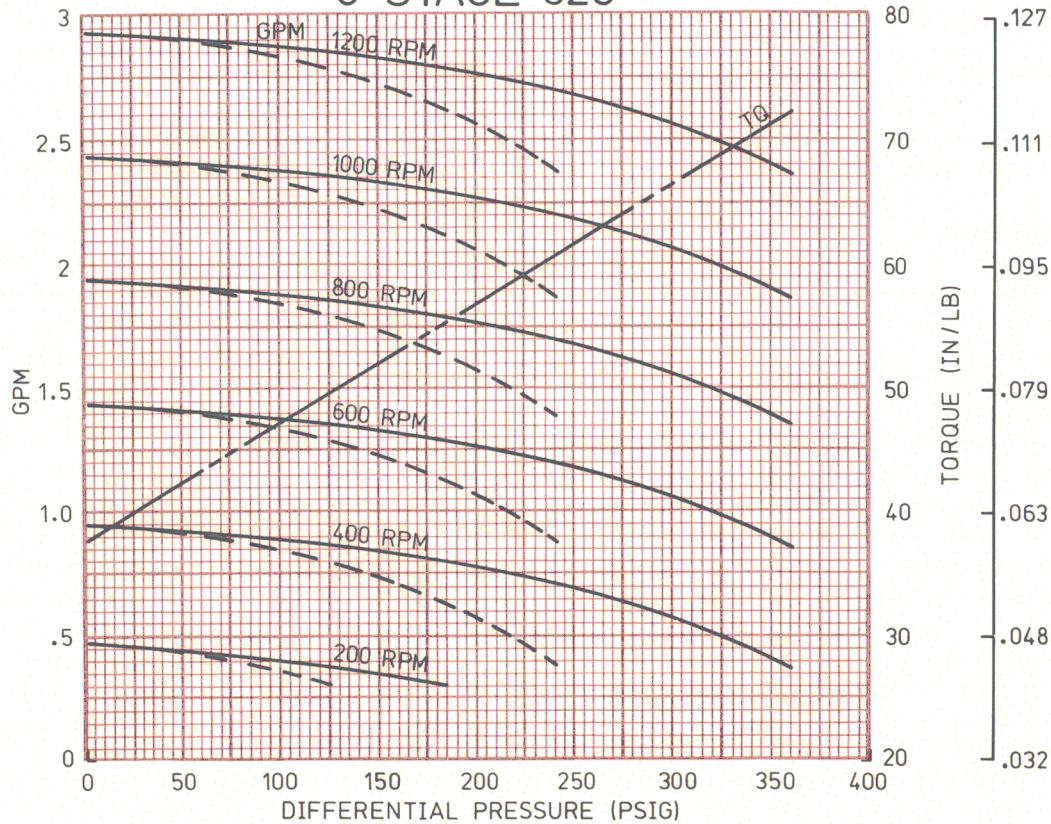
ROTOR \ °F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

- 1) DETERMINE WHICH TABLE (B OR C) APPLIES TO YOUR FLUID AND FIND THE APPROPRIATE CHARACTERISTICS. DETERMINE THE TORQUE ADDITIVE AND ADD IT TO THE TORQUE FOUND FOR WATER ON THE CURVE. IF YOUR FLUID IS A COMBINATION OF BOTH SLURRY AND VISCOUS MATERIAL. DETERMINE THE APPROPRIATE TORQUE ADDITIVE FROM BOTH TABLES AND ONLY USE THE GREATER OF THE TWO TO ADD TO THE TORQUE FOUND FOR WATER.
- 2) FIND THE FACTOR FROM TABLE D THAT CORRESPONDS TO THE TEMPERATURE OF YOUR FLUID AND STYLE OF ROTOR. MULTIPLY THE STARTING TORQUE SHOWN BY THIS FACTOR TO OBTAIN THE CORRECTED STARTING TORQUE.

COMPARE THE RESULTS FROM STEPS 1 AND 2. THE REQUIRED TORQUE WILL BE THE GREATER OF THE TWO.

73X025

6 STAGE 025



RPM	NPSHR (FT)
200	.4
400	.9
600	1.3
800	1.7
1000	2.1
1200	2.6

STARTING TORQUE 66 IN/LB
 SEE GENERAL INSTRUCTIONS
 CURVE BASED ON 70°F WATER
 — 70 DUROMETER -- 50 DUROMETER
 $HP = \frac{(TQ)(RPM)}{63025}$

TABLE A ABRASIVE CONDITIONS MAX. PRESSURE & SPEED

ABRASION	NONE	LIGHT	MEDIUM	HEAVY
MAX. PRESS	360	360	210	90
MAX. SPEED	1200	900	600	300

TABLE B APPARENT VISCOSITY - TORQUE ADDITIVE (IN/LB) & MAX. SPEED

CPS	100	1000	2500	5000	10,000	50,000	100,000	150,000	200,000
TQ	7	20	31	43	59	124	168	204	234
RPM	1200	1200	1200	600	320	80	40	30	25

TABLE C WATER BASE SLURRY TORQUE ADDITIVE (IN/LB)

NOTE: MAXIMUM PARTICLE SIZE .15 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	27	46	76
30	80	137	227
50	134	228	379

TABLE D STARTING TORQUE MULTIPLIERS (IN/LB) FOR TEMPERATURE

ROTOR °F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

- 1) DETERMINE WHICH TABLE (B OR C) APPLIES TO YOUR FLUID AND FIND THE APPROPRIATE CHARACTERISTICS. DETERMINE THE TORQUE ADDITIVE AND ADD IT TO THE TORQUE FOUND FOR WATER ON THE CURVE. IF YOUR FLUID IS A COMBINATION OF BOTH SLURRY AND VISCOUS MATERIAL. DETERMINE THE APPROPRIATE TORQUE ADDITIVE FROM BOTH TABLES AND ONLY USE THE GREATER OF THE TWO TO ADD TO THE TORQUE FOUND FOR WATER.
- 2) FIND THE FACTOR FROM TABLE D THAT CORRESPONDS TO THE TEMPERATURE OF YOUR FLUID AND STYLE OF ROTOR. MULTIPLY THE STARTING TORQUE SHOWN BY THIS FACTOR TO OBTAIN THE CORRECTED STARTING TORQUE.

COMPARE THE RESULTS FROM STEPS 1 AND 2. THE REQUIRED TORQUE WILL BE THE GREATER OF THE TWO.

76X025