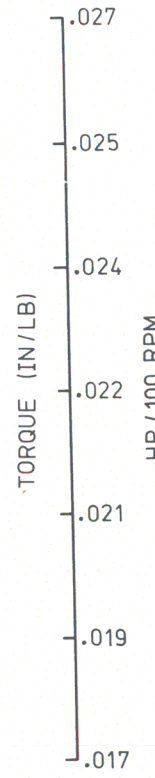
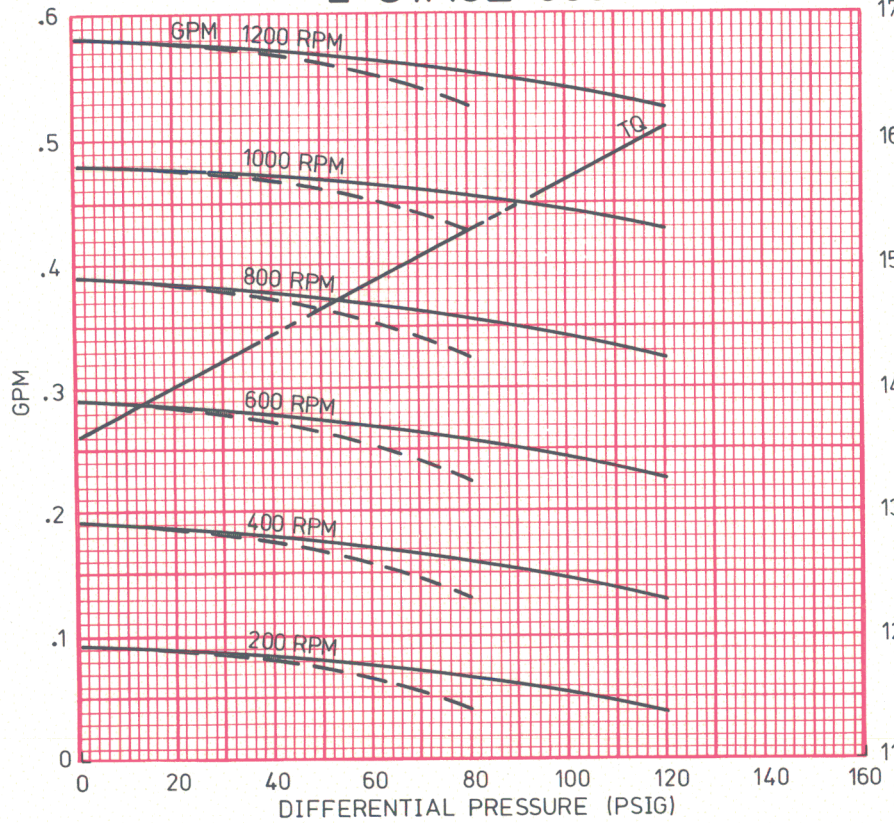


2 STAGE 006



| RPM | NPSHR (FT) |
|------|------------|
| 200 | .3 |
| 400 | .6 |
| 600 | .9 |
| 800 | 1.2 |
| 1000 | 1.5 |
| 1200 | 1.8 |

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 | 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 | .5 | 1.4 | 2 | 3 | 4 | 8.4 | 11.6 | 14 | 16 |
| RPM | 1200 | 1200 | 1200 | 600 | 320 | 80 | 40 | 30 | 25 |

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

NOTE: MAXIMUM PARTICLE SIZE .08 INCH

| SIZE % | FINE .01" TO .04" | MEDIUM .04" TO .08" | COARSE .08" & LARGER |
|--------|-------------------|---------------------|----------------------|
| 10 | 9.4 | 17.5 | — |
| 30 | 28 | 52.5 | — |
| 50 | 47 | 87.5 | — |

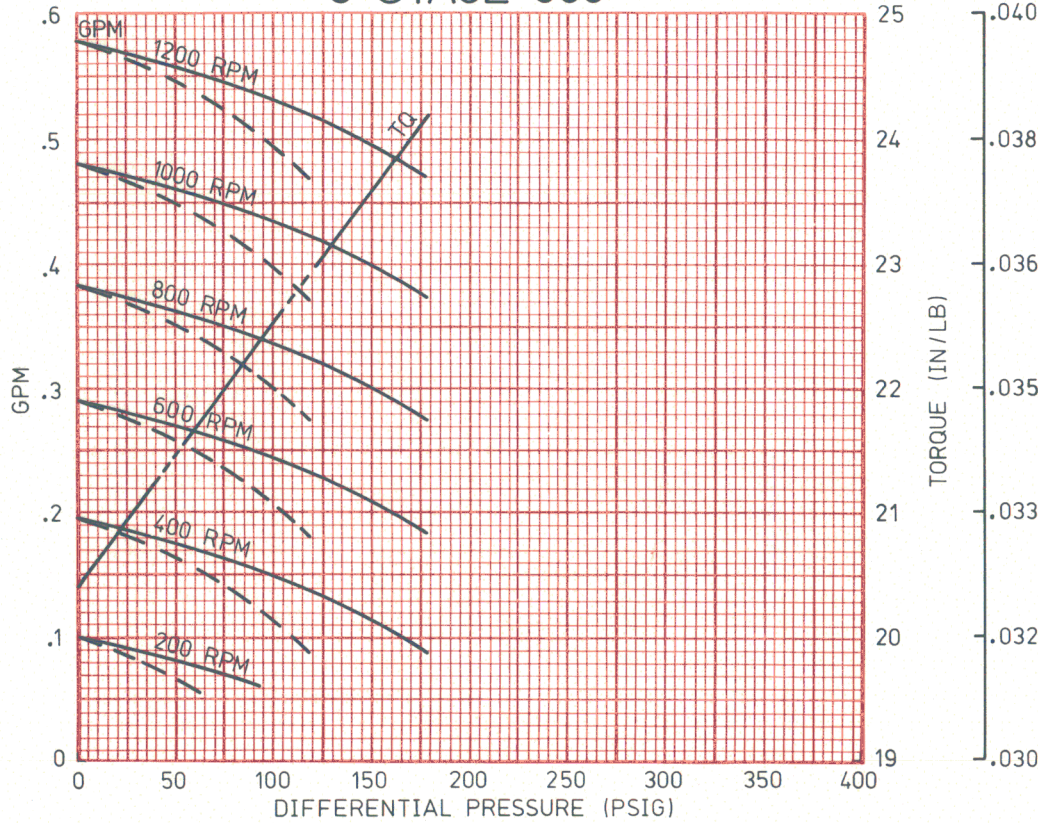
TABLE D STARTING TORQUE MULTIPLIERS (IN/LB) FOR TEMPERATURE

| 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.

72X006

3 STAGE 006



| RPM | NPSHR (FT) |
|------|------------|
| 200 | .3 |
| 400 | .6 |
| 600 | .9 |
| 800 | 1.2 |
| 1000 | 1.5 |
| 1200 | 1.8 |
| | |

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 | 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 | .7 | 2 | 3.2 | 4.4 | 6 | 12.6 | 17.4 | 21 | 24 |
| RPM | 1200 | 1200 | 1200 | 600 | 320 | 80 | 40 | 30 | 25 |

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

NOTE: MAXIMUM PARTICLE SIZE .08 INCH

| SIZE % | FINE .01" TO .04" | MEDIUM .04" TO .08" | COARSE .08" & LARGER |
|--------|-------------------|---------------------|----------------------|
| 10 | 11 | 20.5 | — |
| 30 | 33 | 62 | — |
| 50 | 55 | 103 | — |

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

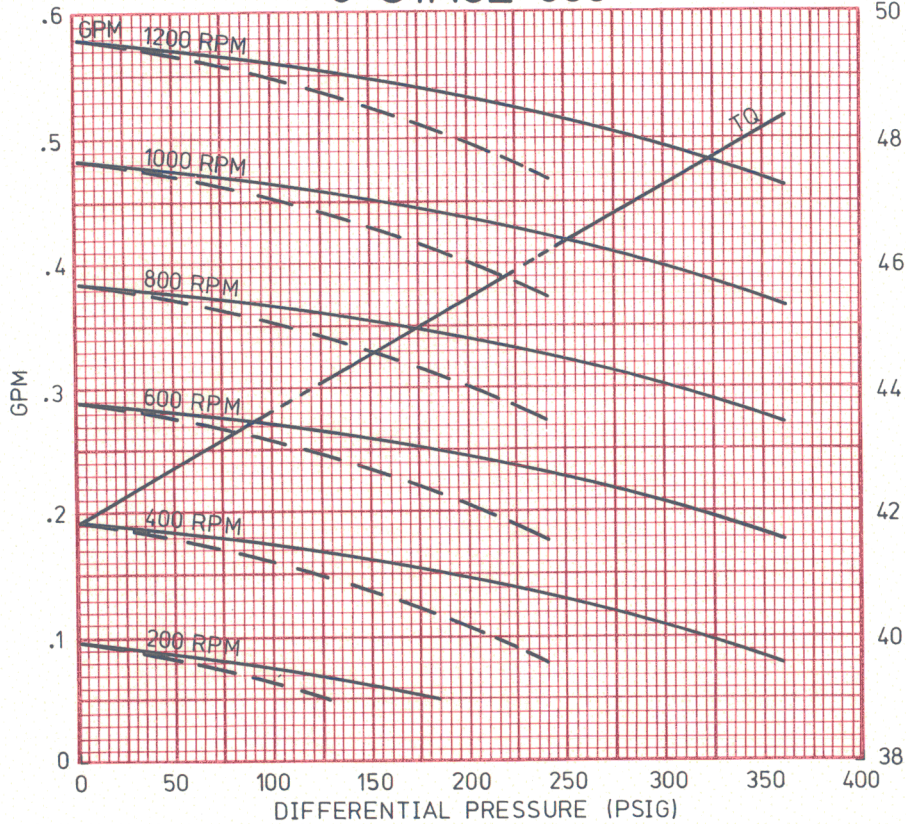
| ROTOR / °F | 70 | 100 | 125 | 150 | 175 | 200 | 230 | 250 | 275 | 300 | 350 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| STD | 1.0 | 1.1 | 1.3 | 1.6 | 1.8 | | | | | | |
| SGL U/S | | | | | 1.1 | 1.3 | 1.6 | 1.8 | 2.0 | | |
| DBL U/S | | | | | | | 1.0 | 1.1 |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

73X006

6 STAGE 006



| RPM | NPSHR (FT) |
|------|------------|
| 200 | .3 |
| 400 | .6 |
| 600 | .9 |
| 800 | 1.2 |
| 1000 | 1.5 |
| 1200 | 1.8 |

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 | 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 | 1.4 | 4.2 | 6.3 | 9 | 12 | 26 | 35 | 42 | 48 |
| RPM | 1200 | 1200 | 1200 | 600 | 320 | 80 | 40 | 30 | 25 |

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

NOTE: MAXIMUM PARTICLE SIZE .08 INCH

| SIZE % | FINE .01" TO .04" | MEDIUM .04" TO .08" | COARSE .08" & LARGER |
|--------|-------------------|---------------------|----------------------|
| 10 | 15 | 27 | — |
| 30 | 44 | 82 | — |
| 50 | 73 | 136 | — |

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.

76X006