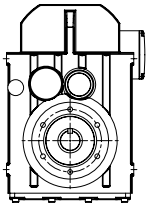
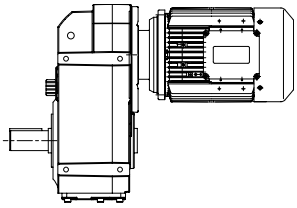
CONTENTS

QUANTIS - MSM

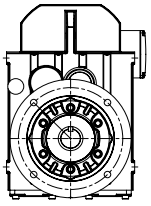
MOUNTING OPTIONS

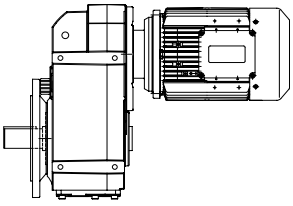
MSM MOUNTING OPTIONS



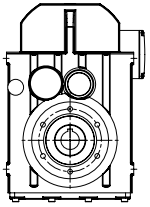


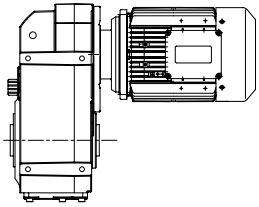
MW..2/3../.S..B14
Motorized Shaft Mount
Universal Mounting (B14 Flange Mounted)
Double/Triple Reduction
Single Extension Solid Shaft



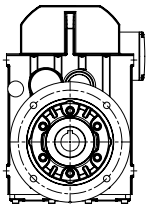


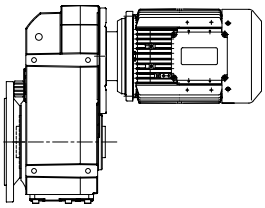
MW..2/3.. /.S..B5
Motorized Shaft Mount
B5 Flange Mounted
Double/Triple Reduction
Single Extension Solid Shaft





MW..2/3../.H..B14
Motorized Shaft Mount
Universal Mounting (B14 Flange Mounted)
Double/Triple Reduction
Straight Hollow Bore

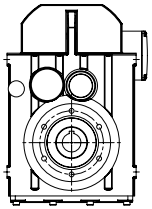


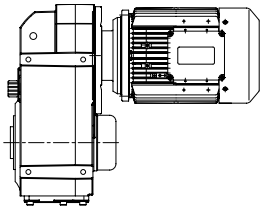


MW..2/3../.H..B5
Motorized Shaft Mounted
B5 Flange Mounted
Double/Triple Reduction
Straight Hollow Bore

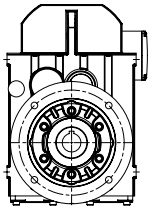
MOUNTING POSITIONS PAGE MSM-10	SELECTION/GEARMOTOR PAGE MSM-62	DIMENSIONS PAGE MSM-98	THERMAL RATINGS PAGE MSM-242

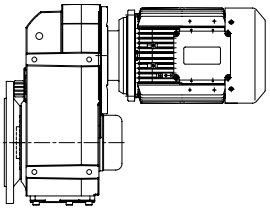
MSM MOUNTING OPTIONS



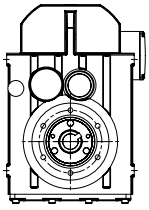


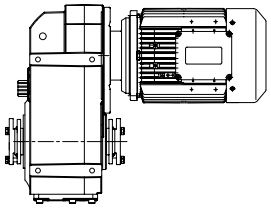
MW..2/3../.C..B14
Motorized Shaft Mount
Universal Mounting (B14 Flange Mounted)
Double/Triple Reduction
Shrink Disk





MW..2/3../.C..B5
Motorized Shaft Mount
B5 Flange Mounted
Double/Triple Reduction
Shrink Disk





MW..2/3../.T..B14*
Motorized Shaft Mounted
Universal Mounting
Double/Triple Reduction
Tapered Hollow Bore with Twin-Tapered Bushings

***** B5 flange is not usable when the unit utilizes the twin tapered bushing option. A torque arm bushing is recommended

MOUNTING POSITIONS PAGE MSM-10	SELECTION/GEARMOTOR PAGE MSM-62	DIMENSIONS PAGE MSM-98	THERMAL RATINGS PAGE MSM-242

NOMENCLATURE

DODGE®

MOTORIZED SHAFT MOUNT C-FACE REDUCERS (MSM)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b
Ex:	M	W	48	2	C	N	140TC	/	7.95	A1	H	I	1.375	B5	200mm	-	-	-	-

1. PRODUCT TYPE
M = MSM

2. OUTPUT CONFIGURATION
W = Universal Mounting

3. UNIT SIZE
38 48 68 88
108 128 148 168

4. STAGE OF REDUCTION
2 = Double Reduction
3 = Triple Reduction

5. INPUT CONFIGURATION
C = Clamp Collar
L = 3 Pc Coupling

6. MOTOR TYPE
N = NEMA
I = IEC

7. MOTOR FRAME

NEMA
56C 140TC 180TC 210TC
250TC 280TC 320TC 360TC

IEC
71D 80D 90D 100D 112D 132D
160D 180D 200D 225D 250D

8. RATIO (Use Actual Ratio From Selection Pages)

MSM 38	9.80 - 179.14
MSM 48	7.95 - 169.53
MSM 68	6.65 - 243.72
MSM 88	8.85 - 302.68
MSM 108	9.52 - 307.24
MSM 128	6.86 - 295.38
MSM 148	7.54 - 306.08
MSM 168	7.71 - 287.95

9. MOUNTING POSITIONS **(See page MSM-11, MSM-12, MSM-13)**
A1 A2 A3
A4 A5 A6

10. OUTPUT SHAFT TYPE
S = Single Extension Solid Shaft
H = Straight Hollow Bore
T = Tapered Hollow Bore
C = Shrink Disk

10a. OUTPUT SHAFT DIMENSION
I = Inch
M = Metric

10b. OUTPUT SHAFT DIAMETER
Single Extension Solid Shaft

	Std		Optional	
MSM 38	1.000”	1.375”	25mm	35mm
MSM 48	1.250”	1.625”	30mm	40mm
MSM 68	1.625”	2.000”	40mm	50mm
MSM 88	2.000”	2.750”	50mm	70mm
MSM 108	2.375”	3.1875”	60mm	80mm
MSM 128	2.875”	3.625”	70mm	90mm
MSM 148	3.625”	4.000”	90mm	100mm
MSM 168	4.375”	4.750”	110mm	120mm

Straight Hollow Bore

	Std		Optional	
MSM 38	1.250”	--	30mm	--
MSM 48	1.375”	--	35mm	--
MSM 68	1.500”	1.4375”	40mm	45mm
MSM 88	2.000”	1.9375”	50mm	60mm
MSM 108	2.375”	2.4375”	60mm	70mm
MSM 128	2.750”	2.9375”	70mm	80mm
MSM 148	3.625”	3.4375”	80mm	90mm
MSM 168	4.000”	3.9375”	100mm	110mm

Shrink Disk

MSM 38	30mm	MSM 108	70mm
MSM 48	40mm	MSM 128	80mm
MSM 68	50mm	MSM 148	95mm
MSM 88	60mm	MSM 168	105mm

Tapered Hollow Bore (See Pages MSM-228 - MSM-235)

(Continued On Next Page)

MOTORIZED SHAFT MOUNT C-FACE REDUCERS (MSM) (con't)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b
Ex:	M	W	48	2	C	N	140TC	/	7.95	A1	H	I	1.375	B5	200mm	-	-	-	-

11. OUTPUT FLANGE TYPE

B5
B14 (STD)

11a. OUTPUT FLANGE DIAMETER

	B5 Flange	B14 Flange
MSM 38	160mm	120mm
MSM 48	200mm	132mm
MSM 68	250mm	150mm
MSM 88	300mm	190mm
MSM 108	350mm	245mm
MSM 128	450mm	295mm
MSM 148	450mm	335mm
MSM 168	550mm	400mm

12. TORQUE ARM

B = Rubber Bushing

13. SCREW CONVEYOR DRIVE (MSM 38 - 128 - MW Style Housing)

SCS = Screw Conveyor with Drive Shaft
SCN = Screw Conveyor - No Drive Shaft

13a. SCREW CONVEYOR DRIVE SHAFT DIAMETER

MSM 38	1.500"			
MSM 48	1.500"	2.000"		
MSM 68	1.500"	2.000"	2.4375"	
MSM 88	2.000"	2.4375"	3.000"	
MSM 108	2.000"	2.4375"	3.000"	
MSM 128	2.000"	2.4375"	3.000"	3.4375"

13b. SCREW CONVEYOR ADAPTER

S = Standard
XT = Harsh Duty

NOMENCLATURE

MOTORIZED SHAFT MOUNT SEPARATE REDUCERS (MSM)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b
(Ex:)	M	W	88	2	S	I	132	/	21.81	A1	S	M	50	B14	190	B	-	-	-

1. PRODUCT TYPE
M = MSM

2. OUTPUT CONFIGURATION
W = Universal Mounting

3. UNIT SIZE
38 48 68 88
108 128 148 168

4. STAGE OF REDUCTION
2 = Double Reduction
3 = Triple Reduction

5. INPUT CONFIGURATION
S = Separate

6. INPUT SHAFT DIMENSION
I = Inch
M = Metric

7. SEPARATE GROUP
71 80 90 100 112
132 160 180 225 250

8. RATIO (Use Actual Ratio From Selection Pages)

MSM 38	9.80	-	179.14
MSM 48	7.95	-	169.53
MSM 68	6.65	-	243.72
MSM 88	8.85	-	302.68
MSM 108	9.52	-	307.24
MSM 128	6.86	-	295.38
MSM 148	7.54	-	306.08
MSM 168	7.71	-	287.95

9. MOUNTING POSITIONS (See page MSM-11, MSM-12, M-13)
A1 A2 A3
A4 A5 A6

10. OUTPUT SHAFT TYPE
S = Single Extension Solid Shaft
H = Straight Hollow Bore
T = Tapered Hollow Bore
C = Shrink Disk

10a. OUTPUT SHAFT DIMENSION
I = Inch
M = Metric

10b. OUTPUT SHAFT DIAMETER
Single Extension Solid Shaft

	Std		Optional	
MSM 38	1.000”	1.375”	25mm	35mm
MSM 48	1.250”	1.625”	30mm	40mm
MSM 68	1.625”	2.000”	40mm	50mm
MSM 88	2.000”	2.750”	50mm	70mm
MSM 108	2.375”	3.1875”	60mm	80mm
MSM 128	2.875”	3.625”	70mm	90mm
MSM 148	3.625”	4.000”	90mm	100mm
MSM 168	4.375”	4.750”	110mm	120mm

10b. OUTPUT SHAFT DIAMETER
Straight Hollow Bore

	Std		Optional	
MSM 38	1.250”	--	30mm	--
MSM 48	1.375”	--	35mm	--
MSM 68	1.500”	1.4375”	40mm	45mm
MSM 88	2.000”	1.9375”	50mm	60mm
MSM 108	2.375”	2.4375”	60mm	70mm
MSM 128	2.750”	2.9375”	70mm	80mm
MSM 148	3.625”	3.4375”	80mm	90mm
MSM 168	4.000”	3.9375”	100mm	110mm

Shrink Disk

MSM 38	30mm	MSM 108	70mm
MSM 48	40mm	MSM 128	80mm
MSM 68	50mm	MSM 148	95mm
MSM 88	60mm	MSM 168	105mm

Tapered Hollow Bore (See Pages MSM-228 - MSM-235)

11. OUTPUT FLANGE TYPE
B5
B14 (STD)

(Continued On Next Page)

MOTORIZED SHAFT MOUNT SEPARATE REDUCERS (MSM) (con't)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b
(Ex:)	M	W	88	2	S	I	132	/	21.81	A1	S	M	50	B14	190	B	-	-	-

11a. OUTPUT FLANGE DIAMETER

	B5 Flange	B14 Flange
MSM 38	160mm	120mm
MSM 48	200mm	132mm
MSM 68	250mm	150mm
MSM 88	300mm	190mm
MSM 108	350mm	245mm
MSM 128	450mm	295mm
MSM 148	450mm	335mm
MSM 168	550mm	400mm

12. TORQUE ARM

B = Rubber Bushing

13. SCREW CONVEYOR DRIVE (MSM 38 - 128 - MW Style Housing)

SCS = Screw Conveyor with Drive Shaft
SCN = Screw Conveyor - No Drive Shaft

13a. SCREW CONVEYOR DRIVE SHAFT DIAMETER

MSM 38	1.500"			
MSM 48	1.500"	2.000"		
MSM 68	1.500"	2.000"	2.4375"	
MSM 88	2.000"	2.4375"	3.000"	
MSM 108	2.000"	2.4375"	3.000"	
MSM 128	2.000"	2.4375"	3.000"	3.4375"

13b. SCREW CONVEYOR ADAPTER

S = Standard
XT = Harsh Duty

NOMENCLATURE

MOTORIZED SHAFT MOUNT INTEGRAL GEARMOTORS (MSM)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b	14
(EX,)	M	W	68	3	G	H	100J4	/	113.59	A3	T	I	1.375	-	-	-	-	-	-	L16

1. PRODUCT TYPE
M = MSM

2. OUTPUT CONFIGURATION
W = Universal Mounting

3. UNIT SIZE
38 48 68 88
108 128 148 168

4. STAGE OF REDUCTION
2 = Double Reduction
3 = Triple Reduction

5. INPUT CONFIGURATION
G = Integral Gearmotor

6. MOTOR TYPE
H = Horsepower

7. MOTOR FRAME

71C4	.25 Hp	90I4	2 Hp
71D4	.33 Hp	100J4	3 Hp
71E 4	.50 Hp	112L4	5 Hp
80F4	.75 Hp	132M4	7.5 Hp
80G4	1 Hp	132N4	10 Hp
90H4	1.5 Hp		

8. RATIO (Use Actual Ratio From Selection Pages)

MSM 38	9.80 - 179.14
MSM 48	7.95 - 169.53
MSM 68	6.65 - 243.72
MSM 88	8.85 - 302.68
MSM 108	9.52 - 307.24
MSM 128	6.86 - 295.38
MSM 148	7.54 - 306.08
MSM 168	7.71 - 287.95

9. MOUNTING POSITION (See pages MSM-11, MSM-12, MSM-13)
A1 A2 A3
A4 A5 A6

10. OUTPUT SHAFT TYPE
S = Single Extension Solid Shaft
H = Straight Hollow Bore
T = Tapered Hollow Bore
C = Shrink Disk

10a. OUTPUT SHAFT DIMENSION
I = Inch
M = Metric

10b. OUTPUT SHAFT DIAMETER
Single Extension Solid Shaft

	Std		Optional	
MSM 38	1.000”	1.375”	25mm	35mm
MSM 48	1.250”	1.625”	30mm	40mm
MSM 68	1.625”	2.000”	40mm	50mm
MSM 88	2.000”	2.750”	50mm	70mm
MSM 108	2.375”	3.1875”	60mm	80mm
MSM 128	2.875”	3.625”	70mm	90mm
MSM 148	3.625”	4.000”	90mm	100mm
MSM 168	4.375”	4.750”	110mm	120mm

10b. OUTPUT SHAFT DIAMETER
Straight Hollow Bore

	Std		Optional	
MSM 38	1.250”	--	30mm	--
MSM 48	1.375”	--	35mm	--
MSM 68	1.500”	1.4375”	40mm	45mm
MSM 88	2.000”	1.9375”	50mm	60mm
MSM 108	2.375”	2.4375”	60mm	70mm
MSM 128	2.750”	2.9375”	70mm	80mm
MSM 148	3.625”	3.4375”	80mm	90mm
MSM 168	4.000”	3.9375”	100mm	110mm

Shrink Disk

MSM 38	30mm	MSM 108	70mm
MSM 48	40mm	MSM 128	80mm
MSM 68	50mm	MSM 148	95mm
MSM 88	60mm	MSM 168	105mm

Tapered Hollow Bore (See Pages MSM-228 - MSM-235)

11. OUTPUT FLANGE TYPE
B5
B14 (STD)

(Continued On Next Page)

MOTORIZED SHAFT MOUNT INTEGRAL GEARMOTORS (MSM) (con't)

	1	2	3	4	5	6	7	/	8	9	10	10a	10b	11	11a	12	13	13a	13b	14
(EX,)	M	W	68	3	G	H	100J4	/	113.59	A3	T	I	1.375	-	-	-	-	-	-	L16

11a. OUTPUT FLANGE DIAMETER

	B5 Flange	B14 Flange
MSM 38	160mm	120mm
MSM 48	200mm	132mm
MSM 68	250mm	150mm
MSM 88	300mm	190mm
MSM 108	350mm	245mm
MSM 128	450mm	295mm
MSM 148	450mm	335mm
MSM 168	550mm	400mm

12. TORQUE ARM

B = Rubber Bushing

13. SCREW CONVEYOR DRIVE (MSM 38 - 128 MW STYLE HOUSING)

SCS = Screw Conveyor with Drive Shaft
SCN = Screw Conveyor - No Drive Shaft

13a. SCREW CONVEYOR DRIVE SHAFT DIAMETER

MSM 38	1.500"			
MSM 48	1.500"	2.000"		
MSM 68	1.500"	2.000"	2.4375"	
MSM 88	2.000"	2.4375"	3.000"	
MSM 108	2.000"	2.4375"	3.000"	
MSM 128	2.000"	2.4375"	3.000"	3.4375"

13b. SCREW CONVEYOR ADAPTER

S = Standard
XT = Harsh Duty

14. BRAKE

L4	(3 ft / lb)	L32	(24 ft / lb)
L8	(6 ft / lb)	L60	(44 ft / lb)
L16	(12 ft / lb)	L80	(59 ft / lb)

MOUNTING POSITIONS

MOTORIZED SHAFT MOUNT C-FACE REDUCERS & INTEGRAL GEARMOTORS

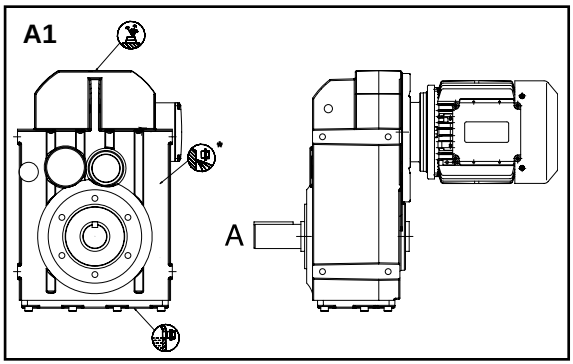
These mounting arrangements are for all output configurations and output shaft types. When ordering, please specify mounting position for correct oil quantity. In case of mounting position other than shown here with regard to the oil quantity, please reference the Incline Mounting page, Quantis-23 and contact Application Engineering.

NOTE: The oil volumes shown are approximate values and cannot be used to correctly set the reducer oil level. **ALWAYS** fill the reducer to the correct oil level plug and recheck in 1 week.

A1

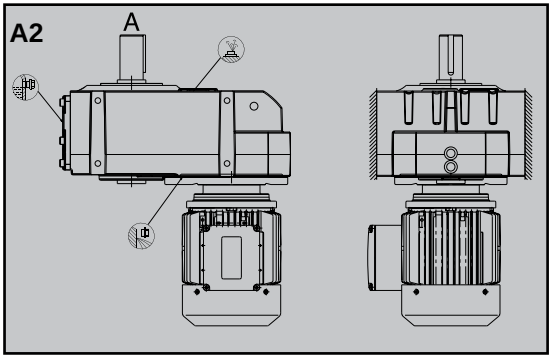
Type	Red. Stage	Pints	Liters
MW38	2	3.2	1.5
	3	3.2	1.5
MW48	2	4.2	2.0
	3	4.2	2.0
MW68	2	9.5	4.5
	3	9.3	4.4
MW88	2	18.4	8.7
	3	18.4	8.7
MW108	2	30.4	14.4
	3	29.4	13.9
MW128	2	58.5	27.7
	3	57.3	27.1
MW148	2	84.1	39.8
	3	82.2	38.9
MW168	2	138.8	63.3
	3	131.0	62.0

OIL LEVEL VENTILATION OIL DRAIN



A2

Type	Red. Stage	Pints	Liters
MW38	2	4.2	2.0
	3	4.2	2.0
MW48	2	6.1	2.9
	3	6.1	2.9
MW68	2	12.3	5.8
	3	12	5.7
MW88	2	24.7	11.7
	3	24.1	11.4
MW108	2	40.4	19.1
	3	39.7	18.8
MW128	2	71.9	34.0
	3	73.1	34.6
MW148	2	103.6	49.0
	3	104.4	49.4
MW168	2	148.1	70.1
	3	149.2	70.6



* on opposite side

MSW 38 units are sealed for life and furnished with only one plug for filling and draining.

NOTE: Shaded A2 Mounting is not a recommended mounting position due to the weight of oil on the high speed input seal.

NOMENCLATURE PAGE MSM-4	OVERHUNG LOADS PAGE MSM-14	SELECTION GEARMOTOR PAGE MSM-62	WEIGHTS PAGE MSM-250

MOTORIZED SHAFT MOUNT C-FACE REDUCERS & INTEGRAL GEARMOTORS

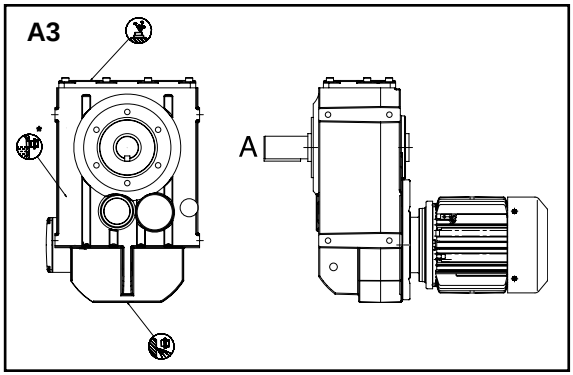
These mounting arrangements are for all output configurations and output shaft types. When ordering, please specify mounting position for correct oil quantity. In case of mounting position other than shown here with regard to the oil quantity, please reference the Incline Mounting page, Quantis-23 and contact Application Engineering.

NOTE: The oil volumes shown are approximate values and cannot be used to correctly set the reducer oil level. **ALWAYS** fill the reducer to the correct oil level plug and recheck in 1 week.

A3

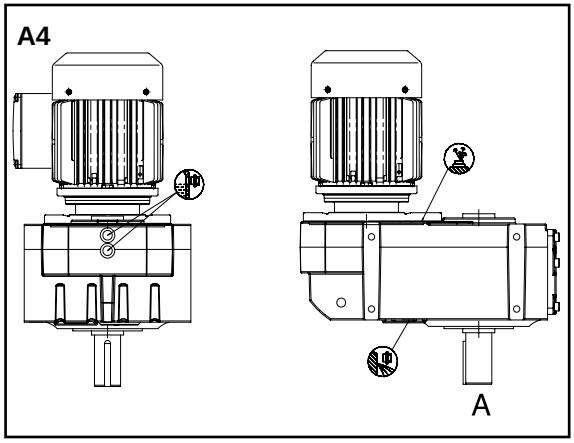
Type	Red. Stage	Pints	Liters
MW38	2	1.7	0.8
	3	1.7	0.8
MW48	2	3	1.4
	3	3.2	1.5
MW68	2	5.9	2.8
	3	6.1	2.9
MW88	2	14.2	6.7
	3	13.7	6.5
MW108	2	18.8	8.9
	3	19.2	9.1
MW128	2	30	14.2
	3	31.5	14.9
MW148	2	46.1	21.8
	3	47.1	22.3
MW168	2	67.8	32.1
	3	69.1	32.7

OIL LEVEL VENTILATION OIL DRAIN



A4

Type	Red. Stage	Pints	Liters
MW38	2	3.6	1.7
	3	4.2	2
MW48	2	6.3	3
	3	6.1	2.9
MW68	2	10.1	4.8
	3	13.5	6.4
MW88	2	21.8	10.3
	3	26.6	12.6
MW108	2	31.7	15
	3	39.9	18.9
MW128	2	58.5	27.7
	3	72.9	34.5
MW148	2	90.9	43
	3	101.1	51.6
MW168	2	139.3	65.9
	3	168.4	79.7



* on opposite side

MSW 38 units are sealed for life and furnished with only one plug for filling and draining.

NOMENCLATURE PAGE MSM-4	OVERHUNG LOADS PAGE MSM-14	SELECTION GEARMOTOR PAGE MSM-62	WEIGHTS PAGE MSM-250

MOUNTING POSITIONS

MOTORIZED SHAFT MOUNT C-FACE REDUCERS & INTEGRAL GEARMOTORS

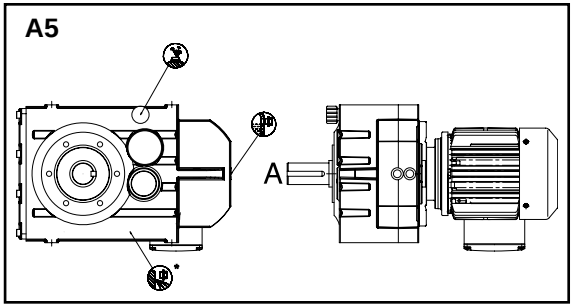
These mounting arrangements are for all output configurations and output shaft types. When ordering, please specify mounting position for correct oil quantity. In case of mounting position other than shown here with regard to the oil quantity, please reference the Incline Mounting page, Quantis-23 and contact Application Engineering.

NOTE: The oil volumes shown are approximate values and cannot be used to correctly set the reducer oil level. **ALWAYS** fill the reducer to the correct oil level plug and recheck in 1 week.

A5

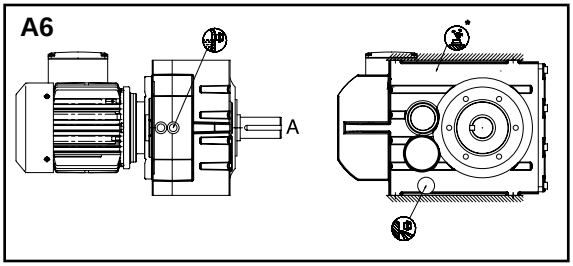
Type	Red. Stage	Pints	Liters
MW38	2	2.5	1.2
	3	2.5	1.2
MW48	2	3.8	1.8
	3	3.8	1.8
MW68	2	8	3.8
	3	7.8	3.7
MW88	2	16.9	8
	3	16.3	7.7
MW108	2	25.4	12
	3	24.7	11.7
MW128	2	45.6	21.6
	3	45	21.3
MW148	2	67	31.7
	3	65.9	31.2
MW168	2	104	49.2
	3	102.3	48.4

OIL LEVEL VENTILATION OIL DRAIN



A6

Type	Red. Stage	Pints	Liters
MW38	2	2.5	1.2
	3	2.5	1.2
MW48	2	3.8	1.8
	3	3.8	1.8
MW68	2	8	3.8
	3	7.8	3.7
MW88	2	16.9	8
	3	16.3	7.7
MW108	2	25.4	12
	3	24.7	11.7
MW128	2	45.6	21.6
	3	45	21.3
MW148	2	67	31.7
	3	65.9	31.2
MW168	2	104	49.2
	3	102.3	48.4

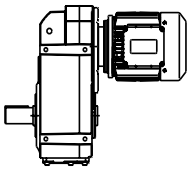
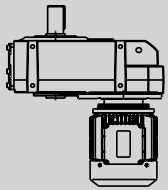
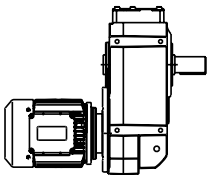


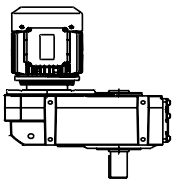
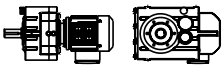
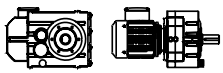
* on opposite side

MSW 38 units are sealed for life and furnished with only one plug for filling and draining.

NOMENCLATURE PAGE MSM-4	OVERHUNG LOADS PAGE MSM-14	SELECTION GEARMOTOR PAGE MSM-62	WEIGHTS PAGE MSM-250

Table of Old vs. New Mounting Positions

	A1	A2	A3
MSM (MW)	B6 B5 	V6 V3 	B6-02 B5-02 

	A4	A5	A6
MSM (MW)	V5 V1 	B3 B8 B5-01 	B3-01 B8-01 B5-03 

Shaded A2 mounting is not a recommended mounting position due to the weight of oil on the high speed input seal.

QUANTIS
QUANTIS GOLD
ILH
RHB
MSM

OVERHUNG LOADS

DODGE®

SOLID OUTPUT SHAFT - MSM GEARMOTORS AND REDUCERS

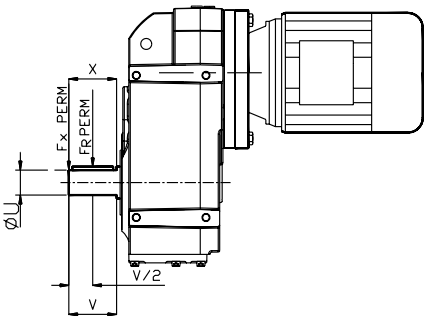
Permissible Overhung Loads at Service Factor SF = 1.0

1. Calculation based on bearing life

$$F_x \text{ perm.1} = F_r \text{ perm } \frac{y}{z + X} \quad [lb_f]$$

2. Calculation based on mechanical strength

$$Fx \text{ perm.2} = \frac{a}{X} \quad [lb_f]$$



The data in the table below lists the permissible output shaft overhung load (OHL) when the load is located at mid shaft. To calculate the permissible OHL when the load is located at other positions, use the formulas above along with the data below.

Both equations 1 and 2 must be used to determine if the bearing or shaft strength limits the OHL. Limit the OHL to the lower of the 2 calculations.

Type Stages	y in/mm	z in/mm	a Lb-in / kNmm	u in/mm	v in/mm	* in/mm	F_R perm. in (lbf) for x=u for output speeds n_2 in RPM							
							$n_2 \le 16$	$n_2 \le 25$	$n_2 \le 40$	$n_2 \le 63$	$n_2 \le 100$	$n_2 \le 160$	$n_2 \le 250$	$n_2 \le 263$
	4.80	**3.82**	**947**	**1.00**	**1.97**	ccw	2508	2203	1922	1690	1486	1219	1011	990
MW38	122	97	107	25	50	cw	1720	1414	1137	906	706	704	678	673
(2/3)	5.2	3.82	1328	1.375	2.76	ccw	2292	2008	1757	1543	1359	1111	923	904
	132	97	150	35	70	cw	1589	1306	1055	845	661	653	626	622
	5.94	**4.76**	**1575**	**1.25**	**2.36**	ccw	3554	3123	2726	2359	2058	1676	1395	1368
MW48	151	121	178	30	60	cw	2466	2033	1643	1393	1135	1098	1025	1015
(2/3)	6.34	4.76	2098	1.625	3.15	ccw	3330	2925	2554	2210	1931	1573	1309	1284
	161	121	237	40	80	cw	2311	1905	1541	1306	1063	1030	961	952
	7.48	**5.91**	**3939**	**1.625**	**3.15**	ccw	8104	7158	6303	5571	4923	4157	3551	3484
MW68	190	150	445	40	80	cw	6480	5546	4676	3951	3310	3083	2859	2831
(2/3)	7.87	5.91	4549	2.000	3.94	ccw	7308	6767	5959	5264	4649	3926	3349	3297
	200	150	514	50	100	cw	6122	5237	4417	3733	3127	2913	2701	2674
	8.86	**6.89**	**7107**	**2.000**	**3.94**	ccw	13366	11792	10348	9143	7992	6751	5797	5698
MW88	225	175	803	50	100	cw	11084	9522	8088	6867	5923	5465	4966	4911
(2/3)	9.65	6.89	9949	2.750	5.51	ccw	12167	10762	9443	8331	7280	6161	5283	5201
	245	175	1124	70	140	cw	10106	8679	7372	6258	5396	4979	4527	4474
	10.31	**7.95**	**12834**	**2.375**	**4.72**	ccw	16860	14953	13128	11640	10295	8637	7362	7220
MW108	262	202	1450	60	120	cw	13134	11179	9404	7907	6570	6263	5826	5774
(2/3)	11.1	7.95	17109	3.188	6.69	ccw	15584	13771	12140	10734	9502	7981	6795	6665
	282	202	1933	80	170	cw	12127	10321	8679	7289	6064	5779	5385	5328
	12.99	**10.24**	**18676**	**2.875**	**5.51**	ccw	27975	24731	21737	19230	16717	14092	12044	11826
MW128	330	260	2110	70	140	cw	21979	18726	15758	13273	11640	10886	10005	9897
(2/3)	13.78	10.24	24013	3.625	6.69	ccw	26267	23211	20436	18063	15695	13214	11321	11113
	350	260	2713	90	170	cw	20642	17590	14810	12480	10935	10227	9398	9297
	15.67	**12.13**	**40670**	**3.625**	**6.69**	ccw	28476	25250	22233	19713	16803	14154	12113	11905
MW148	398	308	4595	90	170	cw	21163	17937	14950	12456	11519	10832	9964	9860
(2/3)	16.06	12.13	40759	4.000	8.27	ccw	27707	24560	21676	19195	16369	13799	11799	11574
	408	308	4605	100	210	cw	20605	17462	14556	12125	11209	10533	9699	9600
	18.56	**14.23**	**87625**	**4.375**	**8.27**	ccw	42430	37507	32961	29178	25137	21159	18171	17833
MW168	472	362	9900	110	210	cw	33029	28157	23685	19910	17897	16653	15239	15070
(2/3)	18.98	14.23	63656	4.75	8.27	ccw	41456	36633	32239	28540	24536	20722	17728	17433
	482	362	7192	120	210	cw	32287	27522	23154	19453	17499	16281	14896	14732

* Direction of rotation with view on output shaft. To convert lbf to Newtons (N), multiply by 4.448
Bold - standard shaft cw - clockwise ccw - counter clockwise

Heavy duty bearings are standard on 68 and above. Heavy duty bearings are not available for sizes 38 and 48.

NOMENCLATURE PAGE MSM-4	MOUNTING POSITIONS PAGE MSM-10	SELECTION GEARMOTOR PAGE MSM-62	WEIGHTS PAGE MSM-250

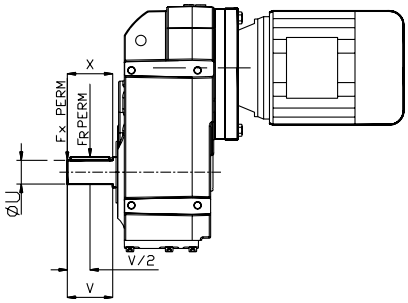
DODGE®

HOLLOW OUTPUT SHAFT - MSM GEARMOTORS AND REDUCERS

Permissible Overhung Loads at Service Factor SF = 1.0

1. Calculation based on bearing life

$$F_x \text{ perm.1} = F_r \text{ perm } \frac{y}{z + X} \quad [lb_f]$$



The data in the table below lists the permissible output shaft overhung load (OHL) when the load is located at mid shaft. To calculate the permissible OHL when the load is located at other positions, use the formulas above along with the data below.

Type Stages	y in/mm	z in/mm	u in/mm	v in/mm	*	FR perm. in (lbf) for x=u for output speeds n2 in RPM							
						$n_2 \le 16$	$n_2 \le 25$	$n_2 \le 40$	$n_2 \le 63$	$n_2 \le 100$	$n_2 \le 160$	$n_2 \le 250$	$n_2 \le 263$
MW38	**5.20**	**3.82**	**1.250**	**2.76**	ccw	2380	2091	1823	1605	1412	1156	957	938
(2/3)	132	97	30	70	cw	1633	1340	1078	860	670	666	643	639
MW48	**5.94**	**4.76**	**1.375**	**2.76**	ccw	3439	3021	2640	2285	1990	1623	1352	1323
(2/3)	151	121	35	70	cw	2390	1968	1593	1348	1099	1063	992	983
	7.48	**5.91**	**1.5**	**3.15**	ccw	4079	3586	3075	2764	2436	1996	1645	1611
MW68	190	150	40	80	cw	2448	1961	1522	1157	841	923	954	952
(2/3)	7.81	5.91	1.4375	3.94	ccw	4125	3622	3171	2789	2453	2013	1662	1623
	200	150	45	100	cw	2467	1978	1535	1167	848	931	962	960
MW68	**7.48**	**5.91**	**1.5**	**3.15**	ccw	8206	7241	6370	5630	4972	4208	3585	3518
(2/3)	190	150	40	80	cw	6554	5607	4735	3995	3347	3117	2891	2862
◆ HD	7.87	5.91	1.4375	3.94	ccw	8281	7317	6436	5690	5017	4241	3624	3558
	200	150	45	100	cw	6613	5656	4778	4032	3377	3146	2918	2889
	8.56	**6.89**	**2.000**	**3.94**	ccw	6268	5504	4813	4246	3673	2991	2481	2425
MW88	225	175	50	100	cw	3820	3072	2393	1833	1485	1604	1583	1576
(2/3)	9.65	6.89	1.9375	5.51	ccw	6203	5543	4854	4276	3696	3011	2498	2441
	245	175	60	140	cw	3844	3093	2409	1846	1496	1616	1594	1587
MW88	**8.56**	**6.89**	**2.000**	**3.94**	ccw	13312	11752	10312	9099	7951	6735	5773	5684
(2/3)	225	175	50	100	cw	11041	9484	8058	6841	5902	5445	4946	4893
◆ HD	9.65	6.89	1.9375	5.51	ccw	13429	11838	10381	9179	8030	6783	5814	5726
	245	175	60	140	cw	11126	9555	8117	6905	5946	5484	4985	4927
	10.71	**7.95**	**2.375**	**5.51**	ccw	16839	14908	13115	11603	10291	8630	7352	7210
MW108	272	202	60	140	cw	13116	11167	9391	7898	6562	6252	5821	5766
(2/3)	11.36	7.95	2.4375	6.69	ccw	16733	14794	13034	11532	10215	8582	7302	7161
	287	202	70	170	cw	13034	11097	9330	7846	6520	6211	5783	5727
	13.58	**10.24**	**2.750**	**6.69**	ccw	27987	24739	21743	19240	16722	14096	12048	11829
MW128	345	260	70	170	cw	21968	18739	15768	13280	11643	10891	10009	9901
(2/3)	13.58	10.24	2.9375	6.69	ccw	27552	24328	21414	18936	16476	13858	11865	11662
	345	260	80	170	cw	21633	18469	15532	13084	11469	10727	9860	9752
	15.47	**12.13**	**3.625**	**6.69**	ccw	28310	25104	22099	19628	16740	14071	12042	11834
MW148	393	308	80	170	cw	21043	17835	14869	12385	11444	10757	9908	9805
(2/3)	16.26	12.13	3.4375	8.27	ccw	28691	25444	22401	19867	16934	14265	12208	11998
	413	308	90	210	cw	21320	18069	15061	12549	11604	10909	10035	9931
	18.37	**14.23**	**4.000**	**8.27**	ccw	43258	38235	33618	29781	25603	21601	18524	18216
MW168	467	362	100	210	cw	33732	28711	24153	20322	18248	16984	15540	15369
(2/3)	18.37	14.23	3.9375	8.27	ccw	43368	38330	33796	29888	25704	21688	18592	18285
	467	362	110	210	cw	33855	28821	24244	20370	18319	17047	15600	15428

*Direction of rotation with view on output shaft. To convert lbf to Newtons (N), multiply by 4.448

Bold - standard shaft cw - clockwise ccw - counter clockwise

◆ = Heavy Duty bearing option - for sizes 68 and 88 with hollow bore only. Sizes 38 and 48 have no heavy duty optoin. Sizes 108, 128, 148 and 168 have heavy duty bearings as standard

NOMENCLATURE PAGE MSM-4	MOUNTING POSITIONS PAGE MSM-10	SELECTION GEARMOTOR PAGE MSM-62	WEIGHTS PAGE MSM-250