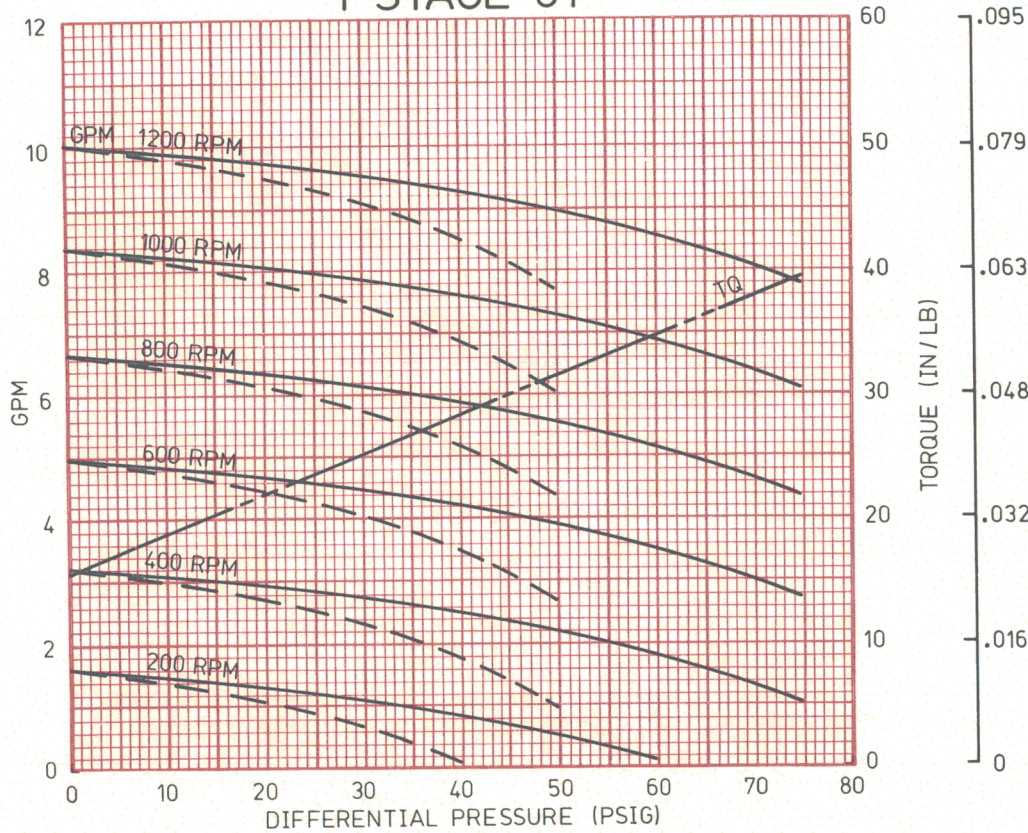


1 STAGE 01



RPM	NPSHR (FT)
200	.6
400	1.3
600	2
800	2.6
1000	3.2
1200	3.9

STARTING TORQUE 48 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	75	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	4	12	18	25	34	70	96	116	131
RPM	1200	1200	1200	600	320	80	40	30	25

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

NOTE: MAXIMUM PARTICLE SIZE .2 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	27	41	65
30	80	123	196
50	133	204	327

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

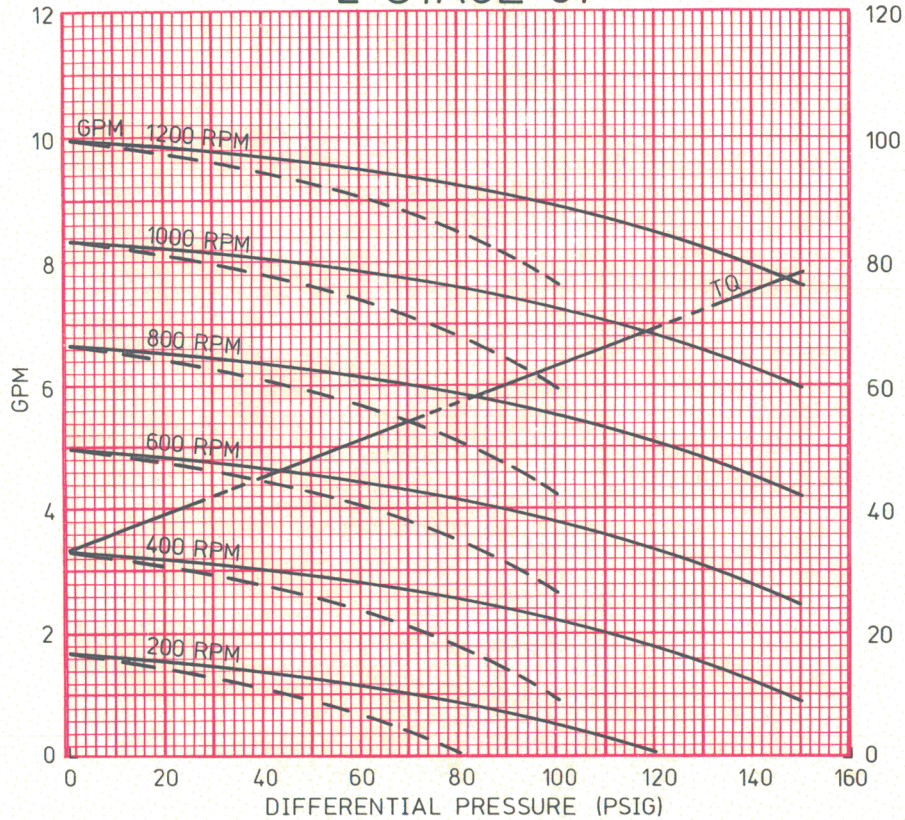
ROTOR	°F	70	100	125	150	175	200	230	250	275	300	350
STD		1.0	1.1	1.3	1.6	1.8						
SGL U/S						1.1	1.3	1.6	1.8	2.0		
DBL U/S								1.0	1.1	1.3	1.6	1.8

- 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.

71X01

2 STAGE 01



RPM	NPSHR (FT)
200	.6
400	1.3
600	2
800	2.6
1000	3.2
1200	3.9

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	150	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	8	24	36	49	67	140	192	232	262
RPM	1200	1200	1200	600	320	80	40	30	25

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

NOTE: MAXIMUM PARTICLE SIZE .2 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	35	54	86
30	105	162	259
50	175	270	432

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

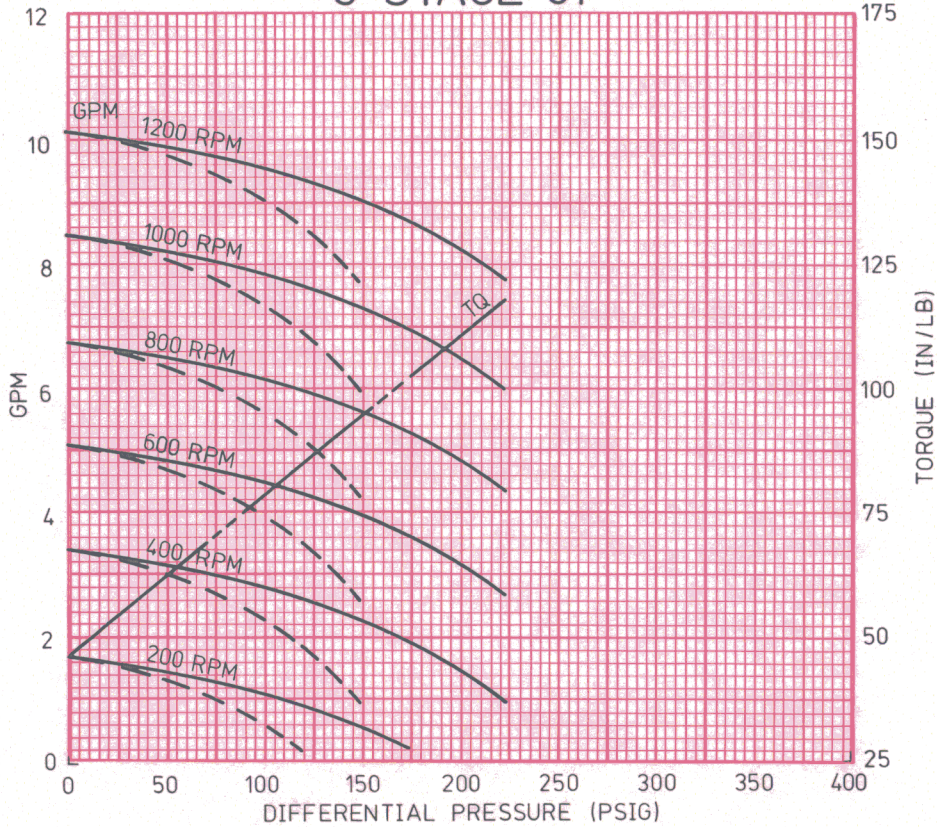
ROTOR / °F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

- 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.

72X01

3 STAGE 01



RPM	NPSHR (FT)
200	.6
400	1.3
600	2
800	2.6
1000	3.2
1200	3.9

STARTING TORQUE 90 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	225	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	13	36	54	74	101	210	288	348	393
RPM	1200	1200	1200	600	320	80	40	30	25

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

NOTE: MAXIMUM PARTICLE SIZE .2 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	41	63	102
30	124	190	305
50	206	317	508

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

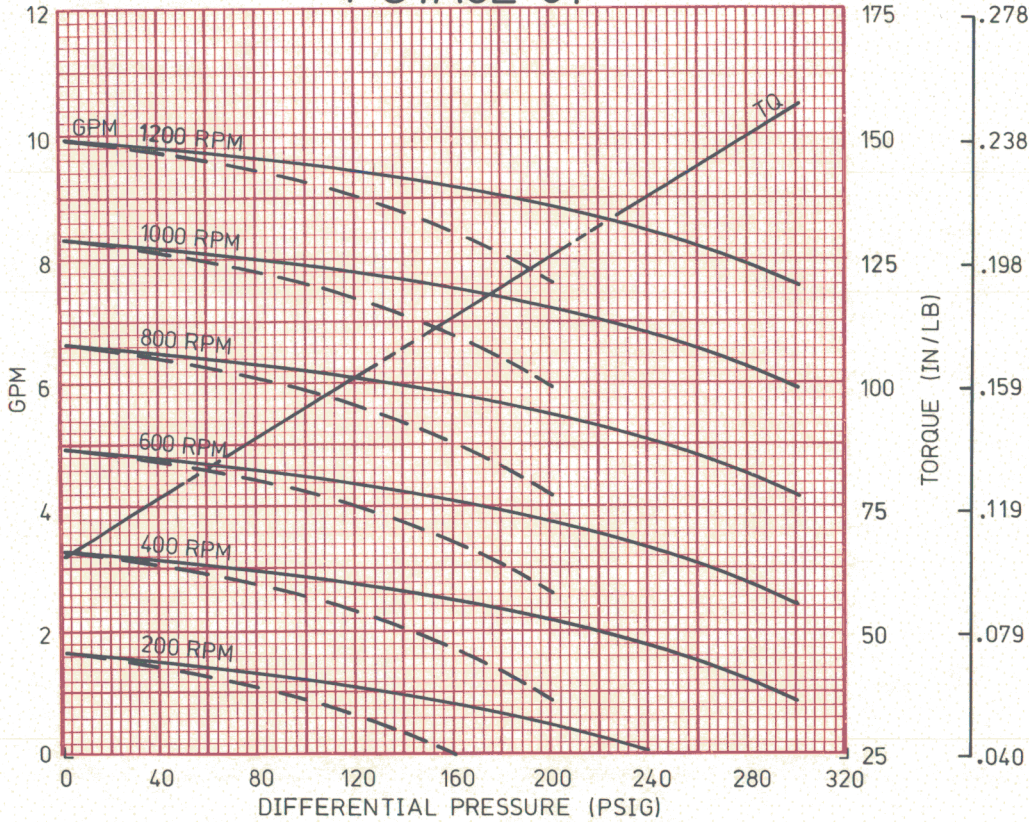
°F	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

- 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.

73X01

4 STAGE 01



RPM	NPSHR (FT)
200	.6
400	1.3
600	2
800	2.6
1000	3.2
1200	3.9

STARTING TORQUE 120 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	300	240	140	60
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	17	48	72	98	135	280	384	464	524
RPM	1200	1200	1200	600	320	80	40	30	25

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

NOTE: MAXIMUM PARTICLE SIZE .2 INCH

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	46	71	114
30	139	213	342
50	231	356	570

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

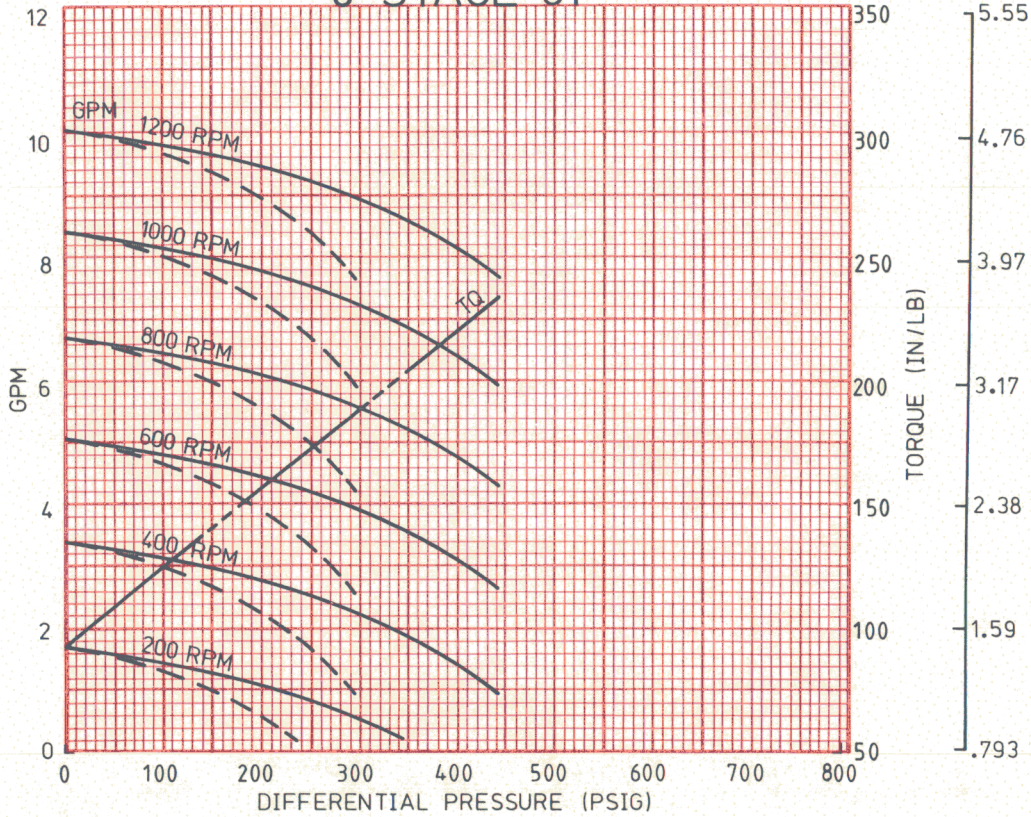
ROTOR	70	100	125	150	175	200	230	250	275	300	350
STD	1.0	1.1	1.3	1.6	1.8						
SGL U/S					1.1	1.3	1.6	1.8	2.0		
DBL U/S							1.0	1.1	1.3	1.6	1.8

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

74X01

6 STAGE 01



RPM	NPSHR (FT)
200	.6
400	1.3
600	2
800	2.6
1000	3.2
1200	3.9

STARTING TORQUE 180 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	450	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	26	72	108	148	202	420	576	696	786
RPM	1200	1200	1200	600	320	80	40	30	25

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

NOTE: MAXIMUM PARTICLE SIZE

SIZE %	FINE .01" TO .04"	MEDIUM .04" TO .08"	COARSE .08" & LARGER
10	82	126	204
30	248	380	610
50	412	634	1016

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

°F	70	100	125	150	175	200	230	250	275	300	350
ROTOR											
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.

76X01