MOV MICRO OIL VALVES
SELF-CLEANING

FULL OPEN VALVE CAPACITY

MODEL NUMBER	PIPE SIZE NPT	PRESSURE DROP (psig) 1	5	10	15	20	25	30	35	40	45	50	75	100
		OIL CAPACITY (gph) @ 180° VALVE POSITION												
S-3-2	3/8	1.0	2.3	3.2	4.0	4.6	5.1	5.6	6.0	6.5	6.8	7.2	8.8	10.2
S-3-3	3/8	1.5	3.5	4.7	5.8	6.7	7.5	8.2	8.9	9.5	10.1	10.6	13.0	15.0
S-3-5	3/8	4.1	9.6	12.9	15.9	18.3	20.5	22.4	24.2	25.8	27.5	28.9	35.5	41.0
S-3-7	3/8	8.7	20.3	27.4	33.7	38.9	43.5	47.5	51.3	54.8	58.3	61.3	75.3	87.0
S-3-9	3/8	14.2	31.8	44.8	55	63.5	71	77.7	83.9	89.8	95.1	100	122	142
S-3-11	3/8	19.2	43	60.6	74.4	85.8	96	105	113	121	128	135	166	192
S-3-13	3/8	25.6	59.8	80.8	99.2	115	128	140	151	161	172	181	222	256
S-3-1610	3/8	39.8	92.9	126	154	178	199	218	235	251	267	281	345	398
AS-3-3	3/8	1.4	3.3	4.4	5.4	6.3	7.0	7.7	8.3	8.8	9.4	9.9	12.1	14.0
AS-3-5	3/8	4.4	10.3	13.9	17.1	19.7	22.0	24.1	26.0	27.7	29.5	31.0	38.1	44.0
AS-3-7	3/8	8.5	19.8	26.8	32.9	38.0	42.5	46.5	50.1	53.6	57.0	59.9	73.9	85.0
AS-3-9	3/8	12.5	28	39.5	48.5	55.9	62.6	68.5	74	79.1	83.8	88.5	108	125
AS-3-11	3/8	22.3	52.1	70.4	86.4	99.8	112	122	132	141	149	157	193	223

NOTES:
1. Capacities based on No. 2 fuel oil @ 0.849 s.g. and 60°F fluid temperature.
2. Pressure drop across full open valve. Actual test data measured at **25 psig** pressure drop, all other capacities calculated.
3. S-3-1610 capacity is not linear over the entire valve position range and does not have the self-cleaning feature.

(Selection of Valves on Reverse Side)

SELECTION

When choosing the proper Micro Oil Valve for a particular application, three basic criteria must be considered; actual pressure drop allowable through the valve in psig, maximum oil flow capacity required in gallons per hour, and manual or automatic valve control. AS and S Series Micro Oil Valves travel from 0 to 180°, i.e., closed to full open. For manual control, utilize the Capacity Table shown on page 1 to select the proper Micro Oil Valve. For automatic control, most control motors travel from 0 to 90°, therefore the Capacity Table shown on page 1 cannot be used for automatic control Micro Oil Valve for automatic control, use the Micro Oil Valve (AS & S Series) Flow Curve in MOV-4 Supplemental Data.

TO SELECT A MICRO OIL VALVE WITH MANUAL CONTROL:

1. Read horizontally across the top of the table, locate the column representing the actual pressure drop allowable through the valve.
2. Read vertically down the column until you reach a capacity which equals or just exceeds your computed maximum capacity.
3. Read horizontally to the left to determine the model number of the Micro Oil Valve which meets your requirements.

TO SELECT A MICRO OIL VALVE WITH AUTOMATIC CONTROL:

Example: A burner requires 35 gph of No. 2 fuel oil at high fire with a 15 psig pressure drop across the valve.

1. Using the equation found on MOV-4, calculate the Chart gph knowing the actual gph and pressure drop through the valve as shown:

$$Q\,Actual gph = Q\,Chart\ gph\ x\ \sqrt{\Delta P\ psig / 25\,psig}$$

$$Q\,Chart\ gph = Q\,Actual\ gph \div \sqrt{\Delta P\ psig / 25\,psig}$$

$$= 35\,gph \div \sqrt{15\ psig / 25\,psig}$$

$$= 45.2\ gph$$

2. Using the graph found on MOV-4, locate Valve Dial Position 9 on the x-axis, and move vertically up the graph to the position which equals 45.2 gph on the y-axis.

3. From this point, move vertically up the graph until you intercept the next valve flow curve line which is S-3-11 for this example.

MOV MICRO OIL VALVES
SELF-CLEANING

FULL OPEN VALVE CAPACITY

MODEL NUMBER	PIPE SIZE NPT	PRESSURE DROP (kPa)												
		6.9	35	69	103	138	172	207	241	276	310	345	517	690
		OIL CAPACITY (lph) @ 180° VALVE POSITION												
S-3-2	3/8	3.9	8.7	12.1	15.1	17.4	19.3	21.2	22.7	24.6	25.7	27.3	33.3	38.6
S-3-3	3/8	5.7	13.2	17.8	22.0	25.3	28.4	31.0	33.7	36.0	38.2	40.1	49.2	56.8
S-3-5	3/8	15.5	36.3	48.8	60.2	69.3	77.6	84.8	91.6	97.7	104	109	134	155
S-3-7	3/8	32.9	76.8	104	128	147	165	180	194	207	221	232	285	329
S-3-9	3/8	53.7	120	170	208	240	269	294	318	340	360	379	462	537
S-3-11	3/8	72.7	163	229	282	325	363	397	428	458	484	511	628	727
S-3-13	3/8	96.9	226	306	375	435	484	530	572	609	651	685	840	969
S-3-1610	3/8	151	352	477	583	674	753	825	889	950	1011	1064	1309	1506
AS-3-3	3/8	5.3	12.5	16.7	20.4	23.8	26.5	29.1	31.4	33.3	35.7	37.5	45.8	53.0
AS-3-5	3/8	16.7	39.0	52.6	64.7	74.6	83.3	91.2	98.4	105	112	117	144	167
AS-3-7	3/8	32.2	74.9	101	125	144	161	176	190	203	216	227	280	322
AS-3-9	3/8	47.3	106	150	184	212	237	259	280	299	317	335	409	473
AS-3-11	3/8	84.4	197	266	327	378	424	462	500	534	564	594	731	844

NOTES:
1. Capacities based on No. 2 fuel oil @ 0.849 s.g. and 15.5°C fluid temperature.
2. Pressure drop across full open valve. Actual test data measured at **172 kPa** pressure drop, all other capacities calculated.
3. S-3-1610 capacity is not linear over the entire valve position range and does not have the self-cleaning feature.

(Selection of Valves on Reverse Side)

SELECTION

When choosing the proper Micro Oil Valve for a particular application, three basic criteria must be considered; actual pressure drop allowable through the valve in psig, maximum oil flow capacity required in gallons per hour, and manual or automatic valve control. AS and S Series Micro Oil Valves travel from 0 to 180°, i.e., closed to full open. For manual control, utilize the Capacity Table shown on page 1 to select the proper Micro Oil Valve. For automatic control, most control motors travel from 0 to 90°, therefore the Capacity Table shown on page 1 cannot be used for automatic control Micro Oil Valve for automatic control, use the Micro Oil Valve (AS & S Series) Flow Curve in MOV-4 Supplemental Data.

TO SELECT A MICRO OIL VALVE WITH MANUAL CONTROL:

1. Read horizontally across the top of the table, locate the column representing the actual pressure drop allowable through the valve.
2. Read vertically down the column until you reach a capacity which equals or just exceeds your computed maximum capacity.
3. Read horizontally to the left to determine the model number of the Micro Oil Valve which meets your requirements.

TO SELECT A MICRO OIL VALVE WITH AUTOMATIC CONTROL:

Example: A burner requires 132 lph of No. 2 fuel oil at high fire with a 103 kPa pressure drop across the valve.

1. Using the equation found on MOV-4, calculate the Chart lph knowing the actual lph and pressure drop through the valve as shown:

$$Q\ Actual\ \ gph\ = Q\ Chart\ \ \ lph\ \ x\ \sqrt{\Delta P\ kPa\ \ / 172\ kPa}$$

$$Q\,Chart\ gph = Q\,Actual\ gph \div \sqrt{\Delta P\,kPa / 172kPa}$$

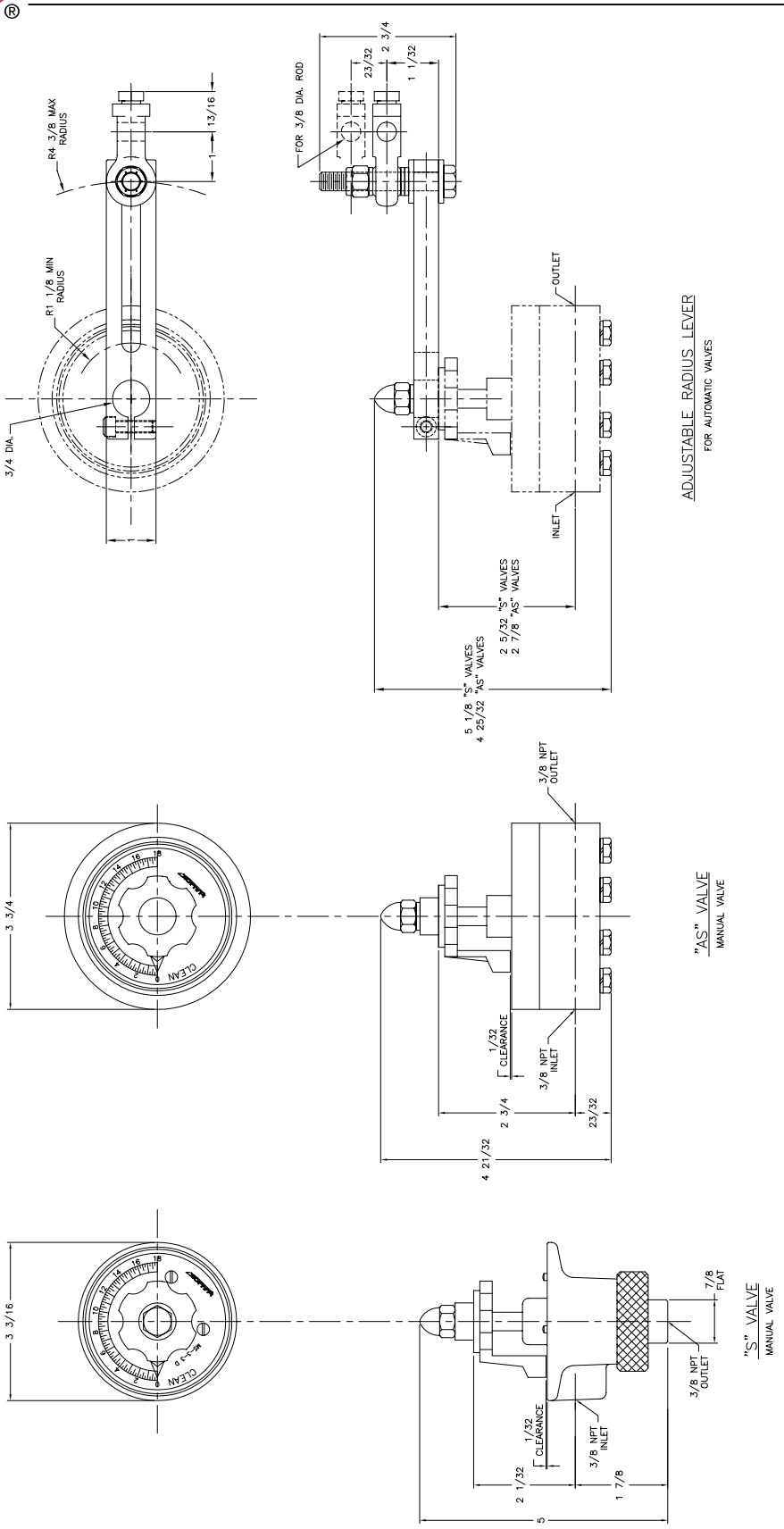
$$= 132\,lph \div \sqrt{103\,kPa / 172kPa}$$

$$= 171\ lph$$

2. Using the graph found on MOV-4, locate Valve Dial Position 9 on the x-axis, and move vertically up the graph to the position which equals 171 lph on the y-axis.

3. From this point, move vertically up the graph until you intercept the next valve flow curve line which is S-3-11 for this example.

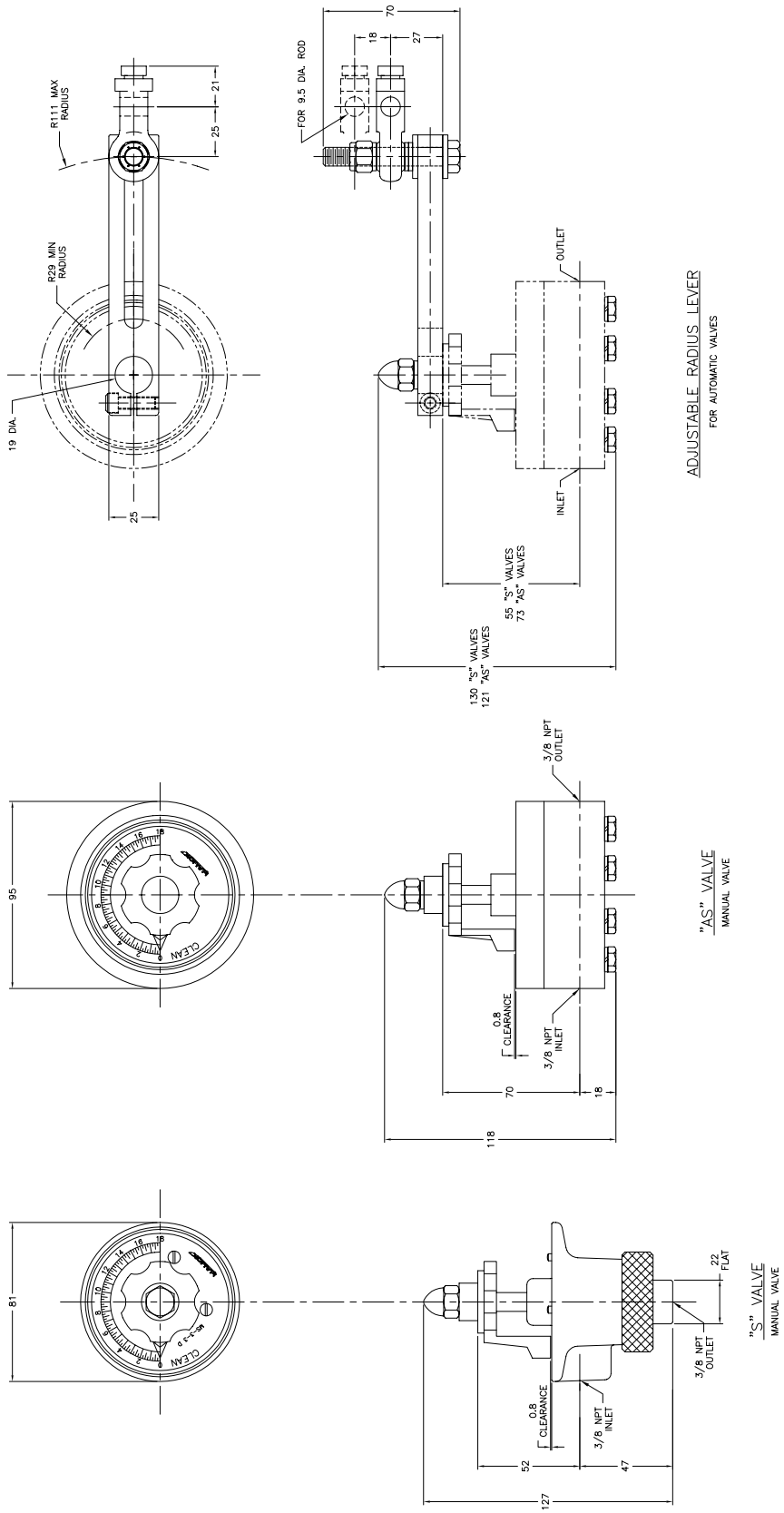
MOV MICRO OIL VALVES
SELF-CLEANING



NOTES:
1. DIMENSIONS ARE IN INCHES.

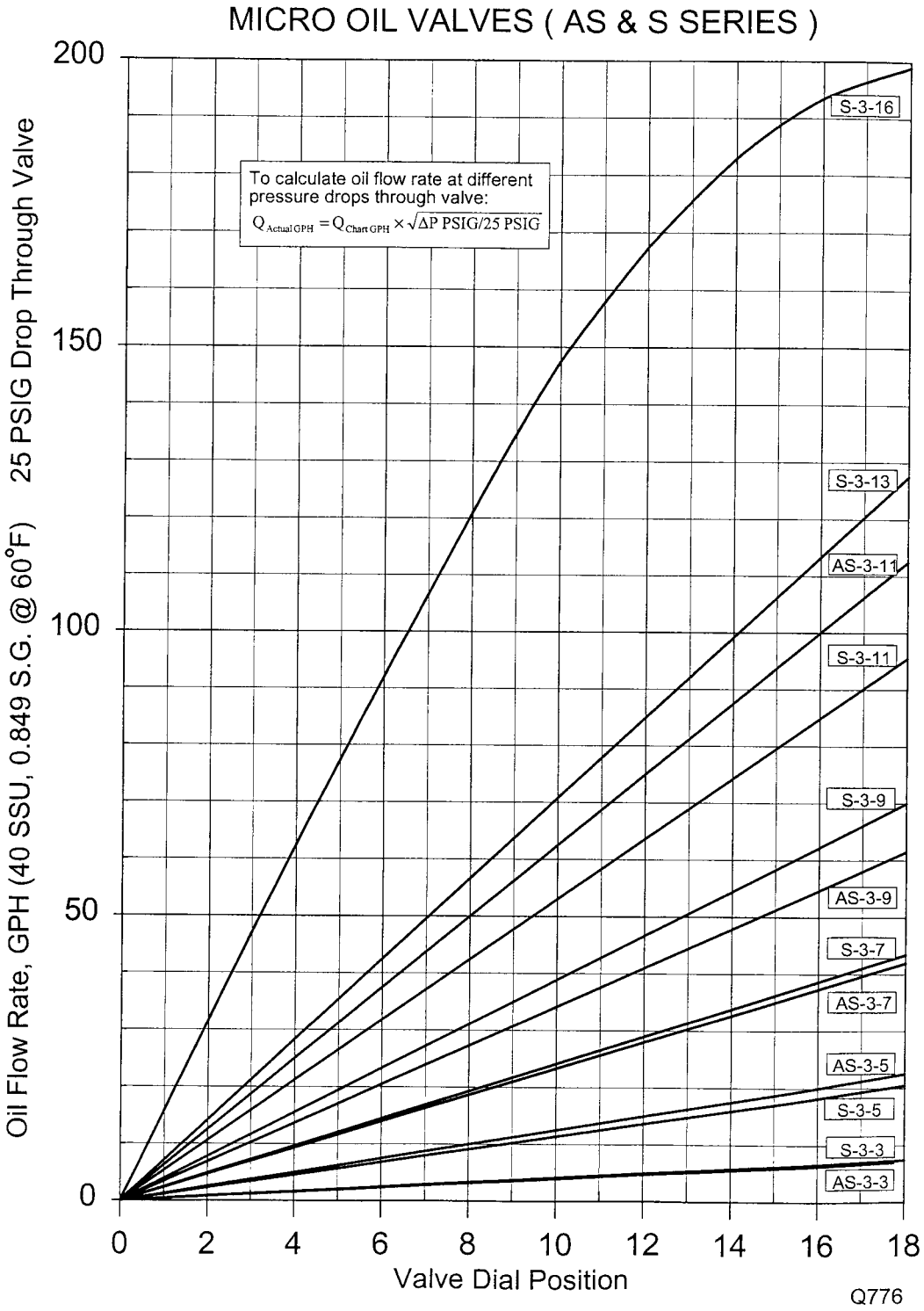
(See Reverse Side For Metric Dimensions)

METRIC DIMENSIONS



NOTES:
1. DIMENSIONS ARE IN MM.

MOV MICRO OIL VALVES
SELF-CLEANING



(See Reverse Side For Metric Data)

METRIC DATA