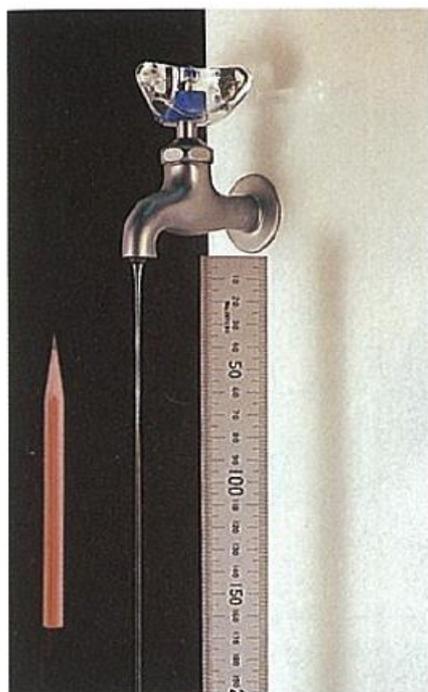


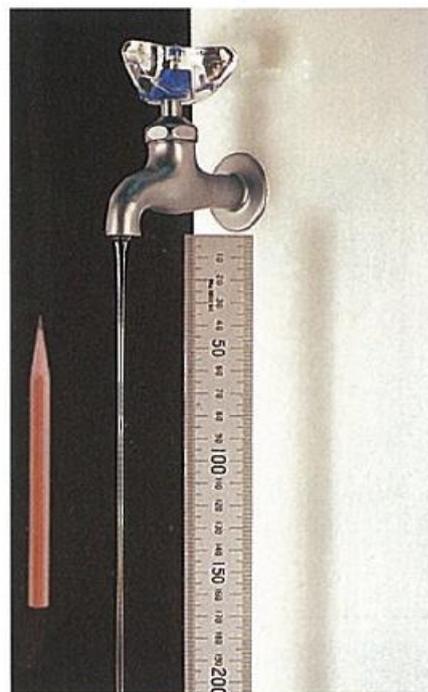
第2章 水理資料

1 蛇口から放水した水量比較

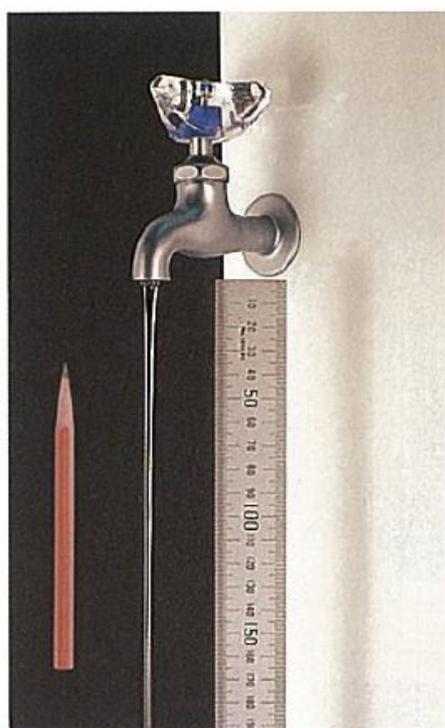
5L/h



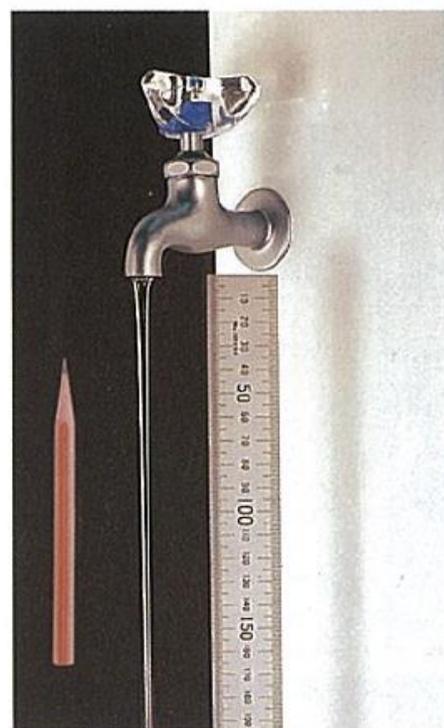
10L/h



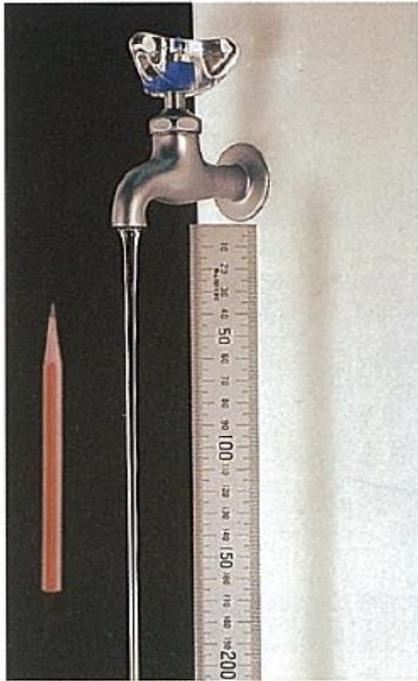
20L/h



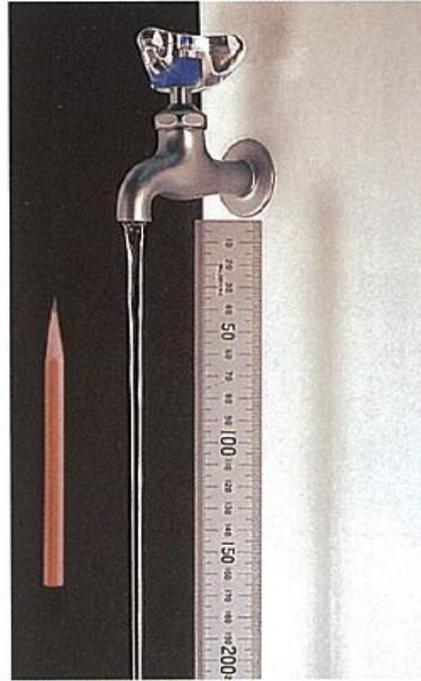
30L/h



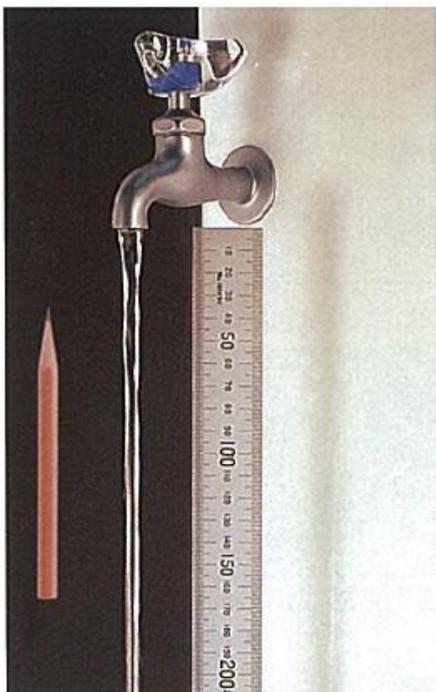
50L/h



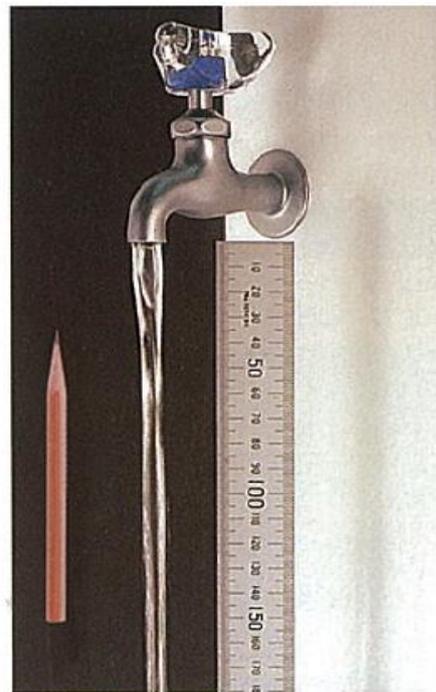
70L/h



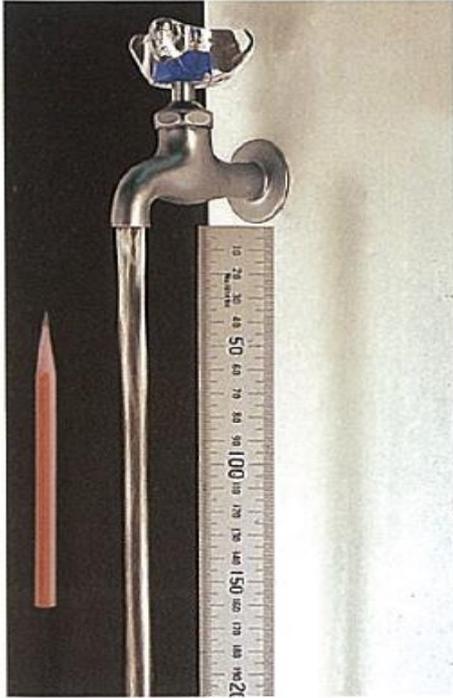
100L/h



200L/h



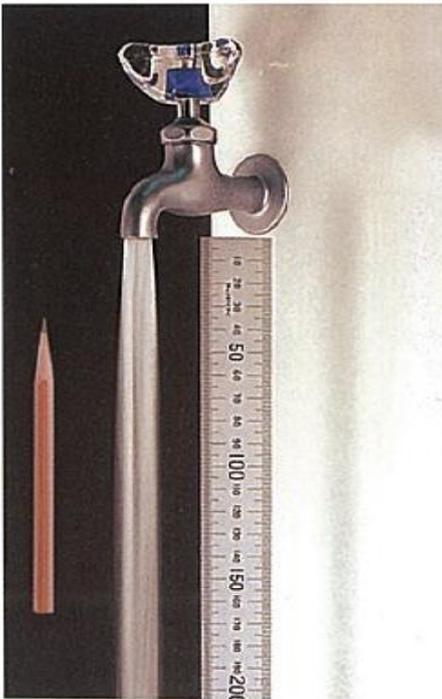
400L/h



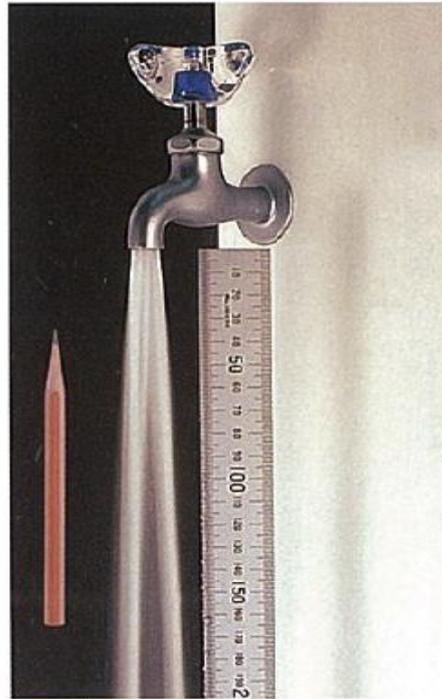
600L/h



1000L/h



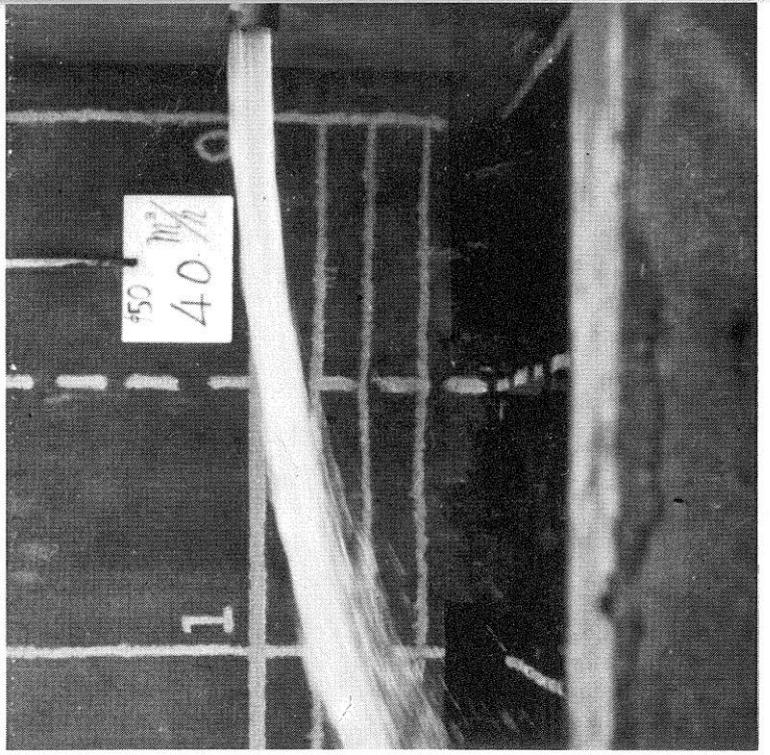
1500L/h



2 目でわかる放水量

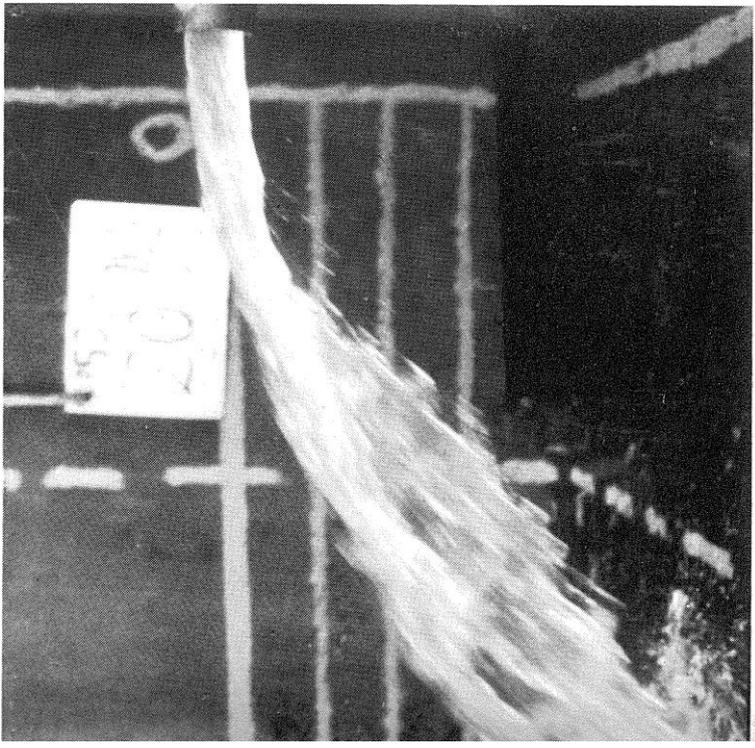
(昭和61年 株式会社 ライフライン情報社 漏水量測定グラフより)

φ50



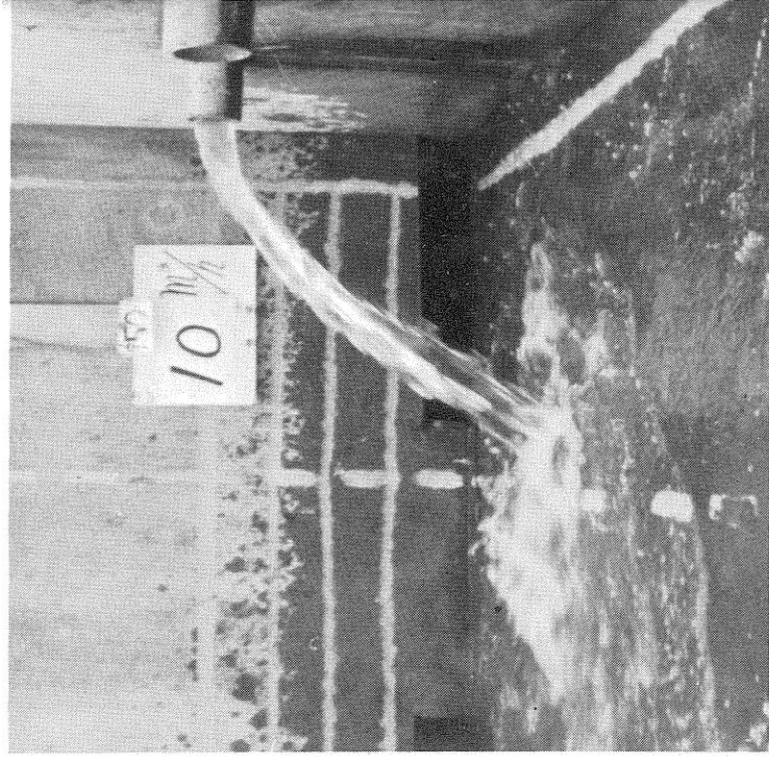
50mm 管の放水状況 (水落距離約 1.5m)

| | | | |
|----|------------------|-----|-------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 40.00 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 44.75 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 49.05 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 52.95 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 56.55 m ³ /h |



50mm 管の放水状況 (水落距離約 0.8m)

| | | | |
|----|------------------|-----|-------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 20.00 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 22.40 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 24.50 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 26.50 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 28.55 m ³ /h |



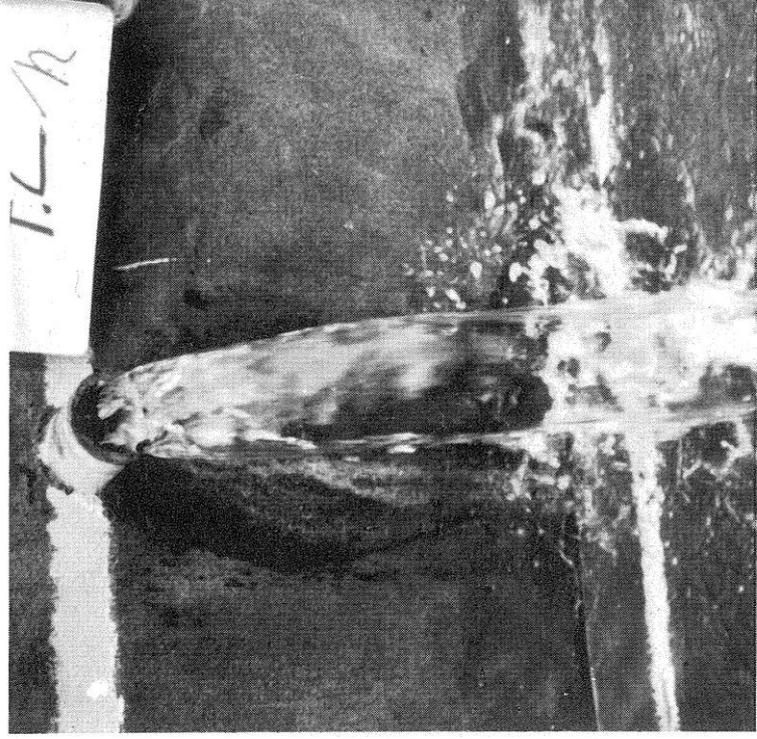
50mm 管の放水状況（水落距離約 0.4m）

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 10.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 11.19 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 12.24 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 13.20 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 14.14 m ³ /h |



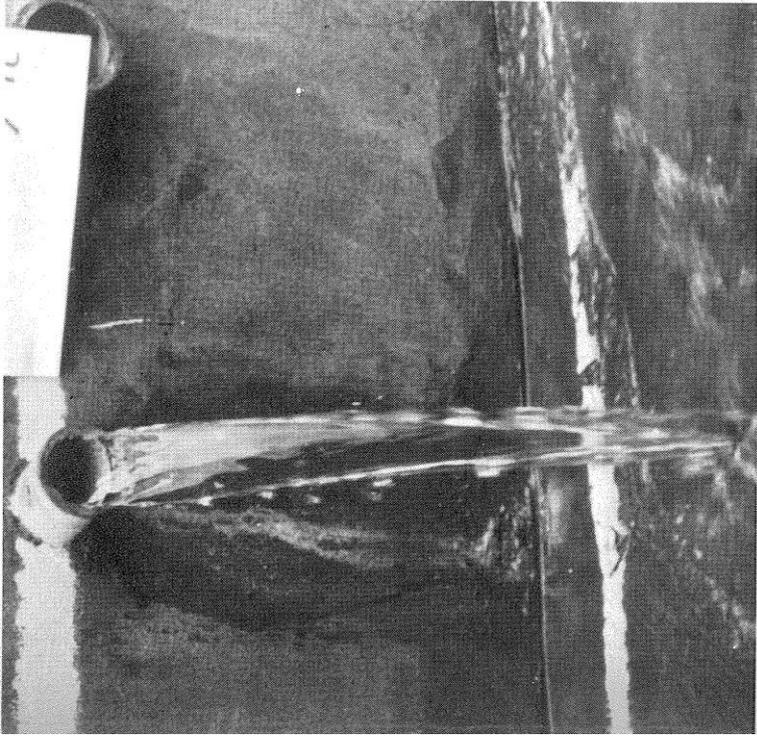
50mm 管の放水状況（水落距離約 0.3m）

| | | | | |
|----|----------|---------|-----|------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 5.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 5.59 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 6.13 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 6.63 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 7.07 m ³ /h |



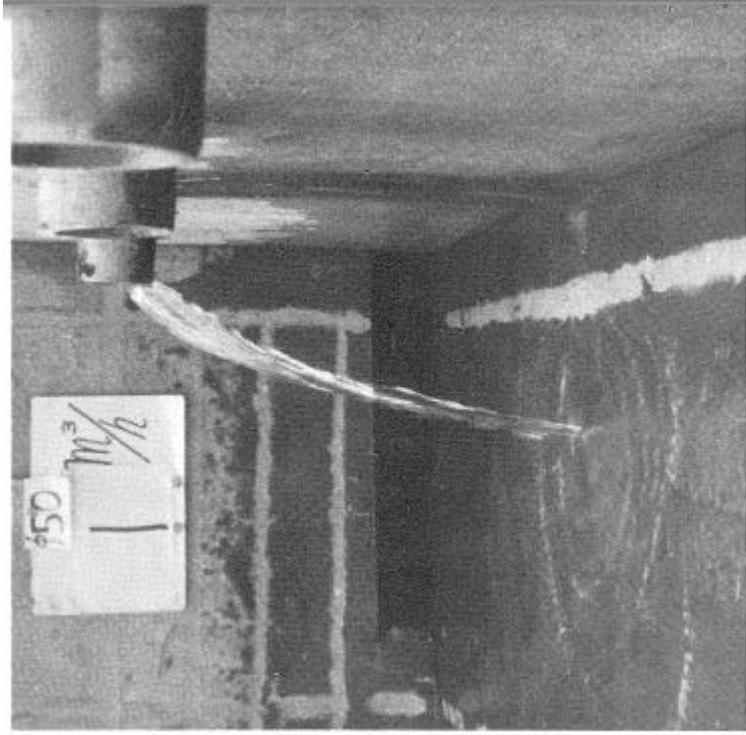
50mm 管の放水状況 (口径いっぱい)

| | | | |
|----|------------------|-----|------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 4.20 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 4.70 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 5.14 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 5.55 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 5.95 m ³ /h |



50mm 管の放水状況 (口径の 1/2 まで)

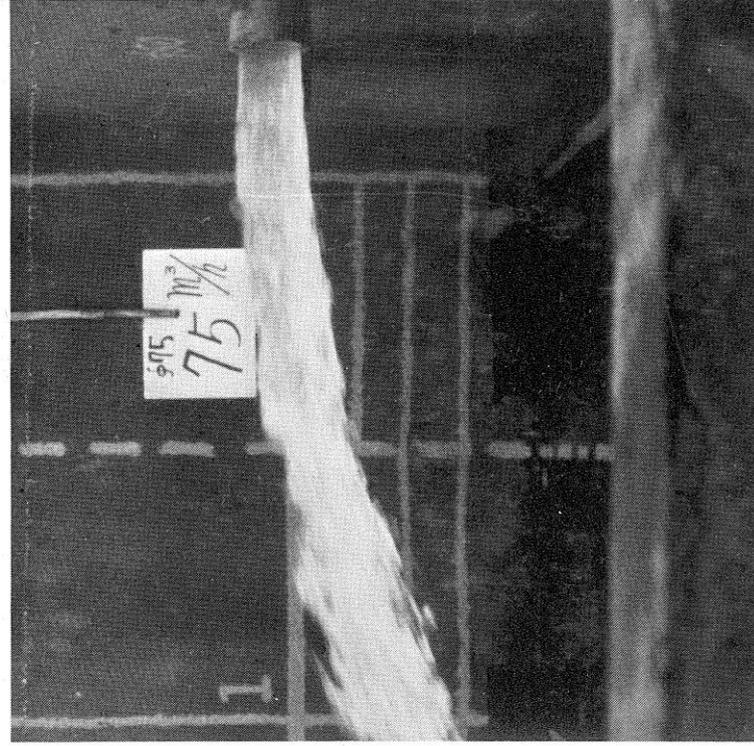
| | | | |
|----|------------------|-----|------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 2.40 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 2.68 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 2.94 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 3.18 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 3.39 m ³ /h |



50mm 管の放水状況（口径の 1/3 まで）

| | | | | |
|----|----------|---------|-----|------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 1.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 1.12 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 1.22 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 1.32 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 1.41 m ³ /h |

φ75



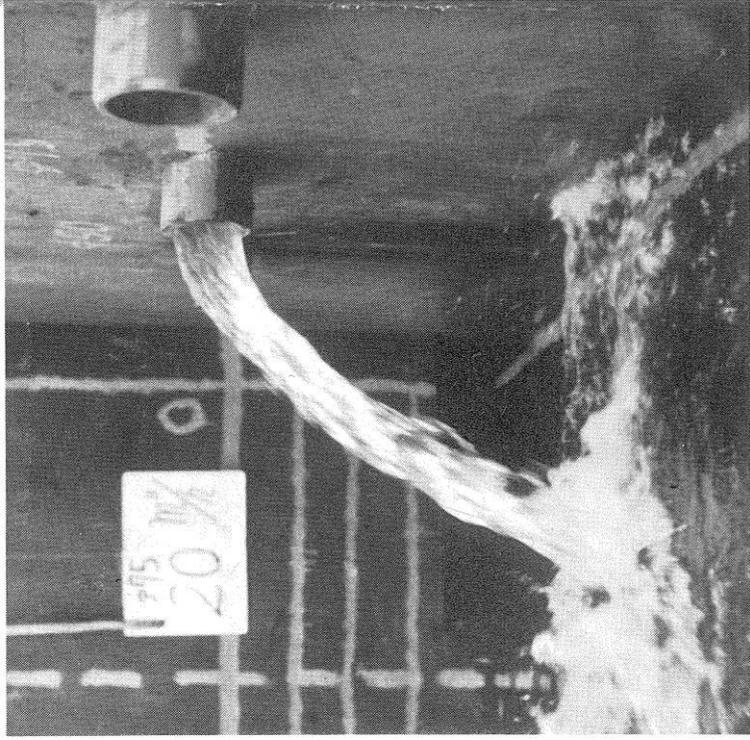
75mm 管の放水状況 (水落距離約 1.3m)

| | | | | |
|----|----------|---------|-----|--------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 75.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 84.00 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 92.00 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 99.40 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 106.00 m ³ /h |



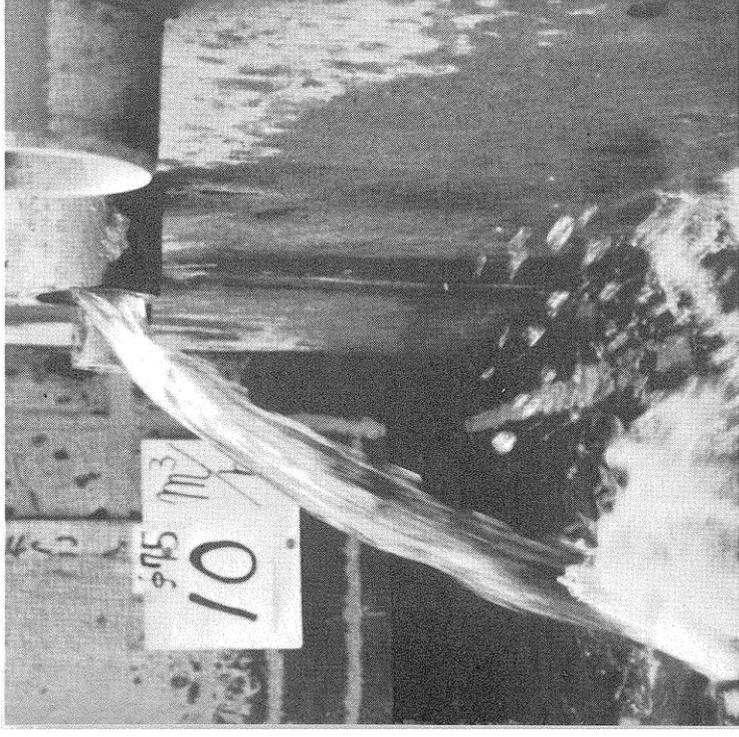
75mm 管の放水状況 (水落距離約 0.7m)

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 40.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 44.60 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 49.00 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 52.90 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 56.50 m ³ /h |



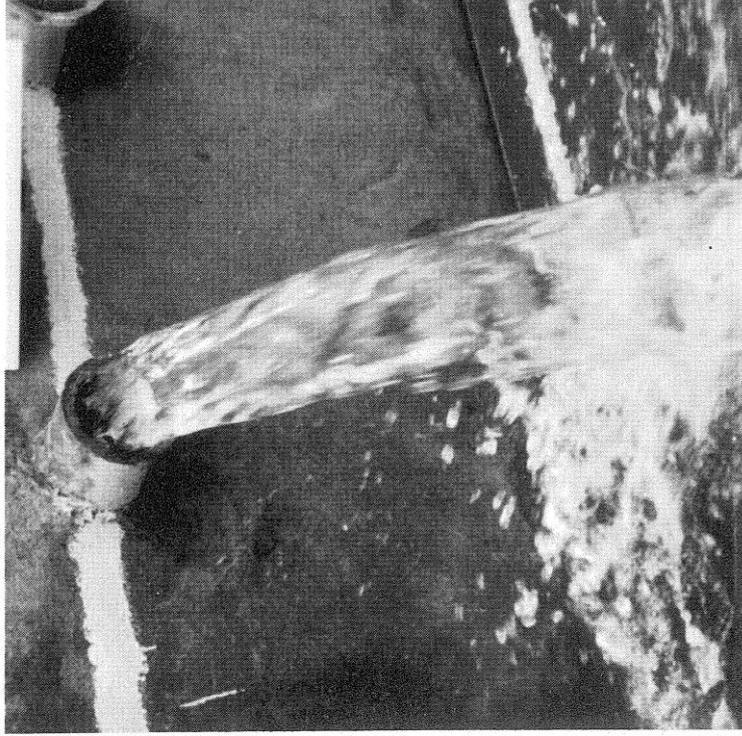
75mm 管の放水状況 (水落距離約 0.3 m)

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 20.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 22.40 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 24.50 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 26.50 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 28.25 m ³ /h |



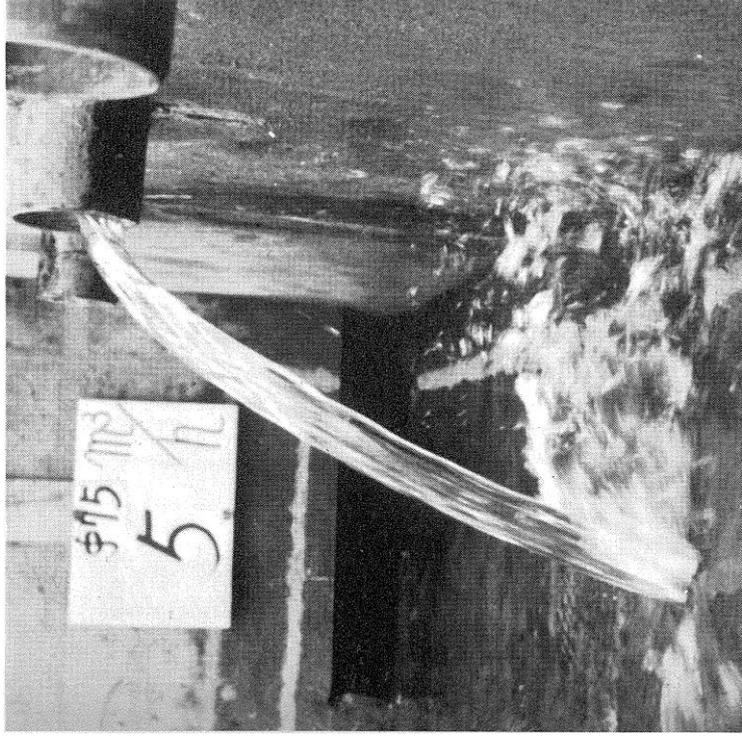
75mm 管の放水状況 (水落距離約 0.2 m)

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 10.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 11.19 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 12.24 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 13.20 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 14.14 m ³ /h |



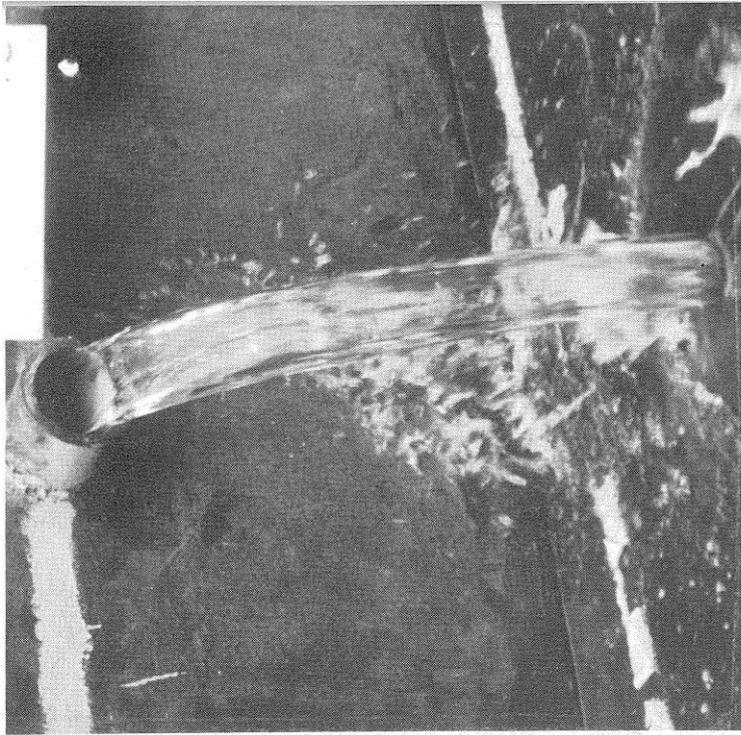
75mm 管の放水状況 (口径いっぱい)

| | | | |
|----|------------------|-----|-------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 7.80 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 8.73 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 9.55 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 10.30 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 11.03 m ³ /h |



75mm 管の放水状況 (口径の2/3まで)

| | | | |
|----|------------------|-----|------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 5.00 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 5.59 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 6.14 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 6.62 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 7.06 m ³ /h |



75mm 管の放水状況（口径の1/2まで）

| | | | |
|----|------------------|-----|------------------------|
| 水压 | 0.20 Mpa (2.0kg) | 放水量 | 3.60 m ³ /h |
| 水压 | 0.25 Mpa (2.5kg) | 放水量 | 4.03 m ³ /h |
| 水压 | 0.29 Mpa (3.0kg) | 放水量 | 4.41 m ³ /h |
| 水压 | 0.34 Mpa (3.5kg) | 放水量 | 4.77 m ³ /h |
| 水压 | 0.39 Mpa (4.0kg) | 放水量 | 5.09 m ³ /h |



75mm 管の放水状況（口径の1/3まで）

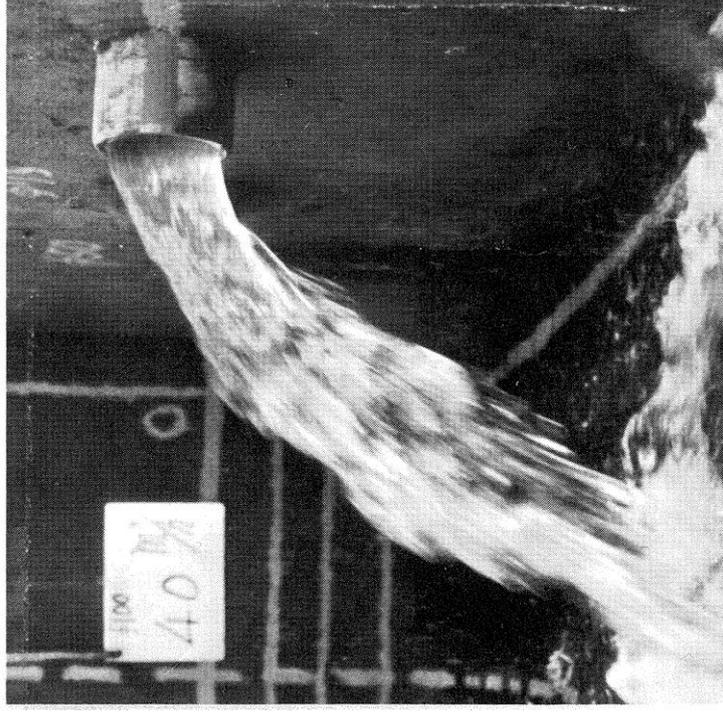
| | | | |
|----|------------------|-----|------------------------|
| 水压 | 0.20 Mpa (2.0kg) | 放水量 | 1.00 m ³ /h |
| 水压 | 0.25 Mpa (2.5kg) | 放水量 | 1.12 m ³ /h |
| 水压 | 0.29 Mpa (3.0kg) | 放水量 | 1.22 m ³ /h |
| 水压 | 0.34 Mpa (3.5kg) | 放水量 | 1.32 m ³ /h |
| 水压 | 0.39 Mpa (4.0kg) | 放水量 | 1.41 m ³ /h |

φ100



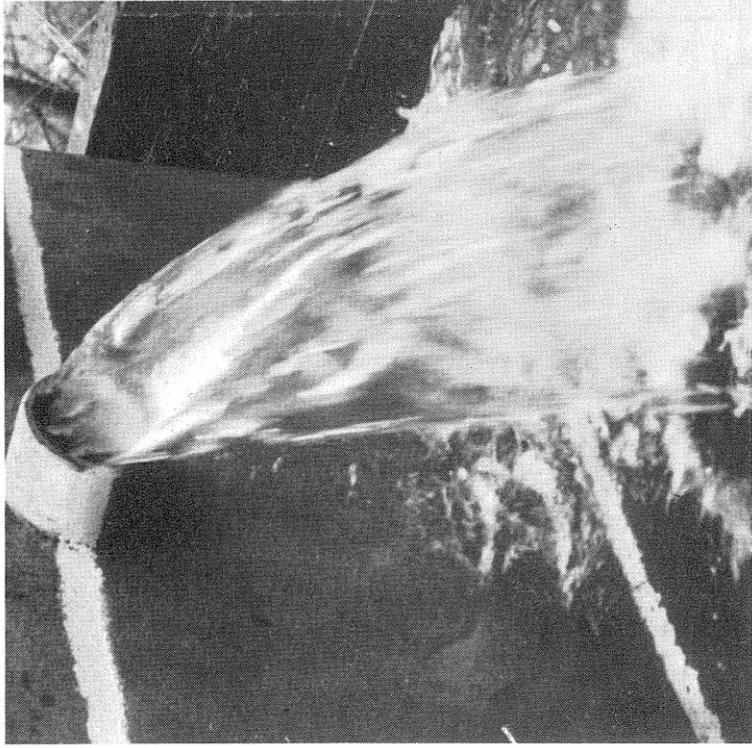
100mm 管の放水状況 (高さ 50 cm × 水落距離約 0.8m)

| | | | | |
|----|----------|---------|-----|--------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 75.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 84.00 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 92.00 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 199.40 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 106.00 m ³ /h |



100mm 管の放水状況 (水落距離約 0.4m)

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 40.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 44.60 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 49.00 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 52.90 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 56.50 m ³ /h |



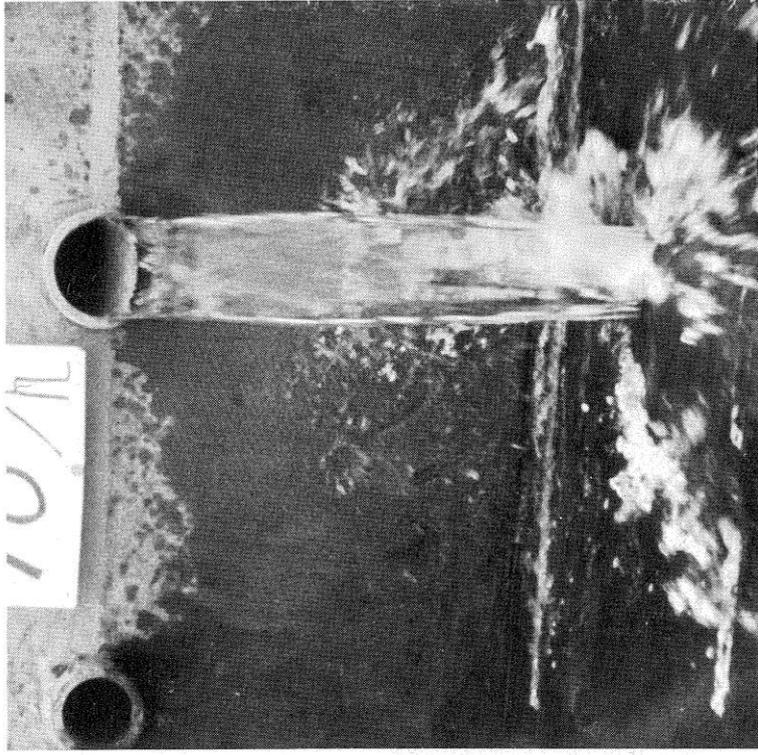
100mm 管の放水状況 (口径いっぱい)

| | | | |
|----|------------------|-----|-------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 25.00 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 26.90 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 30.70 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 33.10 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 35.40 m ³ /h |



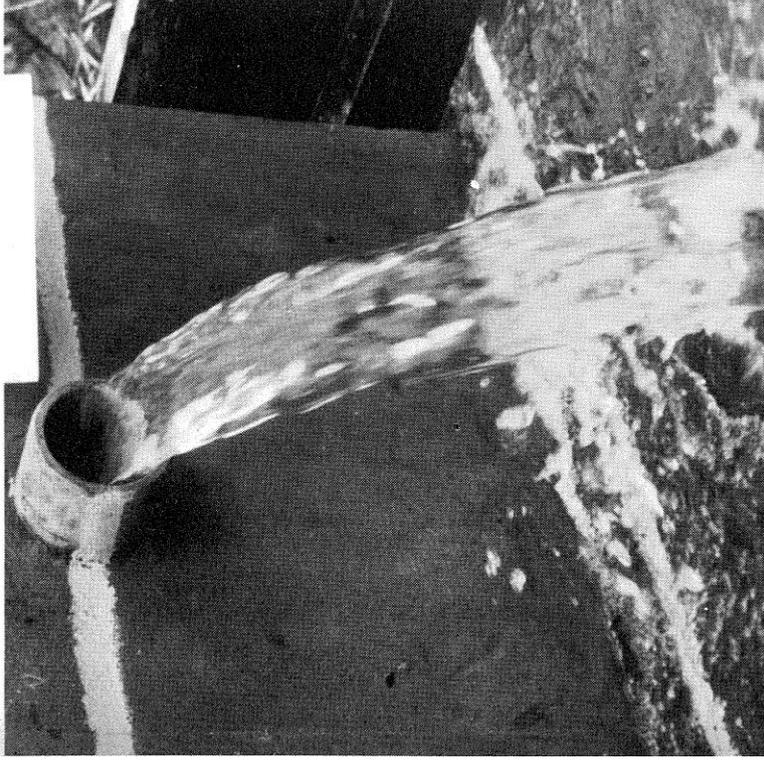
100mm 管の放水状況 (口径の2/3まで)

| | | | |
|----|------------------|-----|-------------------------|
| 水圧 | 0.20 Mpa (2.0kg) | 放水量 | 20.00 m ³ /h |
| 水圧 | 0.25 Mpa (2.5kg) | 放水量 | 22.40 m ³ /h |
| 水圧 | 0.29 Mpa (3.0kg) | 放水量 | 24.50 m ³ /h |
| 水圧 | 0.34 Mpa (3.5kg) | 放水量 | 26.50 m ³ /h |
| 水圧 | 0.39 Mpa (4.0kg) | 放水量 | 28.25 m ³ /h |



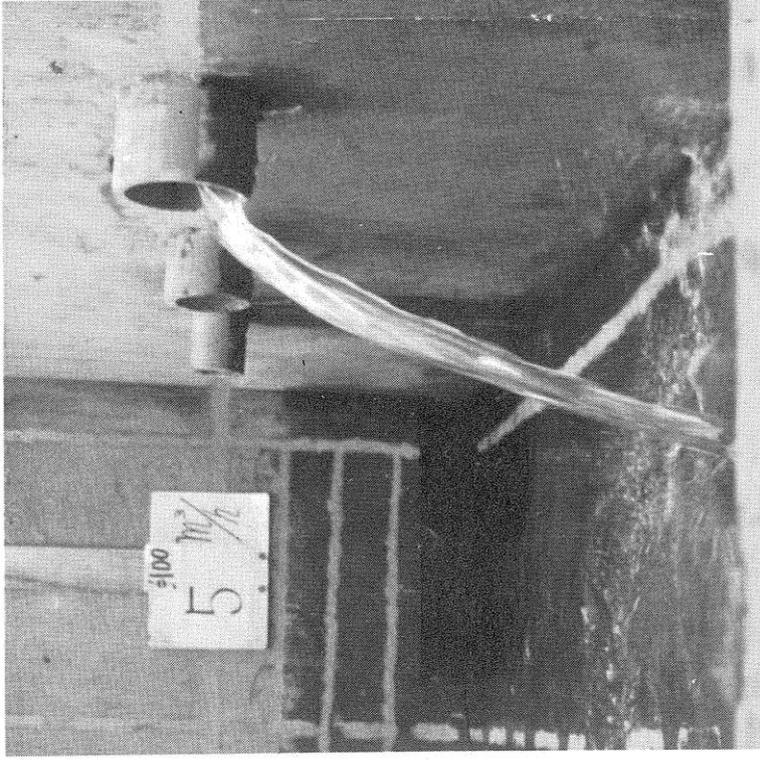
100mm 管の放水状況（口径の 1/2 強まで）

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 10.00 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 11.19 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 12.24 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 13.20 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 14.14 m ³ /h |



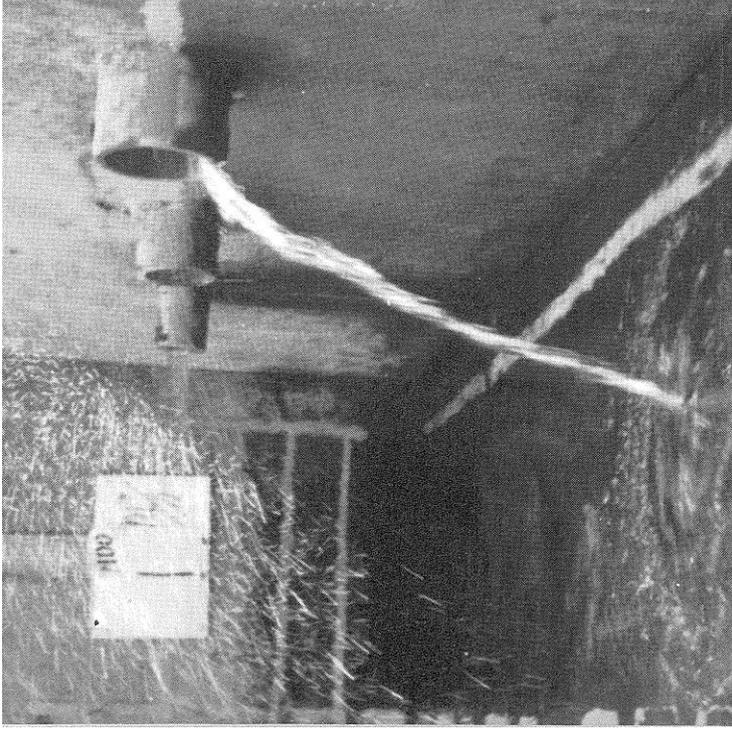
100mm 管の放水状況（口径の 1/2 まで）

| | | | | |
|----|----------|---------|-----|-------------------------|
| 水圧 | 0.20 Mpa | (2.0kg) | 放水量 | 7.80 m ³ /h |
| 水圧 | 0.25 Mpa | (2.5kg) | 放水量 | 8.73 m ³ /h |
| 水圧 | 0.29 Mpa | (3.0kg) | 放水量 | 9.55 m ³ /h |
| 水圧 | 0.34 Mpa | (3.5kg) | 放水量 | 10.30 m ³ /h |
| 水圧 | 0.39 Mpa | (4.0kg) | 放水量 | 11.03 m ³ /h |



100mm 管の放水状況（口径の1/3まで）

| | | | | |
|----|----------|---------|-----|------------------------|
| 水压 | 0.20 Mpa | (2.0kg) | 放水量 | 5.00 m ³ /h |
| 水压 | 0.25 Mpa | (2.5kg) | 放水量 | 5.59 m ³ /h |
| 水压 | 0.29 Mpa | (3.0kg) | 放水量 | 6.14 m ³ /h |
| 水压 | 0.34 Mpa | (3.5kg) | 放水量 | 6.62 m ³ /h |
| 水压 | 0.39 Mpa | (4.0kg) | 放水量 | 7.06 m ³ /h |

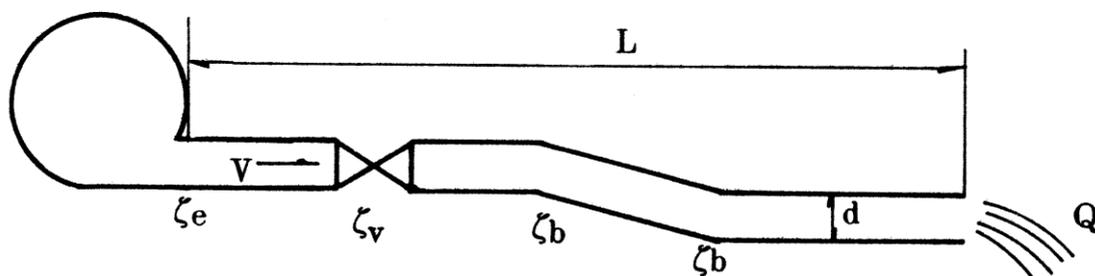


100mm 管の放水状況（口径の1/5で）

| | | | | |
|----|----------|---------|-----|------------------------|
| 水压 | 0.20 Mpa | (2.0kg) | 放水量 | 1.00 m ³ /h |
| 水压 | 0.25 Mpa | (2.5kg) | 放水量 | 1.12 m ³ /h |
| 水压 | 0.29 Mpa | (3.0kg) | 放水量 | 1.22 m ³ /h |
| 水压 | 0.34 Mpa | (3.5kg) | 放水量 | 1.32 m ³ /h |
| 水压 | 0.39 Mpa | (4.0kg) | 放水量 | 1.41 m ³ /h |

3 排水弁の流量概算表

① 計算式



$$H = (\zeta_e + \zeta_v + 2\zeta_b + \lambda \frac{L}{d} + 1) \frac{V^2}{2g} = (1.6 + \zeta_v + \lambda \frac{L}{d}) \frac{V^2}{2g}$$

$$V = \frac{4.43}{\sqrt{1.6 + \zeta_v + \lambda \frac{L}{d}}} \sqrt{H} \text{ (m/sec)}$$

流量Qは

$$Q = \frac{\pi}{4} d^2 v = \frac{\pi}{4} d^2 \frac{4.43}{\sqrt{1.6 + \zeta_v + \lambda \frac{L}{d}}} \sqrt{H} \text{ (m}^3\text{/sec)}$$

ここにH : 本管水圧 (動水圧) (m)

L : 排水管管長 (m)

d : 排水管管径 (m)

ζe : 流入損失係数 (0.5)

ζb : 曲管損失係数 (0.04)

ζv : バルブ損失係数

λ : 排水管摩擦損失係数 (新管、ライニングなし)

バルブの開度とζvとの関係

| 開 度 | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全 開 |
|-----|-----|-----|-----|-----|-----|-------|-----|
| ζv | 90 | 16 | 5.5 | 2.3 | 1.0 | 0.385 | 0 |

呼び径と λ との関係

| | | | | | | |
|-----------|-------|-------|-------|-------|-------|-------|
| 呼び径 | 100 | 150 | 200 | 250 | 300 | 400 |
| λ | 0.045 | 0.040 | 0.036 | 0.031 | 0.027 | 0.024 |

バルブ回転数と v との関係

| | | | | | | | | |
|------------|-------|-------|-----|-----|-----|-----|-----|-----|
| スピンドル回転数 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 |
| v 呼び径 75 | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 |
| 呼び径100 | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 |
| 呼び径150 | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 |
| 呼び径200 | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 |
| 呼び径250 | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 |
| 呼び径300 | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 |
| 呼び径400 | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 |

② 回転数4回までの流量概算表

第1表

L = 0 m (単位 m³/min)

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ75 (λ = 0.050) | 本管水圧 (kgf/cm ²) | 1.0 | 0.12 | 0.25 | 0.39 | 0.61 | 0.75 | 0.91 | 1.01 | 1.09 |
| | | 1.5 | 0.14 | 0.30 | 0.48 | 0.74 | 0.92 | 1.12 | 1.23 | 1.34 |
| | | 2.0 | 0.16 | 0.35 | 0.55 | 0.86 | 1.06 | 1.29 | 1.42 | 1.54 |
| | | 2.5 | 0.18 | 0.39 | 0.62 | 0.96 | 1.18 | 1.44 | 1.59 | 1.72 |
| | | 3.0 | 0.20 | 0.43 | 0.68 | 1.05 | 1.30 | 1.58 | 1.74 | 1.89 |
| | | 3.5 | 0.22 | 0.46 | 0.73 | 1.13 | 1.40 | 1.71 | 1.88 | 2.04 |
| | | 4.0 | 0.23 | 0.49 | 0.78 | 1.21 | 1.50 | 1.82 | 2.01 | 2.18 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ100 (λ = 0.045) | 本管水圧 (kgf/cm ²) | 1.0 | 0.17 | 0.37 | 0.56 | 0.83 | 1.17 | 1.36 | 1.57 | 1.67 |
| | | 1.5 | 0.21 | 0.46 | 0.69 | 1.02 | 1.44 | 1.66 | 1.93 | 2.05 |
| | | 2.0 | 0.24 | 0.53 | 0.79 | 1.18 | 1.66 | 1.92 | 2.23 | 2.36 |
| | | 2.5 | 0.27 | 0.59 | 0.89 | 1.32 | 1.86 | 2.15 | 2.49 | 2.64 |
| | | 3.0 | 0.30 | 0.65 | 0.97 | 1.45 | 2.03 | 2.35 | 2.73 | 2.89 |
| | | 3.5 | 0.32 | 0.70 | 1.05 | 1.56 | 2.20 | 2.54 | 2.94 | 3.13 |
| | | 4.0 | 0.34 | 0.75 | 1.12 | 1.67 | 2.35 | 2.72 | 3.15 | 3.34 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ150 (λ = 0.040) | 本管水圧 (kgf/cm ²) | 1.0 | 0.30 | 0.60 | 1.00 | 1.40 | 1.80 | 2.40 | 2.90 | 3.20 |
| | | 1.5 | 0.40 | 0.80 | 1.20 | 1.70 | 2.20 | 2.90 | 3.50 | 3.90 |
| | | 2.0 | 0.50 | 0.90 | 1.40 | 1.90 | 2.60 | 3.40 | 4.10 | 4.50 |
| | | 2.5 | 0.50 | 1.00 | 1.60 | 2.10 | 2.90 | 3.80 | 4.60 | 5.10 |
| | | 3.0 | 0.60 | 1.10 | 1.70 | 2.40 | 3.10 | 4.10 | 5.00 | 5.50 |
| | | 3.5 | 0.60 | 1.20 | 1.90 | 2.50 | 3.40 | 4.50 | 5.40 | 6.00 |
| | | 4.0 | 0.60 | 1.30 | 2.00 | 2.70 | 3.60 | 4.80 | 5.80 | 6.40 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|-------|------|------|------|------|------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ200 (λ = 0.036) | 本管水圧 (kgf/cm ²) | 1.0 | 0.50 | 0.80 | 1.30 | 1.80 | 2.30 | 2.80 | 3.50 | 4.30 |
| | | 1.5 | 0.60 | 1.00 | 1.60 | 2.20 | 2.80 | 3.40 | 4.30 | 5.20 |
| | | 2.0 | 0.70 | 1.20 | 1.80 | 2.50 | 3.20 | 3.90 | 4.90 | 6.00 |
| | | 2.5 | 0.80 | 1.30 | 2.00 | 2.80 | 3.60 | 4.40 | 5.50 | 6.70 |
| | | 3.0 | 0.80 | 1.40 | 2.20 | 3.10 | 3.90 | 4.80 | 6.00 | 7.40 |
| | | 3.5 | 0.90 | 1.50 | 2.40 | 3.30 | 4.20 | 5.20 | 6.50 | 8.00 |
| | | 4.0 | 1.00 | 1.60 | 2.60 | 3.50 | 4.50 | 5.60 | 7.00 | 8.50 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ250 (λ = 0.031) | 本管水圧 (kgf/cm ²) | 1.0 | 0.80 | 1.20 | 1.90 | 2.60 | 3.40 | 4.10 | 5.10 | 6.20 |
| | | 1.5 | 0.90 | 1.50 | 2.40 | 3.20 | 4.10 | 5.10 | 6.20 | 7.70 |
| | | 2.0 | 1.10 | 1.70 | 2.70 | 3.00 | 4.70 | 5.80 | 7.10 | 8.80 |
| | | 2.5 | 1.20 | 1.90 | 3.00 | 4.20 | 5.30 | 6.50 | 8.00 | 9.90 |
| | | 3.0 | 1.30 | 2.10 | 3.30 | 4.60 | 5.80 | 7.20 | 8.80 | 10.80 |
| | | 3.5 | 1.40 | 2.30 | 3.60 | 4.90 | 6.30 | 7.70 | 9.50 | 11.70 |
| | | 4.0 | 1.50 | 2.50 | 3.80 | 5.30 | 6.70 | 8.30 | 10.10 | 12.50 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ300 (λ = 0.027) | 本管水圧 (kgf/cm ²) | 1.0 | 1.00 | 1.50 | 2.30 | 3.10 | 4.00 | 4.90 | 5.80 | 6.80 |
| | | 1.5 | 1.30 | 1.80 | 2.80 | 3.80 | 4.90 | 5.90 | 7.10 | 8.40 |
| | | 2.0 | 1.50 | 2.10 | 3.30 | 4.40 | 5.60 | 6.90 | 8.20 | 9.70 |
| | | 2.5 | 1.60 | 2.30 | 3.60 | 4.90 | 6.30 | 7.70 | 9.10 | 10.80 |
| | | 3.0 | 1.80 | 2.50 | 4.00 | 5.40 | 6.90 | 8.40 | 10.00 | 11.80 |
| | | 3.5 | 1.90 | 2.70 | 4.30 | 5.80 | 7.50 | 9.10 | 10.80 | 12.80 |
| | | 4.0 | 2.10 | 2.90 | 4.60 | 6.20 | 8.00 | 9.70 | 11.60 | 13.70 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|-------|------|------|------|-------|-------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ400 (λ = 0.024) | 本管水圧 (kgf/cm ²) | 1.0 | 1.80 | 2.30 | 3.40 | 4.70 | 5.90 | 7.30 | 8.60 | 10.00 |
| | | 1.5 | 2.20 | 2.80 | 4.20 | 5.70 | 7.30 | 8.90 | 10.60 | 12.20 |
| | | 2.0 | 2.50 | 3.20 | 4.80 | 6.60 | 8.40 | 10.30 | 12.20 | 14.10 |
| | | 2.5 | 2.80 | 3.60 | 5.40 | 7.40 | 9.40 | 11.50 | 13.70 | 15.80 |
| | | 3.0 | 3.00 | 3.90 | 5.90 | 8.10 | 10.30 | 12.60 | 15.00 | 17.30 |
| | | 3.5 | 3.30 | 4.30 | 6.40 | 8.70 | 11.10 | 13.60 | 16.20 | 18.70 |
| | | 4.0 | 3.50 | 4.60 | 6.80 | 9.30 | 11.90 | 14.50 | 17.30 | 20.00 |

第2表

L=10m (単位: m³/min)

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ75 (λ = 0.050) | 本管水圧 (kgf/cm ²) | 1.0 | 0.12 | 0.24 | 0.38 | 0.56 | 0.66 | 0.77 | 0.82 | 0.87 |
| | | 1.5 | 0.14 | 0.30 | 0.46 | 0.68 | 0.81 | 0.94 | 1.01 | 1.06 |
| | | 2.0 | 0.16 | 0.34 | 0.54 | 0.79 | 0.94 | 1.09 | 1.17 | 1.23 |
| | | 2.5 | 0.18 | 0.39 | 0.60 | 0.88 | 1.05 | 1.22 | 1.30 | 1.37 |
| | | 3.0 | 0.20 | 0.42 | 0.66 | 0.97 | 1.15 | 1.33 | 1.43 | 1.50 |
| | | 3.5 | 0.22 | 0.46 | 0.71 | 1.04 | 1.24 | 1.44 | 1.54 | 1.63 |
| | | 4.0 | 0.23 | 0.49 | 0.76 | 1.12 | 1.33 | 1.54 | 1.65 | 1.74 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ100 (λ = 0.045) | 本管水圧 (kgf/cm ²) | 1.0 | 0.17 | 0.37 | 0.55 | 0.81 | 1.10 | 1.25 | 1.40 | 1.47 |
| | | 1.5 | 0.21 | 0.45 | 0.68 | 0.99 | 1.35 | 1.53 | 1.72 | 1.80 |
| | | 2.0 | 0.24 | 0.52 | 0.78 | 1.14 | 1.55 | 1.76 | 1.99 | 2.08 |
| | | 2.5 | 0.27 | 0.59 | 0.87 | 1.27 | 1.74 | 1.97 | 2.22 | 2.33 |
| | | 3.0 | 0.30 | 0.64 | 0.96 | 1.40 | 1.90 | 2.16 | 2.43 | 2.55 |
| | | 3.5 | 0.32 | 0.69 | 1.03 | 1.51 | 2.06 | 2.33 | 2.63 | 2.75 |
| | | 4.0 | 0.34 | 0.74 | 1.10 | 1.61 | 2.20 | 2.49 | 2.81 | 2.94 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|------------------------------------|-------|-------|------|------|------|------|------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ150 (λ = 0.040) | 本管水圧 (kgf /cm ²) | 1.0 | 0.30 | 0.60 | 1.00 | 1.30 | 1.80 | 2.30 | 2.70 | 3.00 |
| | | 1.5 | 0.40 | 0.80 | 1.20 | 1.60 | 2.20 | 2.80 | 3.40 | 3.70 |
| | | 2.0 | 0.40 | 0.90 | 1.40 | 1.90 | 2.50 | 3.30 | 3.90 | 4.30 |
| | | 2.5 | 0.50 | 1.00 | 1.60 | 2.10 | 2.80 | 3.70 | 4.30 | 4.80 |
| | | 3.0 | 0.60 | 1.10 | 1.70 | 2.30 | 3.10 | 4.00 | 4.80 | 5.20 |
| | | 3.5 | 0.60 | 1.20 | 1.90 | 2.50 | 3.30 | 4.30 | 5.10 | 5.60 |
| | | 4.0 | 0.60 | 1.30 | 2.00 | 2.70 | 3.50 | 4.60 | 5.50 | 6.00 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ200 (λ = 0.036) | 本管水圧 (kgf /cm ²) | 1.0 | 0.50 | 0.80 | 1.30 | 1.80 | 2.20 | 2.80 | 3.40 | 4.20 |
| | | 1.5 | 0.60 | 1.00 | 1.60 | 2.20 | 2.70 | 3.40 | 4.20 | 5.10 |
| | | 2.0 | 0.70 | 1.20 | 1.80 | 2.50 | 3.20 | 3.90 | 4.80 | 5.90 |
| | | 2.5 | 0.80 | 1.30 | 2.00 | 2.80 | 3.50 | 4.40 | 5.40 | 6.60 |
| | | 3.0 | 0.80 | 1.40 | 2.20 | 3.10 | 3.90 | 4.80 | 5.90 | 7.20 |
| | | 3.5 | 0.90 | 1.50 | 2.40 | 3.30 | 4.20 | 5.20 | 6.40 | 7.80 |
| | | 4.0 | 1.00 | 1.60 | 2.60 | 3.50 | 4.50 | 5.50 | 6.90 | 8.30 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ250 (λ = 0.031) | 本管水圧 (kgf /cm ²) | 1.0 | 0.80 | 1.20 | 1.90 | 2.60 | 3.30 | 4.10 | 5.00 | 6.20 |
| | | 1.5 | 0.90 | 1.50 | 2.30 | 3.20 | 4.10 | 5.00 | 6.10 | 7.50 |
| | | 2.0 | 1.10 | 1.70 | 2.70 | 3.70 | 4.70 | 5.80 | 7.10 | 8.70 |
| | | 2.5 | 1.20 | 1.90 | 3.00 | 4.20 | 5.30 | 6.50 | 7.90 | 9.70 |
| | | 3.0 | 1.30 | 2.10 | 3.30 | 4.60 | 5.80 | 7.10 | 8.70 | 10.70 |
| | | 3.5 | 1.40 | 2.30 | 3.60 | 4.90 | 6.20 | 7.70 | 9.40 | 11.50 |
| | | 4.0 | 1.50 | 2.50 | 3.80 | 5.30 | 6.70 | 8.20 | 10.00 | 12.30 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|-------|------|------|------|-------|-------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ300 (λ = 0.027) | 本管水圧 (kgf/cm ²) | 1.0 | 1.00 | 1.50 | 2.30 | 3.10 | 4.00 | 4.80 | 5.80 | 6.80 |
| | | 1.5 | 1.30 | 1.80 | 2.80 | 3.80 | 4.90 | 5.90 | 7.10 | 8.30 |
| | | 2.0 | 1.50 | 2.10 | 3.30 | 4.40 | 5.60 | 6.80 | 8.10 | 9.60 |
| | | 2.5 | 1.60 | 2.30 | 3.60 | 4.90 | 6.30 | 7.70 | 9.10 | 10.70 |
| | | 3.0 | 1.80 | 2.50 | 4.00 | 5.40 | 6.90 | 8.40 | 10.00 | 11.80 |
| | | 3.5 | 1.90 | 2.70 | 4.30 | 5.80 | 7.50 | 9.10 | 10.80 | 12.70 |
| | | 4.0 | 2.10 | 2.90 | 4.60 | 6.20 | 8.00 | 9.70 | 11.50 | 13.60 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ400 (λ = 0.024) | 本管水圧 (kgf/cm ²) | 1.0 | 1.80 | 2.30 | 3.40 | 4.70 | 5.90 | 7.30 | 8.60 | 10.00 |
| | | 1.5 | 2.20 | 2.80 | 4.20 | 5.70 | 7.30 | 8.90 | 10.60 | 12.20 |
| | | 2.0 | 2.50 | 3.20 | 4.80 | 6.60 | 8.40 | 10.30 | 12.20 | 14.10 |
| | | 2.5 | 2.80 | 3.60 | 5.40 | 7.40 | 9.40 | 11.50 | 13.60 | 15.80 |
| | | 3.0 | 3.00 | 3.90 | 5.90 | 8.10 | 10.30 | 12.60 | 14.90 | 17.30 |
| | | 3.5 | 3.30 | 4.30 | 6.40 | 8.70 | 11.10 | 13.60 | 16.10 | 18.70 |
| | | 4.0 | 3.50 | 4.60 | 6.80 | 9.30 | 11.90 | 14.50 | 17.20 | 19.90 |

第3表

L = 25m (単位 : m³/min)

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ75 (λ = 0.050) | 本管水圧 (kgf/cm ²) | 1.0 | 0.11 | 0.24 | 0.36 | 0.50 | 0.58 | 0.64 | 0.67 | 0.70 |
| | | 1.5 | 0.14 | 0.29 | 0.44 | 0.62 | 0.71 | 0.79 | 0.83 | 0.86 |
| | | 2.0 | 0.16 | 0.34 | 0.51 | 0.71 | 0.82 | 0.91 | 0.95 | 0.99 |
| | | 2.5 | 0.18 | 0.38 | 0.57 | 0.80 | 0.91 | 1.02 | 1.07 | 1.10 |
| | | 3.0 | 0.20 | 0.41 | 0.62 | 0.87 | 1.00 | 1.12 | 1.17 | 1.21 |
| | | 3.5 | 0.22 | 0.45 | 0.67 | 0.94 | 1.08 | 1.20 | 1.26 | 1.31 |
| | | 4.0 | 0.23 | 0.48 | 0.72 | 1.01 | 1.16 | 1.29 | 1.35 | 1.40 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|------------------------------------|-------|-------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 | |
| 開口面積 (㎡) | | | | | | | | | | |
| φ100 (λ = 0.045) | 本管水圧 (kgf /cm ²) | 1.0 | 0.17 | 0.37 | 0.54 | 0.77 | 1.01 | 1.12 | 1.23 | 1.27 |
| | | 1.5 | 0.21 | 0.45 | 0.66 | 0.94 | 1.24 | 1.37 | 1.51 | 1.56 |
| | | 2.0 | 0.24 | 0.52 | 0.76 | 1.09 | 1.43 | 1.58 | 1.74 | 1.80 |
| | | 2.5 | 0.27 | 0.58 | 0.85 | 1.21 | 1.59 | 1.77 | 1.94 | 2.01 |
| | | 3.0 | 0.30 | 0.63 | 0.93 | 1.33 | 1.75 | 1.94 | 2.13 | 2.21 |
| | | 3.5 | 0.32 | 0.69 | 1.01 | 1.44 | 1.89 | 2.09 | 2.30 | 2.38 |
| | | 4.0 | 0.34 | 0.73 | 1.08 | 1.54 | 2.02 | 2.24 | 2.46 | 2.55 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 | |
| 開口面積 (㎡) | | | | | | | | | | |
| φ150 (λ = 0.040) | 本管水圧 (kgf /cm ²) | 1.0 | 0.30 | 0.60 | 1.00 | 1.30 | 1.70 | 2.20 | 2.60 | 2.80 |
| | | 1.5 | 0.40 | 0.80 | 1.20 | 1.60 | 2.10 | 2.70 | 3.20 | 3.40 |
| | | 2.0 | 0.40 | 0.90 | 1.40 | 1.90 | 2.40 | 3.10 | 3.60 | 4.00 |
| | | 2.5 | 0.50 | 1.00 | 1.60 | 2.10 | 2.70 | 3.50 | 4.10 | 4.40 |
| | | 3.0 | 0.60 | 1.10 | 1.70 | 2.30 | 3.00 | 3.80 | 4.50 | 4.80 |
| | | 3.5 | 0.60 | 1.20 | 1.80 | 2.50 | 3.20 | 4.10 | 4.80 | 5.20 |
| | | 4.0 | 0.60 | 1.30 | 2.00 | 2.60 | 3.40 | 4.40 | 5.20 | 5.60 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 | |
| 開口面積 (㎡) | | | | | | | | | | |
| φ200 (λ = 0.036) | 本管水圧 (kgf /cm ²) | 1.0 | 0.50 | 0.80 | 1.30 | 1.80 | 2.20 | 2.70 | 3.40 | 4.00 |
| | | 1.5 | 0.60 | 1.00 | 1.60 | 2.20 | 2.70 | 3.30 | 4.10 | 4.90 |
| | | 2.0 | 0.70 | 1.20 | 1.80 | 2.50 | 3.10 | 3.80 | 4.70 | 5.70 |
| | | 2.5 | 0.80 | 1.30 | 2.00 | 2.80 | 3.50 | 4.30 | 5.30 | 6.40 |
| | | 3.0 | 0.80 | 1.40 | 2.20 | 3.00 | 3.80 | 4.70 | 5.80 | 7.00 |
| | | 3.5 | 0.90 | 1.50 | 2.40 | 3.30 | 4.10 | 5.10 | 6.30 | 7.50 |
| | | 4.0 | 1.00 | 1.60 | 2.60 | 3.50 | 4.40 | 5.40 | 6.70 | 8.00 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|------------------------------------|-------|-------|------|------|------|-------|-------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ250 (λ = 0.031) | 本管水圧 (kgf /cm ²) | 1.0 | 0.80 | 1.20 | 1.90 | 2.60 | 3.30 | 4.10 | 4.90 | 6.00 |
| | | 1.5 | 0.90 | 1.50 | 2.30 | 3.20 | 4.10 | 5.00 | 6.10 | 7.40 |
| | | 2.0 | 1.10 | 1.70 | 2.70 | 3.70 | 4.70 | 5.80 | 7.00 | 7.80 |
| | | 2.5 | 1.20 | 1.90 | 3.00 | 4.10 | 5.20 | 6.40 | 7.80 | 9.50 |
| | | 3.0 | 1.30 | 2.10 | 3.30 | 4.50 | 5.70 | 7.10 | 8.60 | 10.50 |
| | | 3.5 | 1.40 | 2.30 | 3.60 | 4.90 | 6.20 | 7.60 | 9.20 | 11.30 |
| | | 4.0 | 1.50 | 2.50 | 3.80 | 5.20 | 6.60 | 8.10 | 9.90 | 12.10 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ300 (λ = 0.027) | 本管水圧 (kgf /cm ²) | 1.0 | 1.00 | 1.50 | 2.30 | 3.10 | 4.00 | 4.80 | 5.70 | 6.70 |
| | | 1.5 | 1.30 | 1.80 | 2.80 | 3.80 | 4.90 | 5.90 | 7.00 | 8.20 |
| | | 2.0 | 1.50 | 2.10 | 3.30 | 4.40 | 5.60 | 6.80 | 8.10 | 9.50 |
| | | 2.5 | 1.60 | 2.30 | 3.60 | 4.90 | 6.30 | 7.60 | 9.00 | 10.60 |
| | | 3.0 | 1.80 | 2.50 | 4.60 | 5.40 | 6.90 | 8.40 | 9.90 | 11.70 |
| | | 3.5 | 1.90 | 2.70 | 4.30 | 5.80 | 7.40 | 9.00 | 10.70 | 12.60 |
| | | 4.0 | 2.10 | 2.90 | 4.60 | 6.20 | 7.90 | 9.60 | 11.40 | 13.50 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ400 (λ = 0.024) | 本管水圧 (kgf /cm ²) | 1.0 | 1.80 | 2.30 | 3.40 | 4.70 | 5.90 | 7.20 | 8.60 | 9.90 |
| | | 1.5 | 2.20 | 2.80 | 4.20 | 5.70 | 7.30 | 8.90 | 10.50 | 12.20 |
| | | 2.0 | 2.50 | 3.20 | 4.80 | 6.60 | 8.40 | 10.20 | 12.20 | 14.00 |
| | | 2.5 | 2.80 | 3.60 | 5.40 | 7.40 | 9.40 | 11.40 | 13.60 | 15.70 |
| | | 3.0 | 3.00 | 3.90 | 5.90 | 8.10 | 10.30 | 12.50 | 14.90 | 17.20 |
| | | 3.5 | 3.30 | 4.30 | 6.40 | 8.70 | 11.10 | 13.50 | 16.10 | 18.60 |
| | | 4.0 | 3.50 | 4.60 | 6.80 | 9.30 | 11.80 | 14.50 | 17.20 | 19.90 |

1 kgf/cm² ≒ 0.098MPa

第4表

L=50m (単位: m³/min)

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ75 (λ=0.050) | 本管水圧 (kgf/cm ²) | 1.0 | 0.11 | 0.23 | 0.33 | 0.44 | 0.49 | 0.53 | 0.54 | 0.55 |
| | | 1.5 | 0.14 | 0.28 | 0.41 | 0.54 | 0.60 | 0.64 | 0.66 | 0.68 |
| | | 2.0 | 0.16 | 0.33 | 0.47 | 0.62 | 0.69 | 0.74 | 0.77 | 0.78 |
| | | 2.5 | 0.18 | 0.36 | 0.53 | 0.70 | 0.77 | 0.83 | 0.86 | 0.88 |
| | | 3.0 | 0.20 | 0.40 | 0.58 | 0.76 | 0.85 | 0.91 | 0.94 | 0.96 |
| | | 3.5 | 0.21 | 0.43 | 0.63 | 0.82 | 0.91 | 0.98 | 1.01 | 1.04 |
| | | 4.0 | 0.23 | 0.46 | 0.67 | 0.88 | 0.98 | 1.05 | 1.08 | 1.11 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ100 (λ=0.045) | 本管水圧 (kgf/cm ²) | 1.0 | 0.17 | 0.36 | 0.52 | 0.72 | 0.90 | 0.97 | 1.04 | 1.07 |
| | | 1.5 | 0.21 | 0.44 | 0.64 | 0.88 | 1.10 | 1.19 | 1.28 | 1.31 |
| | | 2.0 | 0.24 | 0.51 | 0.74 | 1.01 | 1.27 | 1.38 | 1.47 | 1.51 |
| | | 2.5 | 0.27 | 0.57 | 0.82 | 1.13 | 1.42 | 1.54 | 1.65 | 1.69 |
| | | 3.0 | 0.30 | 0.62 | 0.90 | 1.24 | 1.55 | 1.68 | 1.81 | 1.85 |
| | | 3.5 | 0.32 | 0.67 | 0.97 | 1.34 | 1.68 | 1.82 | 1.95 | 2.00 |
| | | 4.0 | 0.34 | 0.72 | 1.04 | 1.43 | 1.80 | 1.94 | 2.08 | 2.14 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ150 (λ=0.040) | 本管水圧 (kgf/cm ²) | 1.0 | 0.30 | 0.60 | 1.00 | 1.30 | 1.70 | 2.10 | 2.40 | 2.50 |
| | | 1.5 | 0.40 | 0.80 | 1.20 | 1.60 | 2.00 | 2.50 | 2.90 | 3.10 |
| | | 2.0 | 0.40 | 0.90 | 1.40 | 1.80 | 2.30 | 2.90 | 3.30 | 3.60 |
| | | 2.5 | 0.50 | 1.00 | 1.50 | 2.00 | 2.60 | 3.30 | 3.70 | 4.00 |
| | | 3.0 | 0.50 | 1.10 | 1.70 | 2.20 | 2.90 | 3.60 | 4.10 | 4.40 |
| | | 3.5 | 0.60 | 1.20 | 1.80 | 2.40 | 3.10 | 3.90 | 4.40 | 4.70 |
| | | 4.0 | 0.60 | 1.30 | 1.90 | 2.60 | 3.30 | 4.10 | 4.70 | 5.00 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|-------|------|------|------|------|------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ200 (λ = 0.036) | 本管水圧 (kgf/cm ²) | 1.0 | 0.50 | 0.80 | 1.30 | 1.70 | 2.20 | 2.70 | 3.20 | 3.80 |
| | | 1.5 | 0.60 | 1.00 | 1.60 | 2.10 | 2.70 | 3.30 | 4.00 | 4.70 |
| | | 2.0 | 0.70 | 1.20 | 1.80 | 2.50 | 3.10 | 3.80 | 4.60 | 5.40 |
| | | 2.5 | 0.80 | 1.30 | 2.00 | 2.70 | 3.40 | 4.20 | 5.10 | 6.10 |
| | | 3.0 | 0.80 | 1.40 | 2.20 | 3.00 | 3.80 | 4.60 | 5.60 | 6.60 |
| | | 3.5 | 0.90 | 1.50 | 2.40 | 3.30 | 4.10 | 5.00 | 6.10 | 7.20 |
| | | 4.0 | 1.00 | 1.60 | 2.60 | 3.50 | 4.40 | 5.30 | 6.50 | 7.70 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ250 (λ = 0.031) | 本管水圧 (kgf/cm ²) | 1.0 | 0.80 | 1.20 | 1.90 | 2.60 | 3.30 | 4.00 | 4.80 | 5.80 |
| | | 1.5 | 0.90 | 1.50 | 2.30 | 3.20 | 4.00 | 4.90 | 5.90 | 7.20 |
| | | 2.0 | 1.10 | 1.70 | 2.70 | 3.70 | 4.60 | 5.70 | 6.80 | 8.30 |
| | | 2.5 | 1.20 | 1.90 | 3.00 | 4.10 | 5.20 | 6.30 | 7.60 | 9.20 |
| | | 3.0 | 1.30 | 2.10 | 3.30 | 4.50 | 5.70 | 6.90 | 8.40 | 10.10 |
| | | 3.5 | 1.40 | 2.30 | 3.60 | 4.90 | 6.10 | 7.50 | 9.00 | 10.90 |
| | | 4.0 | 1.50 | 2.50 | 3.80 | 5.20 | 6.60 | 8.00 | 9.70 | 11.70 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ300 (λ = 0.027) | 本管水圧 (kgf/cm ²) | 1.0 | 1.00 | 1.50 | 2.30 | 3.10 | 4.00 | 4.80 | 5.70 | 6.60 |
| | | 1.5 | 1.30 | 1.80 | 2.80 | 3.80 | 4.80 | 5.90 | 6.90 | 8.10 |
| | | 2.0 | 1.50 | 2.10 | 3.20 | 4.40 | 5.60 | 6.80 | 8.00 | 9.40 |
| | | 2.5 | 1.60 | 2.30 | 3.60 | 4.90 | 6.20 | 7.60 | 9.00 | 10.50 |
| | | 3.0 | 1.80 | 2.50 | 4.00 | 5.40 | 6.80 | 8.30 | 9.80 | 11.50 |
| | | 3.5 | 1.90 | 2.70 | 4.30 | 5.80 | 7.40 | 9.00 | 10.60 | 12.40 |
| | | 4.0 | 2.10 | 2.90 | 4.60 | 6.20 | 7.90 | 9.60 | 11.30 | 13.30 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|-------|------|------|------|-------|-------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ400 (λ = 0.024) | 本管水圧 (kgf/cm ²) | 1.0 | 1.80 | 2.30 | 3.40 | 4.70 | 5.90 | 7.20 | 8.60 | 9.90 |
| | | 1.5 | 2.20 | 2.80 | 4.20 | 5.70 | 7.20 | 8.80 | 10.50 | 12.10 |
| | | 2.0 | 2.50 | 3.20 | 4.80 | 6.60 | 8.40 | 10.20 | 12.10 | 14.00 |
| | | 2.5 | 2.80 | 3.60 | 5.40 | 7.40 | 9.30 | 11.40 | 13.50 | 15.60 |
| | | 3.0 | 3.00 | 3.90 | 5.90 | 8.10 | 10.20 | 12.50 | 14.80 | 17.10 |
| | | 3.5 | 3.30 | 4.30 | 6.40 | 8.70 | 11.10 | 13.50 | 16.00 | 18.50 |
| | | 4.0 | 3.50 | 4.60 | 6.80 | 9.30 | 11.80 | 14.40 | 17.10 | 19.70 |

第5表

L = 100m (単位 : m³/min)

| | | | | | | | | | | |
|------------------------|--------------------------------|-------|------|------|------|------|------|------|------|------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,025 | 224 | 88 | 36 | 23 | 15 | 12 | 10 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ75 (λ = 0.050) | 本管水圧 (kgf/cm ²) | 1.0 | 0.11 | 0.22 | 0.30 | 0.36 | 0.39 | 0.41 | 0.41 | 0.42 |
| | | 1.5 | 0.14 | 0.27 | 0.36 | 0.45 | 0.48 | 0.50 | 0.51 | 0.51 |
| | | 2.0 | 0.16 | 0.31 | 0.42 | 0.51 | 0.55 | 0.58 | 0.59 | 0.59 |
| | | 2.5 | 0.18 | 0.34 | 0.47 | 0.57 | 0.61 | 0.64 | 0.66 | 0.66 |
| | | 3.0 | 0.19 | 0.38 | 0.51 | 0.63 | 0.67 | 0.70 | 0.72 | 0.73 |
| | | 3.5 | 0.21 | 0.41 | 0.56 | 0.68 | 0.73 | 0.76 | 0.78 | 0.79 |
| | | 4.0 | 0.22 | 0.43 | 0.59 | 0.73 | 0.78 | 0.81 | 0.83 | 0.84 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 1,475 | 312 | 137 | 61 | 30 | 22 | 16 | 14 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ100 (λ = 0.045) | 本管水圧 (kgf/cm ²) | 1.0 | 0.17 | 0.35 | 0.49 | 0.64 | 0.75 | 0.80 | 0.83 | 0.85 |
| | | 1.5 | 0.21 | 0.43 | 0.60 | 0.78 | 0.92 | 0.98 | 1.02 | 1.04 |
| | | 2.0 | 0.24 | 0.49 | 0.69 | 0.90 | 1.07 | 1.13 | 1.18 | 1.20 |
| | | 2.5 | 0.27 | 0.55 | 0.77 | 1.01 | 1.19 | 1.26 | 1.32 | 1.34 |
| | | 3.0 | 0.29 | 0.60 | 0.84 | 1.10 | 1.31 | 1.38 | 1.45 | 1.47 |
| | | 3.5 | 0.32 | 0.65 | 0.91 | 1.19 | 1.41 | 1.49 | 1.56 | 1.59 |
| | | 4.0 | 0.34 | 0.70 | 0.97 | 1.27 | 1.51 | 1.59 | 1.67 | 1.70 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--|-------|-------|------|------|------|------|------|------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,175 | 538 | 220 | 118 | 66 | 37 | 25 | 20 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ150 (λ = 0.040) | 本管 水圧 (kgf /cm ²) | 1.0 | 0.30 | 0.60 | 0.90 | 1.20 | 1.50 | 1.80 | 2.00 | 2.10 |
| | | 1.5 | 0.40 | 0.80 | 1.20 | 1.50 | 1.90 | 2.30 | 2.50 | 2.60 |
| | | 2.0 | 0.40 | 0.90 | 1.30 | 1.70 | 2.20 | 2.60 | 2.90 | 3.00 |
| | | 2.5 | 0.50 | 1.00 | 1.50 | 1.90 | 2.40 | 2.90 | 3.20 | 3.40 |
| | | 3.0 | 0.50 | 1.10 | 1.60 | 2.10 | 2.60 | 3.20 | 3.50 | 3.70 |
| | | 3.5 | 0.60 | 1.20 | 1.80 | 2.30 | 2.90 | 3.40 | 3.80 | 4.00 |
| | | 4.0 | 0.60 | 1.20 | 1.90 | 2.50 | 3.10 | 3.70 | 4.10 | 4.30 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 2,930 | 1,030 | 418 | 220 | 136 | 88 | 56 | 37 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ200 (λ = 0.036) | 本管 水圧 (kgf /cm ²) | 1.0 | 0.50 | 0.80 | 1.30 | 1.70 | 2.10 | 2.50 | 3.00 | 3.50 |
| | | 1.5 | 0.60 | 1.00 | 1.50 | 2.10 | 2.60 | 3.10 | 3.70 | 4.30 |
| | | 2.0 | 0.70 | 1.20 | 1.80 | 2.40 | 3.00 | 3.60 | 4.30 | 5.00 |
| | | 2.5 | 0.80 | 1.30 | 2.00 | 2.70 | 3.30 | 4.00 | 4.80 | 5.50 |
| | | 3.0 | 0.80 | 1.40 | 2.20 | 3.00 | 3.70 | 4.40 | 5.30 | 6.10 |
| | | 3.5 | 0.90 | 1.50 | 2.40 | 3.20 | 4.00 | 4.80 | 5.70 | 6.60 |
| | | 4.0 | 1.00 | 1.60 | 2.50 | 3.40 | 4.20 | 5.10 | 6.10 | 7.00 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,000 | 1,125 | 460 | 243 | 150 | 98 | 65 | 42 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ250 (λ = 0.031) | 本管 水圧 (kgf /cm ²) | 1.0 | 0.80 | 1.20 | 1.90 | 2.60 | 3.20 | 3.90 | 4.60 | 5.50 |
| | | 1.5 | 0.90 | 1.50 | 2.30 | 3.20 | 3.90 | 4.80 | 5.70 | 6.80 |
| | | 2.0 | 1.10 | 1.70 | 2.70 | 3.60 | 4.60 | 5.50 | 6.60 | 7.80 |
| | | 2.5 | 1.20 | 1.90 | 3.00 | 4.10 | 5.10 | 6.20 | 7.30 | 8.70 |
| | | 3.0 | 1.30 | 2.10 | 3.30 | 4.50 | 5.60 | 6.80 | 8.00 | 9.50 |
| | | 3.5 | 1.40 | 2.30 | 3.50 | 4.80 | 6.00 | 7.30 | 8.70 | 10.30 |
| | | 4.0 | 1.50 | 2.40 | 3.80 | 5.10 | 6.40 | 7.80 | 9.30 | 11.00 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | | |
|------------------------|--|-------|-------|------|------|------|-------|-------|-------|-------|
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,340 | 1,660 | 664 | 360 | 220 | 148 | 104 | 74 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ300 (λ = 0.027) | 本管 水圧 (kgf /cm ²) | 1.0 | 1.00 | 1.50 | 2.30 | 3.10 | 3.90 | 4.70 | 5.60 | 6.50 |
| | | 1.5 | 1.30 | 1.80 | 2.80 | 3.80 | 4.80 | 5.80 | 6.80 | 7.90 |
| | | 2.0 | 1.50 | 2.10 | 3.20 | 4.40 | 5.50 | 6.70 | 7.80 | 9.10 |
| | | 2.5 | 1.60 | 2.30 | 3.60 | 4.90 | 6.20 | 7.50 | 8.80 | 10.20 |
| | | 3.0 | 1.80 | 2.50 | 4.00 | 5.30 | 6.80 | 8.20 | 9.60 | 11.20 |
| | | 3.5 | 1.90 | 2.70 | 4.30 | 5.80 | 7.30 | 8.80 | 10.40 | 12.10 |
| | | 4.0 | 2.10 | 2.90 | 4.60 | 6.20 | 7.80 | 9.40 | 11.10 | 21.90 |
| スピンドル回転数 | | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | |
| f v | | 3,610 | 2,150 | 950 | 510 | 315 | 210 | 148 | 110 | |
| 開口面積 (m ²) | | | | | | | | | | |
| φ400 (λ = 0.024) | 本管 水圧 (kgf /cm ²) | 1.0 | 1.80 | 2.30 | 3.40 | 4.60 | 5.90 | 7.20 | 8.50 | 9.70 |
| | | 1.5 | 2.20 | 2.80 | 4.20 | 5.70 | 7.20 | 8.80 | 10.40 | 11.90 |
| | | 2.0 | 2.50 | 3.20 | 4.80 | 6.60 | 8.30 | 10.10 | 12.00 | 13.80 |
| | | 2.5 | 2.80 | 3.60 | 5.40 | 7.30 | 9.30 | 11.30 | 13.40 | 15.40 |
| | | 3.0 | 3.00 | 3.90 | 5.90 | 8.00 | 10.20 | 12.40 | 14.70 | 16.90 |
| | | 3.5 | 3.30 | 4.30 | 6.40 | 8.70 | 11.00 | 13.40 | 15.80 | 18.20 |
| | | 4.0 | 3.50 | 4.50 | 6.80 | 9.30 | 11.80 | 14.30 | 16.90 | 19.50 |

1 kgf/cm² ≒ 0.098MPa

③ 開度全開までの流量概算表

第1表

L = 0 m (単位 : m³/min)

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0005 | 0.0012 | 0.0019 | 0.0026 | 0.0032 | 0.0037 | 0.0044 | |
| 開口面積 (m ²) | | 1.5 | 3.0 | 4.4 | 5.9 | 7.4 | 8.9 | 11.8 | |
| 75 | 本管水圧 (kgf/cm ²) | 1.0 | 0.39 | 0.89 | 1.39 | 1.88 | 2.30 | 2.64 | 2.94 |
| | | 1.5 | 0.48 | 1.08 | 1.71 | 2.30 | 2.82 | 3.23 | 3.60 |
| | | 2.0 | 0.55 | 1.25 | 1.97 | 2.66 | 3.26 | 3.73 | 4.15 |
| | | 2.5 | 0.61 | 1.40 | 2.20 | 2.97 | 3.64 | 4.17 | 4.64 |
| | | 3.0 | 0.67 | 1.53 | 2.41 | 3.26 | 3.99 | 4.57 | 5.08 |
| | | 3.5 | 0.73 | 1.66 | 2.61 | 3.52 | 4.31 | 4.93 | 5.49 |
| | | 4.0 | 0.78 | 1.77 | 2.79 | 3.76 | 4.61 | 5.27 | 5.87 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0009 | 0.0027 | 0.0034 | 0.0046 | 0.0057 | 0.0067 | 0.0079 | |
| 開口面積 (m ²) | | 1.7 | 3.5 | 5.2 | 7.0 | 8.6 | 10.4 | 13.8 | |
| 100 | 本管水圧 (kgf/cm ²) | 1.0 | 0.69 | 1.57 | 2.48 | 3.34 | 4.09 | 4.69 | 5.22 |
| | | 1.5 | 0.84 | 1.93 | 3.03 | 4.09 | 5.01 | 5.74 | 6.39 |
| | | 2.0 | 0.98 | 2.23 | 3.50 | 4.73 | 5.79 | 6.63 | 7.38 |
| | | 2.5 | 1.09 | 2.49 | 3.92 | 5.29 | 6.47 | 7.41 | 8.25 |
| | | 3.0 | 1.19 | 2.73 | 4.29 | 5.79 | 7.09 | 8.12 | 9.04 |
| | | 3.5 | 1.29 | 2.94 | 4.63 | 6.25 | 7.66 | 8.77 | 9.76 |
| | | 4.0 | 1.38 | 3.15 | 4.96 | 6.69 | 8.19 | 9.37 | 10.44 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0021 | 0.0050 | 0.0077 | 0.0091 | 0.0127 | 0.0149 | 0.0177 | |
| 開口面積 (m ²) | | 2.2 | 4.4 | 6.5 | 8.9 | 11.1 | 13.3 | 17.7 | |
| 150 | 本管水圧 (kgf/cm ²) | 1.0 | 1.6 | 3.5 | 5.6 | 7.5 | 9.2 | 10.5 | 11.7 |
| | | 1.5 | 1.9 | 4.3 | 6.8 | 9.2 | 11.3 | 12.9 | 14.4 |
| | | 2.0 | 2.2 | 5.0 | 7.9 | 10.6 | 13.0 | 14.9 | 16.6 |
| | | 2.5 | 2.5 | 5.6 | 8.8 | 11.9 | 14.6 | 16.7 | 18.6 |
| | | 3.0 | 2.7 | 6.1 | 9.7 | 13.0 | 16.0 | 18.3 | 20.3 |
| | | 3.5 | 2.9 | 6.6 | 10.4 | 14.1 | 17.2 | 19.7 | 22.0 |
| | | 4.0 | 3.1 | 7.1 | 11.1 | 15.0 | 18.4 | 21.1 | 23.5 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.8 | 6.3 | 9.9 | 13.4 | 16.4 | 18.7 | 20.9 |
| | | 1.5 | 3.4 | 7.7 | 12.1 | 16.4 | 20.1 | 23.0 | 25.6 |
| | | 2.0 | 3.9 | 8.9 | 14.0 | 18.9 | 23.2 | 26.5 | 29.5 |
| | | 2.5 | 4.4 | 10.0 | 15.7 | 21.1 | 25.9 | 29.6 | 33.0 |
| | | 3.0 | 4.8 | 10.9 | 17.2 | 23.2 | 28.4 | 32.5 | 36.2 |
| | | 3.5 | 5.2 | 11.8 | 18.5 | 25.0 | 30.6 | 35.1 | 39.1 |
| | | 4.0 | 5.5 | 12.6 | 19.8 | 26.7 | 32.8 | 37.5 | 41.8 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (m ²) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.3 | 9.8 | 15.5 | 20.9 | 25.6 | 29.3 | 32.6 |
| | | 1.5 | 5.3 | 12.0 | 19.0 | 25.6 | 31.3 | 35.9 | 39.9 |
| | | 2.0 | 6.1 | 13.9 | 21.9 | 29.5 | 36.2 | 41.4 | 46.1 |
| | | 2.5 | 6.8 | 15.6 | 24.5 | 33.0 | 40.5 | 46.3 | 51.6 |
| | | 3.0 | 7.5 | 17.0 | 26.8 | 36.2 | 44.3 | 50.7 | 56.5 |
| | | 3.5 | 8.1 | 18.4 | 29.0 | 39.1 | 47.9 | 54.8 | 61.0 |
| | | 4.0 | 8.6 | 19.7 | 31.0 | 41.8 | 51.2 | 58.6 | 65.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (m ²) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 6.2 | 14.2 | 22.3 | 30.1 | 36.8 | 42.2 | 47.0 |
| | | 1.5 | 7.6 | 17.3 | 27.3 | 36.8 | 45.1 | 51.6 | 57.5 |
| | | 2.0 | 8.8 | 20.0 | 31.5 | 42.5 | 52.1 | 59.6 | 66.4 |
| | | 2.5 | 9.8 | 22.4 | 35.3 | 47.6 | 58.3 | 66.7 | 74.3 |
| | | 3.0 | 10.8 | 24.5 | 38.6 | 52.1 | 63.8 | 73.0 | 81.4 |
| | | 3.5 | 11.6 | 26.5 | 41.7 | 56.3 | 68.9 | 78.9 | 87.9 |
| | | 4.0 | 12.4 | 28.3 | 44.6 | 60.2 | 73.7 | 84.3 | 93.9 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0168 | 0.0368 | 0.0564 | 0.0749 | 0.0920 | 0.1070 | 0.1256 | |
| 開口面積 (m ²) | | 4.3 | 8.6 | 12.9 | 17.2 | 21.5 | 25.9 | 34.5 | |
| 400 | 本管水圧 (kgf/cm ²) | 1.0 | 11.0 | 25.2 | 39.6 | 53.5 | 65.5 | 75.0 | 83.5 |
| | | 1.5 | 13.5 | 30.8 | 48.5 | 65.5 | 80.2 | 91.8 | 102.3 |
| | | 2.0 | 15.6 | 35.6 | 56.1 | 75.6 | 92.6 | 106.0 | 118.1 |
| | | 2.5 | 17.4 | 39.8 | 62.7 | 84.6 | 103.6 | 118.5 | 132.0 |
| | | 3.0 | 19.1 | 43.6 | 68.7 | 92.6 | 113.5 | 129.9 | 144.6 |
| | | 3.5 | 20.6 | 47.1 | 74.2 | 100.1 | 122.5 | 140.3 | 156.2 |
| | | 4.0 | 22.1 | 50.4 | 79.3 | 107.0 | 131.0 | 149.9 | 167.0 |

第2表

L=10m (単位: m³/min)

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0005 | 0.0012 | 0.0019 | 0.0026 | 0.0032 | 0.0037 | 0.0044 | |
| 開口面積 (m ²) | | 1.5 | 3.0 | 4.4 | 5.9 | 7.4 | 8.9 | 11.8 | |
| 75 | 本管水圧 (kgf/cm ²) | 1.0 | 0.37 | 0.75 | 1.00 | 1.14 | 1.22 | 1.26 | 1.29 |
| | | 1.5 | 0.46 | 0.92 | 1.23 | 1.40 | 1.49 | 1.55 | 1.58 |
| | | 2.0 | 0.53 | 1.07 | 1.42 | 1.62 | 1.73 | 1.79 | 1.83 |
| | | 2.5 | 0.59 | 1.19 | 1.58 | 1.81 | 1.93 | 2.00 | 2.04 |
| | | 3.0 | 0.65 | 1.31 | 1.73 | 1.98 | 2.11 | 2.19 | 2.24 |
| | | 3.5 | 0.70 | 1.41 | 1.87 | 2.14 | 2.28 | 2.36 | 2.42 |
| | | 4.0 | 0.75 | 1.51 | 2.00 | 2.28 | 2.44 | 2.52 | 2.58 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0009 | 0.0027 | 0.0034 | 0.0046 | 0.0057 | 0.0067 | 0.0079 | |
| 開口面積 (m ²) | | 1.7 | 3.5 | 5.2 | 7.0 | 8.6 | 10.4 | 13.8 | |
| 100 | 本管水圧 (kgf/cm ²) | 1.0 | 0.67 | 1.40 | 1.94 | 2.28 | 2.48 | 2.59 | 2.67 |
| | | 1.5 | 0.82 | 1.72 | 2.37 | 2.79 | 3.03 | 3.17 | 3.27 |
| | | 2.0 | 0.95 | 1.99 | 2.74 | 3.22 | 3.50 | 3.67 | 3.78 |
| | | 2.5 | 1.06 | 2.22 | 3.06 | 3.60 | 3.92 | 4.10 | 4.23 |
| | | 3.0 | 1.17 | 2.43 | 3.36 | 3.95 | 4.29 | 4.49 | 4.63 |
| | | 3.5 | 1.26 | 2.63 | 3.63 | 4.26 | 4.63 | 4.85 | 5.00 |
| | | 4.0 | 1.35 | 2.81 | 3.88 | 4.56 | 4.96 | 5.18 | 5.35 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0021 | 0.0050 | 0.0077 | 0.0091 | 0.0127 | 0.0149 | 0.0177 | |
| 開口面積 (m ²) | | 2.2 | 4.4 | 6.5 | 8.9 | 11.1 | 13.3 | 17.7 | |
| 150 | 本管水圧 (kgf/cm ²) | 1.0 | 1.5 | 3.3 | 4.8 | 5.8 | 6.5 | 6.9 | 7.2 |
| | | 1.5 | 1.9 | 4.0 | 5.8 | 7.1 | 7.9 | 8.4 | 8.8 |
| | | 2.0 | 2.2 | 4.7 | 6.7 | 8.2 | 9.2 | 9.7 | 10.2 |
| | | 2.5 | 2.4 | 5.2 | 7.5 | 9.2 | 10.2 | 10.9 | 11.4 |
| | | 3.0 | 2.6 | 5.7 | 8.2 | 10.0 | 11.2 | 11.9 | 12.5 |
| | | 3.5 | 2.9 | 6.2 | 8.9 | 10.8 | 12.1 | 12.9 | 13.5 |
| | | 4.0 | 3.1 | 6.6 | 9.5 | 11.6 | 12.9 | 13.8 | 14.4 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.7 | 6.0 | 8.9 | 11.1 | 12.6 | 13.6 | 14.3 |
| | | 1.5 | 3.3 | 7.3 | 10.8 | 13.5 | 15.4 | 16.6 | 17.5 |
| | | 2.0 | 3.9 | 8.5 | 12.5 | 15.6 | 17.8 | 19.2 | 20.3 |
| | | 2.5 | 4.3 | 9.5 | 14.0 | 17.5 | 19.9 | 21.5 | 22.6 |
| | | 3.0 | 4.7 | 10.4 | 15.3 | 19.2 | 21.8 | 23.5 | 24.8 |
| | | 3.5 | 5.1 | 11.2 | 16.6 | 20.7 | 23.6 | 25.4 | 26.8 |
| | | 4.0 | 5.5 | 12.0 | 17.7 | 22.1 | 25.2 | 27.1 | 28.6 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (m ²) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.3 | 9.5 | 14.3 | 18.2 | 21.1 | 23.0 | 24.5 |
| | | 1.5 | 5.2 | 11.6 | 17.5 | 22.3 | 25.8 | 28.1 | 30.0 |
| | | 2.0 | 6.1 | 13.4 | 20.2 | 25.7 | 29.8 | 32.5 | 34.6 |
| | | 2.5 | 6.8 | 15.0 | 22.6 | 28.8 | 33.3 | 36.3 | 38.7 |
| | | 3.0 | 7.4 | 16.5 | 24.7 | 31.5 | 36.5 | 39.8 | 42.4 |
| | | 3.5 | 8.0 | 17.8 | 26.7 | 34.0 | 39.4 | 43.0 | 45.8 |
| | | 4.0 | 8.6 | 19.0 | 28.6 | 36.4 | 42.1 | 46.0 | 49.0 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (m ²) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 6.2 | 13.8 | 21.0 | 27.1 | 31.8 | 35.0 | 37.6 |
| | | 1.5 | 7.6 | 16.9 | 25.7 | 33.2 | 38.9 | 42.8 | 46.0 |
| | | 2.0 | 8.7 | 19.5 | 29.7 | 38.4 | 44.9 | 49.5 | 53.1 |
| | | 2.5 | 9.8 | 21.8 | 33.2 | 42.9 | 50.2 | 55.3 | 59.4 |
| | | 3.0 | 10.7 | 23.9 | 36.4 | 47.0 | 55.0 | 60.6 | 65.1 |
| | | 3.5 | 11.6 | 25.8 | 39.3 | 50.7 | 59.4 | 65.4 | 70.3 |
| | | 4.0 | 12.4 | 27.6 | 42.0 | 54.2 | 63.5 | 70.0 | 75.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0168 | 0.0368 | 0.0564 | 0.0749 | 0.0920 | 0.1070 | 0.1256 | |
| 開口面積 (m ²) | | 4.3 | 8.6 | 12.9 | 17.2 | 21.5 | 25.9 | 34.5 | |
| 400 | 本管水圧 (kgf/cm ²) | 1.0 | 11.0 | 24.8 | 38.1 | 49.8 | 59.0 | 65.7 | 71.2 |
| | | 1.5 | 13.5 | 30.3 | 46.6 | 61.0 | 72.3 | 80.5 | 87.2 |
| | | 2.0 | 15.6 | 35.0 | 53.8 | 70.4 | 83.5 | 92.9 | 100.7 |
| | | 2.5 | 17.4 | 39.1 | 60.2 | 78.7 | 93.4 | 103.9 | 112.6 |
| | | 3.0 | 19.1 | 42.9 | 65.9 | 86.2 | 102.3 | 113.8 | 123.3 |
| | | 3.5 | 20.6 | 46.3 | 71.2 | 93.2 | 110.5 | 122.9 | 133.2 |
| | | 4.0 | 22.0 | 49.5 | 76.1 | 99.6 | 118.1 | 131.4 | 142.4 |

第3表

L = 25m (単位: m³/min)

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0005 | 0.0012 | 0.0019 | 0.0026 | 0.0032 | 0.0037 | 0.0044 | |
| 開口面積 (m ²) | | 1.5 | 3.0 | 4.4 | 5.9 | 7.4 | 8.9 | 11.8 | |
| 75 | 本管水圧 (kgf/cm ²) | 1.0 | 0.36 | 0.63 | 0.76 | 0.82 | 0.85 | 0.86 | 0.87 |
| | | 1.5 | 0.44 | 0.78 | 0.93 | 1.00 | 1.04 | 1.05 | 1.06 |
| | | 2.0 | 0.50 | 0.90 | 1.08 | 1.16 | 1.20 | 1.22 | 1.23 |
| | | 2.5 | 0.56 | 1.00 | 1.20 | 1.29 | 1.34 | 1.36 | 1.37 |
| | | 3.0 | 0.62 | 1.10 | 1.32 | 1.42 | 1.47 | 1.49 | 1.50 |
| | | 3.5 | 0.67 | 1.19 | 1.43 | 1.53 | 1.58 | 1.61 | 1.63 |
| | | 4.0 | 0.71 | 1.27 | 1.52 | 1.64 | 1.69 | 1.72 | 1.74 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0009 | 0.0027 | 0.0034 | 0.0046 | 0.0057 | 0.0067 | 0.0079 | |
| 開口面積 (m ²) | | 1.7 | 3.5 | 5.2 | 7.0 | 8.6 | 10.4 | 13.8 | |
| 100 | 本管水圧 (kgf/cm ²) | 1.0 | 0.65 | 1.23 | 1.54 | 1.70 | 1.77 | 1.81 | 1.84 |
| | | 1.5 | 0.80 | 1.51 | 1.89 | 2.08 | 2.17 | 2.22 | 2.26 |
| | | 2.0 | 0.92 | 1.74 | 2.18 | 2.40 | 2.51 | 2.57 | 2.60 |
| | | 2.5 | 1.03 | 1.94 | 2.44 | 2.68 | 2.80 | 2.87 | 2.91 |
| | | 3.0 | 1.13 | 2.13 | 2.67 | 2.94 | 3.07 | 3.14 | 3.19 |
| | | 3.5 | 1.22 | 2.30 | 2.88 | 3.17 | 3.32 | 3.39 | 3.45 |
| | | 4.0 | 1.30 | 2.46 | 3.08 | 3.39 | 3.55 | 3.63 | 3.68 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0021 | 0.0050 | 0.0077 | 0.0091 | 0.0127 | 0.0149 | 0.0177 | |
| 開口面積 (m ²) | | 2.2 | 4.4 | 6.5 | 8.9 | 11.1 | 13.3 | 17.7 | |
| 150 | 本管水圧 (kgf/cm ²) | 1.0 | 1.5 | 3.0 | 4.0 | 4.6 | 4.9 | 5.0 | 5.2 |
| | | 1.5 | 1.8 | 3.7 | 4.9 | 5.6 | 6.0 | 6.2 | 6.3 |
| | | 2.0 | 2.1 | 4.3 | 5.7 | 6.5 | 6.9 | 7.1 | 7.3 |
| | | 2.5 | 2.4 | 4.8 | 6.3 | 7.2 | 7.7 | 8.0 | 8.2 |
| | | 3.0 | 2.6 | 5.2 | 6.9 | 7.9 | 8.5 | 8.7 | 8.9 |
| | | 3.5 | 2.8 | 5.6 | 7.5 | 8.5 | 9.1 | 9.4 | 9.7 |
| | | 4.0 | 3.0 | 6.0 | 8.0 | 9.1 | 9.8 | 10.1 | 10.3 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.7 | 5.6 | 7.8 | 9.1 | 9.9 | 10.4 | 10.7 |
| | | 1.5 | 3.3 | 6.9 | 9.5 | 11.2 | 12.1 | 12.7 | 13.1 |
| | | 2.0 | 3.8 | 7.9 | 11.0 | 12.9 | 14.0 | 14.7 | 15.1 |
| | | 2.5 | 4.3 | 8.9 | 12.3 | 14.4 | 15.7 | 16.4 | 16.9 |
| | | 3.0 | 4.7 | 9.7 | 13.4 | 15.8 | 17.2 | 18.0 | 18.5 |
| | | 3.5 | 5.0 | 10.5 | 14.5 | 17.0 | 18.5 | 19.4 | 20.0 |
| | | 4.0 | 5.4 | 11.2 | 15.5 | 18.2 | 19.8 | 20.7 | 21.4 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|----------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (㎡) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.2 | 9.1 | 12.9 | 15.6 | 17.3 | 18.3 | 19.0 |
| | | 1.5 | 5.2 | 11.1 | 15.8 | 19.1 | 21.2 | 22.4 | 23.3 |
| | | 2.0 | 6.0 | 12.8 | 18.3 | 22.1 | 24.4 | 25.9 | 26.9 |
| | | 2.5 | 6.7 | 14.3 | 20.4 | 24.7 | 27.3 | 28.9 | 30.1 |
| | | 3.0 | 7.3 | 15.7 | 22.4 | 27.0 | 29.9 | 31.7 | 33.0 |
| | | 3.5 | 7.9 | 17.0 | 24.2 | 29.2 | 32.3 | 34.2 | 35.6 |
| | | 4.0 | 8.5 | 18.1 | 25.8 | 31.2 | 34.6 | 36.6 | 38.1 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (㎡) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 6.1 | 13.3 | 19.4 | 24.0 | 27.0 | 28.9 | 30.3 |
| | | 1.5 | 7.5 | 16.3 | 23.8 | 29.3 | 33.0 | 35.4 | 37.1 |
| | | 2.0 | 8.7 | 18.9 | 27.5 | 33.9 | 38.2 | 40.8 | 42.8 |
| | | 2.5 | 9.7 | 21.1 | 30.7 | 37.9 | 42.7 | 45.6 | 47.9 |
| | | 3.0 | 10.6 | 23.1 | 33.7 | 41.5 | 46.7 | 50.0 | 52.4 |
| | | 3.5 | 11.5 | 24.9 | 36.4 | 44.8 | 50.5 | 54.0 | 56.6 |
| | | 4.0 | 12.3 | 26.7 | 38.9 | 47.9 | 54.0 | 57.7 | 60.6 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0168 | 0.0368 | 0.0564 | 0.0749 | 0.0920 | 0.1070 | 0.1256 | |
| 開口面積 (㎡) | | 4.3 | 8.6 | 12.9 | 17.2 | 21.5 | 25.9 | 34.5 | |
| 400 | 本管水圧 (kgf/cm ²) | 1.0 | 10.9 | 24.2 | 36.0 | 45.5 | 52.2 | 56.6 | 60.0 |
| | | 1.5 | 13.4 | 29.6 | 44.1 | 55.7 | 63.9 | 69.3 | 73.5 |
| | | 2.0 | 15.5 | 34.2 | 50.9 | 64.3 | 73.8 | 80.0 | 84.8 |
| | | 2.5 | 17.3 | 38.2 | 56.9 | 71.9 | 82.5 | 89.5 | 94.9 |
| | | 3.0 | 19.0 | 41.9 | 62.4 | 78.7 | 90.4 | 98.0 | 103.9 |
| | | 3.5 | 20.5 | 45.2 | 67.4 | 85.0 | 97.6 | 105.9 | 112.2 |
| | | 4.0 | 21.9 | 48.3 | 72.0 | 90.9 | 104.3 | 113.2 | 120.0 |

1 kgf/cm² ≒ 0.098MPa

第4表

L=50m (単位: m³/min)

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0005 | 0.0012 | 0.0019 | 0.0026 | 0.0032 | 0.0037 | 0.0044 | |
| 開口面積 (m ²) | | 1.5 | 3.0 | 4.4 | 5.9 | 7.4 | 8.9 | 11.8 | |
| 75 | 本管水圧 (kgf/cm ²) | 1.0 | 0.33 | 0.52 | 0.58 | 0.61 | 0.62 | 0.62 | 0.63 |
| | | 1.5 | 0.41 | 0.64 | 0.72 | 0.75 | 0.76 | 0.77 | 0.77 |
| | | 2.0 | 0.47 | 0.74 | 0.83 | 0.86 | 0.88 | 0.88 | 0.89 |
| | | 2.5 | 0.53 | 0.82 | 0.92 | 0.96 | 0.98 | 0.99 | 0.99 |
| | | 3.0 | 0.58 | 0.90 | 1.01 | 1.05 | 1.07 | 1.08 | 1.09 |
| | | 3.5 | 0.62 | 0.97 | 1.09 | 1.14 | 1.16 | 1.17 | 1.18 |
| | | 4.0 | 0.66 | 1.04 | 1.17 | 1.22 | 1.24 | 1.25 | 1.26 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0009 | 0.0027 | 0.0034 | 0.0046 | 0.0057 | 0.0067 | 0.0079 | |
| 開口面積 (m ²) | | 1.7 | 3.5 | 5.2 | 7.0 | 8.6 | 10.4 | 13.8 | |
| 100 | 本管水圧 (kgf/cm ²) | 1.0 | 0.62 | 1.04 | 1.21 | 1.28 | 1.32 | 1.33 | 1.34 |
| | | 1.5 | 0.76 | 1.28 | 1.49 | 1.57 | 1.61 | 1.63 | 1.65 |
| | | 2.0 | 0.87 | 1.47 | 1.72 | 1.82 | 1.86 | 1.89 | 1.90 |
| | | 2.5 | 0.98 | 1.65 | 1.92 | 2.03 | 2.08 | 2.11 | 2.13 |
| | | 3.0 | 1.07 | 1.81 | 2.10 | 2.23 | 2.28 | 2.31 | 2.33 |
| | | 3.5 | 1.16 | 1.95 | 2.27 | 2.40 | 2.47 | 2.50 | 2.52 |
| | | 4.0 | 1.24 | 2.08 | 2.43 | 2.57 | 2.64 | 2.67 | 2.69 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0021 | 0.0050 | 0.0077 | 0.0091 | 0.0127 | 0.0149 | 0.0177 | |
| 開口面積 (m ²) | | 2.2 | 4.4 | 6.5 | 8.9 | 11.1 | 13.3 | 17.7 | |
| 150 | 本管水圧 (kgf/cm ²) | 1.0 | 1.5 | 2.7 | 3.3 | 3.6 | 3.7 | 3.8 | 3.8 |
| | | 1.5 | 1.8 | 3.3 | 4.0 | 4.4 | 4.6 | 4.6 | 4.7 |
| | | 2.0 | 2.1 | 3.8 | 4.6 | 5.1 | 5.3 | 5.4 | 5.4 |
| | | 2.5 | 2.3 | 4.2 | 5.2 | 5.7 | 5.9 | 6.0 | 6.1 |
| | | 3.0 | 2.5 | 4.6 | 5.7 | 6.2 | 6.4 | 6.6 | 6.7 |
| | | 3.5 | 2.7 | 5.0 | 6.1 | 6.7 | 7.0 | 7.1 | 7.2 |
| | | 4.0 | 2.9 | 5.3 | 6.6 | 7.2 | 7.4 | 7.6 | 7.7 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.6 | 5.1 | 6.6 | 7.4 | 7.8 | 8.0 | 8.1 |
| | | 1.5 | 3.2 | 6.3 | 8.1 | 9.0 | 9.5 | 9.8 | 9.9 |
| | | 2.0 | 3.7 | 7.2 | 9.3 | 10.4 | 11.0 | 11.3 | 11.5 |
| | | 2.5 | 4.2 | 8.1 | 10.4 | 11.6 | 12.3 | 12.6 | 12.8 |
| | | 3.0 | 4.6 | 8.9 | 11.4 | 12.7 | 13.4 | 13.8 | 14.0 |
| | | 3.5 | 4.9 | 9.6 | 12.3 | 13.8 | 14.5 | 14.9 | 15.2 |
| | | 4.0 | 5.3 | 10.2 | 13.2 | 14.7 | 15.5 | 15.9 | 16.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (m ²) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.1 | 7.9 | 10.0 | 11.1 | 11.6 | 11.9 | 12.1 |
| | | 1.5 | 5.0 | 9.6 | 12.2 | 13.6 | 14.2 | 14.6 | 14.8 |
| | | 2.0 | 5.8 | 11.1 | 14.1 | 15.7 | 16.4 | 16.9 | 17.1 |
| | | 2.5 | 6.5 | 12.4 | 15.8 | 17.5 | 18.4 | 18.8 | 19.2 |
| | | 3.0 | 7.1 | 13.6 | 17.3 | 19.2 | 20.1 | 20.6 | 21.0 |
| | | 3.5 | 7.7 | 14.7 | 18.7 | 20.7 | 21.7 | 22.3 | 22.7 |
| | | 4.0 | 8.2 | 15.7 | 20.0 | 22.1 | 23.2 | 23.8 | 24.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (m ²) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 6.1 | 12.6 | 17.4 | 20.5 | 22.3 | 23.3 | 24.1 |
| | | 1.5 | 7.4 | 15.5 | 21.4 | 25.1 | 27.3 | 28.6 | 29.5 |
| | | 2.0 | 8.6 | 17.9 | 24.7 | 29.0 | 31.5 | 33.0 | 34.0 |
| | | 2.5 | 9.6 | 20.0 | 27.6 | 32.4 | 35.3 | 36.9 | 38.0 |
| | | 3.0 | 10.5 | 21.9 | 30.2 | 35.5 | 38.6 | 40.4 | 41.7 |
| | | 3.5 | 11.3 | 23.6 | 32.6 | 38.4 | 41.7 | 43.6 | 45.0 |
| | | 4.0 | 12.1 | 25.3 | 34.9 | 41.0 | 44.6 | 46.7 | 48.1 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.6 | 5.1 | 6.6 | 7.4 | 7.8 | 8.0 | 8.1 |
| | | 1.5 | 3.2 | 6.3 | 8.1 | 9.0 | 9.5 | 9.8 | 9.9 |
| | | 2.0 | 3.7 | 7.2 | 9.3 | 10.4 | 11.0 | 11.3 | 11.5 |
| | | 2.5 | 4.2 | 8.1 | 10.4 | 11.6 | 12.3 | 12.6 | 12.8 |
| | | 3.0 | 4.6 | 8.9 | 11.4 | 12.7 | 13.4 | 13.8 | 14.0 |
| | | 3.5 | 4.9 | 9.6 | 12.3 | 13.8 | 14.5 | 14.9 | 15.2 |
| | | 4.0 | 5.3 | 10.2 | 13.2 | 14.7 | 15.5 | 15.9 | 16.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (m ²) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.1 | 7.9 | 10.0 | 11.1 | 11.6 | 11.9 | 12.1 |
| | | 1.5 | 5.0 | 9.6 | 12.2 | 13.6 | 14.2 | 14.6 | 14.8 |
| | | 2.0 | 5.8 | 11.1 | 14.1 | 15.7 | 16.4 | 16.9 | 17.1 |
| | | 2.5 | 6.5 | 12.4 | 15.8 | 17.5 | 18.4 | 18.8 | 19.2 |
| | | 3.0 | 7.1 | 13.6 | 17.3 | 19.2 | 20.1 | 20.6 | 21.0 |
| | | 3.5 | 7.7 | 14.7 | 18.7 | 20.7 | 21.7 | 22.3 | 22.7 |
| | | 4.0 | 8.2 | 15.7 | 20.0 | 22.1 | 23.2 | 23.8 | 24.2 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (m ²) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 6.1 | 12.6 | 17.4 | 20.5 | 22.3 | 23.3 | 24.1 |
| | | 1.5 | 7.4 | 15.5 | 21.4 | 25.1 | 27.3 | 28.6 | 29.5 |
| | | 2.0 | 8.6 | 17.9 | 24.7 | 29.0 | 31.5 | 33.0 | 34.0 |
| | | 2.5 | 9.6 | 20.0 | 27.6 | 32.4 | 35.3 | 36.9 | 38.0 |
| | | 3.0 | 10.5 | 21.9 | 30.2 | 35.5 | 38.6 | 40.4 | 41.7 |
| | | 3.5 | 11.3 | 23.6 | 32.6 | 38.4 | 41.7 | 43.6 | 45.0 |
| | | 4.0 | 12.1 | 25.3 | 34.9 | 41.0 | 44.6 | 46.7 | 48.1 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0021 | 0.0050 | 0.0077 | 0.0091 | 0.0127 | 0.0149 | 0.0177 | |
| 開口面積 (m ²) | | 2.2 | 4.4 | 6.5 | 8.9 | 11.1 | 13.3 | 17.7 | |
| 150 | 本管水圧 (kgf/cm ²) | 1.0 | 1.4 | 2.2 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 |
| | | 1.5 | 1.7 | 2.7 | 3.1 | 3.3 | 3.4 | 3.4 | 3.4 |
| | | 2.0 | 1.9 | 3.2 | 3.6 | 3.8 | 3.9 | 3.9 | 4.0 |
| | | 2.5 | 2.2 | 3.5 | 4.0 | 4.2 | 4.3 | 4.4 | 4.4 |
| | | 3.0 | 2.4 | 3.9 | 4.4 | 4.7 | 4.8 | 4.8 | 4.8 |
| | | 3.5 | 2.6 | 4.2 | 4.8 | 5.0 | 5.1 | 5.2 | 5.2 |
| | | 4.0 | 2.7 | 4.5 | 5.1 | 5.4 | 5.5 | 5.5 | 5.6 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0040 | 0.0090 | 0.0137 | 0.0186 | 0.0228 | 0.0267 | 0.0314 | |
| 開口面積 (m ²) | | 3.0 | 5.9 | 8.9 | 11.8 | 14.7 | 17.7 | 23.6 | |
| 200 | 本管水圧 (kgf/cm ²) | 1.0 | 2.5 | 4.4 | 5.3 | 5.6 | 5.8 | 5.9 | 6.0 |
| | | 1.5 | 3.1 | 5.4 | 6.5 | 6.9 | 7.1 | 7.2 | 7.3 |
| | | 2.0 | 3.6 | 6.3 | 7.5 | 8.0 | 8.2 | 8.4 | 8.4 |
| | | 2.5 | 4.0 | 7.0 | 8.3 | 8.9 | 9.2 | 9.3 | 9.4 |
| | | 3.0 | 4.4 | 7.7 | 9.1 | 9.8 | 10.1 | 10.2 | 10.3 |
| | | 3.5 | 4.7 | 8.3 | 9.9 | 10.6 | 10.9 | 11.1 | 11.2 |
| | | 4.0 | 5.0 | 8.9 | 10.5 | 11.3 | 11.6 | 11.8 | 11.9 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0062 | 0.0142 | 0.0226 | 0.0291 | 0.0358 | 0.0416 | 0.0491 | |
| 開口面積 (m ²) | | 3.1 | 6.1 | 9.2 | 12.3 | 15.4 | 18.2 | 24.6 | |
| 250 | 本管水圧 (kgf/cm ²) | 1.0 | 4.0 | 7.5 | 9.3 | 10.2 | 10.7 | 10.9 | 11.0 |
| | | 1.5 | 5.0 | 9.2 | 11.4 | 12.5 | 13.0 | 13.3 | 13.5 |
| | | 2.0 | 5.7 | 10.7 | 13.2 | 14.5 | 15.1 | 15.4 | 15.6 |
| | | 2.5 | 6.4 | 11.9 | 14.8 | 16.2 | 16.8 | 17.2 | 17.4 |
| | | 3.0 | 7.0 | 13.0 | 16.2 | 17.7 | 18.5 | 18.8 | 19.1 |
| | | 3.5 | 7.6 | 14.1 | 17.5 | 19.1 | 19.9 | 20.4 | 20.6 |
| | | 4.0 | 8.1 | 15.1 | 18.7 | 20.4 | 21.3 | 21.8 | 22.1 |

1 kgf/cm² ≒ 0.098MPa

| | | | | | | | | | |
|------------------------|--------------------------------|--------|--------|--------|--------|--------|--------|--------|------|
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0094 | 0.0173 | 0.0315 | 0.0420 | 0.0516 | 0.0601 | 0.0707 | |
| 開口面積 (m ²) | | 3.7 | 7.4 | 11.1 | 14.8 | 18.4 | 22.1 | 29.5 | |
| 300 | 本管水圧 (kgf/cm ²) | 1.0 | 5.9 | 11.5 | 14.8 | 16.5 | 17.4 | 17.9 | 18.2 |
| | | 1.5 | 7.3 | 14.1 | 18.1 | 20.3 | 21.4 | 22.0 | 22.4 |
| | | 2.0 | 8.4 | 16.3 | 20.9 | 23.4 | 24.7 | 25.4 | 25.8 |
| | | 2.5 | 9.4 | 18.2 | 23.4 | 26.2 | 27.6 | 28.3 | 28.9 |
| | | 3.0 | 10.3 | 20.0 | 25.6 | 28.7 | 30.2 | 31.0 | 31.6 |
| | | 3.5 | 11.1 | 21.6 | 27.7 | 30.9 | 32.6 | 33.5 | 34.1 |
| | | 4.0 | 11.8 | 23.0 | 29.6 | 33.1 | 34.9 | 35.9 | 36.5 |
| スピンドル回転数 | | 1/8 | 2/8 | 3/8 | 4/8 | 5/8 | 6/8 | 全開 | |
| f v | | 0.0168 | 0.0368 | 0.0564 | 0.0749 | 0.0920 | 0.1070 | 0.1256 | |
| 開口面積 (m ²) | | 4.3 | 8.6 | 12.9 | 17.2 | 21.5 | 25.9 | 34.5 | |
| 400 | 本管水圧 (kgf/cm ²) | 1.0 | 10.7 | 21.7 | 29.2 | 33.6 | 36.0 | 37.4 | 38.3 |
| | | 1.5 | 13.1 | 26.6 | 35.7 | 41.1 | 44.1 | 45.8 | 46.9 |
| | | 2.0 | 15.1 | 30.7 | 41.3 | 47.5 | 50.9 | 52.9 | 54.2 |
| | | 2.5 | 16.9 | 34.4 | 46.1 | 53.1 | 56.9 | 59.1 | 60.6 |
| | | 3.0 | 18.5 | 37.7 | 50.5 | 58.1 | 62.4 | 64.7 | 66.4 |
| | | 3.5 | 20.0 | 40.7 | 54.6 | 62.8 | 67.4 | 69.9 | 71.7 |
| | | 4.0 | 21.4 | 43.5 | 58.4 | 67.1 | 72.0 | 74.8 | 76.6 |

1 kgf/cm² ≒ 0.098MPa

管内の水量概算表

(単位 m³)

| 呼び径 | 管 路 長 (m) | | | | | | | 呼び径 |
|-------|-----------|------|------|------|-------|-------|-------|-------|
| | 100 | 300 | 500 | 800 | 1,200 | 2,000 | 3,000 | |
| 75 | 0.44 | 1.33 | 2.21 | 3.53 | 5.30 | 8.84 | 13.3 | 75 |
| 100 | 0.79 | 2.36 | 3.93 | 6.28 | 9.42 | 15.7 | 23.6 | 100 |
| 150 | 1.77 | 5.30 | 8.84 | 14.1 | 21.2 | 35.3 | 53.0 | 150 |
| 200 | 3.14 | 9.42 | 15.7 | 25.1 | 37.7 | 62.8 | 94.2 | 200 |
| 250 | 4.91 | 14.7 | 24.5 | 39.3 | 58.9 | 98.2 | 147 | 250 |
| 300 | 7.07 | 21.2 | 35.3 | 56.5 | 84.8 | 141 | 212 | 300 |
| 350 | 9.62 | 28.9 | 48.1 | 77.0 | 115 | 192 | 289 | 350 |
| 400 | 12.6 | 37.7 | 62.8 | 101 | 151 | 251 | 377 | 400 |
| 450 | 15.9 | 47.7 | 79.5 | 127 | 191 | 318 | 477 | 450 |
| 500 | 19.6 | 58.9 | 98.2 | 157 | 236 | 393 | 589 | 500 |
| 600 | 28.3 | 84.8 | 141 | 226 | 339 | 565 | 848 | 600 |
| 700 | 38.5 | 115 | 192 | 308 | 462 | 770 | 1,155 | 700 |
| 800 | 50.3 | 151 | 251 | 402 | 603 | 1,005 | 1,508 | 800 |
| 900 | 63.6 | 191 | 318 | 509 | 763 | 1,272 | 1,909 | 900 |
| 1,000 | 78.5 | 236 | 393 | 628 | 942 | 1,571 | 2,356 | 1,000 |
| 1,100 | 95.0 | 285 | 475 | 760 | 1,140 | 1,901 | 2,851 | 1,100 |

注 管内水量は、呼び径にて算出